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REACHING PEOPLE IN NEED OF MENTAL HEALTH SERVICES THROUGH NOVEL MODELS OF INTERVENTION DELIVERY

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ABSTRACT

The treatment gap refers to the difference in the proportion of people who have disorders and the proportion of those individuals who receive treatment. In developing and developed countries, the gap is enormous, i.e., most individuals in need of mental health services receive no treatment. Among the many barriers is the dominant model of delivering psychosocial interventions. That model includes one-to-one, in-person treatment, with a trained mental health professional, provided in clinical setting (e.g., clinic, private practice office, health-care facility). That model greatly limits the scale and reach of psychosocial interventions. The article discusses many novel models of delivering interventions that permit scaling treatment to reach people who are not likely to receive services. Four models (task shifting, best-buy, disruptive interventions, and Entertainment Education) are illustrated. These and other models are readily available, most have evidence in their behalf, but are still not sufficiently exploited to close the treatment gap. The article argues for the need for multiple models to optimize reaching the many diverse groups in need of care.

Key Words: Models of Delivering Treatment, Evidence-Based Treatment

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Mental Health Services

The development of evidence-based psychotherapies is truly a remarkable advance. As is well known, these refer to interventions that have been evaluated in randomized controlled clinical trials, where treatments, client samples, and outcomes have been well specified, and where the effects have been replicated. There are now scores of such treatments that can be applied to a variety of clinical disorders including various forms of depression, anxiety, eating disorders, sleep disorders, suicidality, autism spectrum disorder, conduct problems, and many others (e.g., Nathan & Gorman, 2015; Weisz & Kazdin, 2017). A priority has been to disseminate treatments from research where the effects have been established to clinical settings where patient care is carried out. This is important, but it neglects the problem that serves as the focus of this article. Most people with mental health problems are never seen in treatment. They do not receive evidence-based or non-evidence-based treatment or any sessions from a healer or professional. Consequently, even if every client currently seen in treatment received an evidence-based treatment tomorrow, this would be of no help in delivering services to people in need.

The article focuses on ways to deliver treatments, so they can reach the vast majority of individuals in need of services. The article begins by clarifying the problem and conveying why psychological treatments as currently delivered cannot reach most people in need. Novels models of delivering treatment would permit reaching more individuals. This article reviews and illustrates different models and how they would accomplish that goal. The means of closing the treatment gap are available but they go well beyond how the traditional mental health professions (e.g., psychiatry, psychology, social work) conceive of and provide treatment services.

Treatment Gap

Overview of the Problem

The problem to which this article is devoted is referred to as the *treatment gap*. This is the difference in the proportion of people who have disorders (prevalence) and the proportion of those individuals who actually receive care (Kohn et al., 2004; Patel, Maj et al., 2010). In the context of

mental health, the enormity of the gap is evident from research on the prevalence of disorder and on the delivery of treatment (Andrade et al., 2014; Becker & Kleinman, 2013; Merikangas et al., 2011; Steel et al., 2014; Whiteford et al., 2013). I highlight rather than review the large literature to convey key points.

The problem of high prevalence rates and a gap in the proportion who receives treatment has been studied internationally. The World Health Organization ([WHO] Mental Health Survey Consortium, 2004) provided extensive data on the treatment gap from surveys of over 60,000 adults in 14 countries in the Americas, Europe, Middle East, Africa, and Asia. The proportion of respondents who received treatment for emotional or substance-use disorders during the previous 12 months ranged from a low of 0.8 percent (Nigeria) to a high of 15.3 percent (United States). These percentages refer to those who received treatment among those in need. These numbers convey that the vast majority 99.2 percent and 84.7 percent, respectively (by subtracting the above percentages from 100 percent) of individuals in need did not receive treatment.

Additional studies provide a similar picture. For example, in the United States, approximately 25 percent of the US population meet criteria for a psychiatric disorder within the past 12 months (Kessler et al., 1994; Kessler, Chiu, et al., 2005). This increases to approximately 50 percent of the population over the course of life (Kessler, Berglund et al., 2005). With a population of approximately 330 million, 25 and 50 percent translate to over 82 and 165 million people, respectively in need of treatment. Similarly, in Peru the estimates indicate that approximately 20 percent individuals experience a mental disorder. With a population of approximately 33 million, this translates to approximately 6.6 million people in Peru in need of services (Toyama et al., 2017). Other reports in Peru have shown a lower rate of 13.5 of individuals (sampling across 5 cities) to meet criteria for a mental disorder within the past 12 months and 29 percent for life-time rate (Fiestas & Piazza, 2014; Piazza & Fiestas, 2014). Even at these lower percentages, the number of people in need of services (e.g., 29 percent of 33 million = 9.6 million people) is enormous.

Within a given country, the prevalence of mental disorder is greater among ethnic minority and indigenous groups, individuals who cannot cover basic needs, people living in rural or relatively isolated areas, and individuals in areas where there is armed conflict. Also, data are sparse for people who are displaced from their homes and are forced to migrate across borders. In many studies on the prevalence, some disorders are not counted (e.g., schizophrenia, sub-syndromal disorders) and samples (e.g., hospitalized patients) are omitted. Consequently, the percentages I have illustrated are likely to be underestimates of the problem in terms of the percentages and number of individuals in need of mental health services.

Separate lines of research have addressed the extent to which individuals in need of services actually receive them. A review of the international literature has consistently found that most people in need of services do not receive treatment. For example, in reports of the WHO that in low and middle-income countries between 76 and 86 percent of people with severe mental disorders do not receive any treatment (see Toyama et al., 2017). The higher income countries, the problem is not necessarily much better. For example, in the US, approximately 70 percent in need of services do not receive any services (Kessler, Demler et al., 2005). Data within individual countries often show that ethnic minority and indigenous groups are even less likely than these overall percentages to receive treatment. The lack of available services for most people and systematic disparities among those services in a given culture underlie the importance of delivering services in ways that can reach many more people as well as target special groups. Also, those services must surmount the burdens commonly known about seeking mental health care. For example, reports from the Peruvian National Institute of Mental Health noted that most people (between 69 and 85 percent) who stated the need for mental health services did not seek treatment (see Toyama et al., 2017). Among the reasons were lack of financial resources and knowing where and how to seek care. An earlier report, noted that 67.2 percent of individuals with severe mental disorders received no treatment (Piazza & Fiestas, 2014). Among individuals with moderate or mild disorders, approximately 82 percent and 85 percent, respectively did not receive treatment.

Among the small minority of individuals who receive services what exactly do they receive? In the WHO study, "receiving services" was based on asking respondents if they had contact with any person from a long list of caregivers for problems with emotions, nerves, mental health, or use of alcohol or drugs. Included were mental health professionals (e.g., psychiatrist, psychologist), general medical or other professionals (e.g., general practitioner, occupational therapist), religious counselors (e.g., minister, sheikh), and traditional healers (e.g., herbalist, spiritualist). The list varied among countries depending on local circumstances where types of healers may vary. The precise service provided by these individuals was not identified. Also, the duration of the intervention was not known, but receiving services required at least one contact. Thus, when we say that 15 percent of individuals received treatment, information is ambiguous and could be one contact with someone who has had no training in mental health.

In the US, a national survey elaborated who receives treatment as well as some further information about the nature of that treatment (Wang, Lane et al., 2005). Over 9,000 individuals with psychiatric disorders answered questions about their treatment that included who the service provider was (e.g., psychiatric, family physical, social worker, spiritual advisor and others) and the type of treatment they received (e.g., self-help group, medication, hospital admission). Minimally adequate treatment was defined as receiving an intervention (e.g., medication, psychotherapy) that followed evidence-based guidelines for the specific disorder and included multiple contacts (rather than only one visit). For individuals with a psychiatric disorder, 21.5 percent received treatment from a mental health specialist; 41.7 percent received treatment if this is expanded to include contact with any health-care person, in addition to those trained in mental health. For individuals who did not meet criteria for disorder (subsyndromal disorder), 4.4 percent received treatment from a mental health specialist and 10.1 percent received treatment if this is expanded to include any contact. Overall, across the entire sample, only 32.7 percent were classified as receiving at least minimally adequate treatment. The investigators concluded that only one third of treatments provided met minimal standards of adequacy based on evidence-based treatment guidelines.

General Comments

Key points summarize the state of the treatment gap. First, most individuals with mental disorders do not receive treatment and that applies to low-, middle-, and high-income countries. There is no single summary percentage one can provide because of variation among studies in: the disorders that are measured (e.g., subsyndromal disorders, substance use and abuse, personality disorders), what "counts" as treatment, the list of who is included as potential service providers (e.g., mental health professional, religious leader), and ethnicity, culture, and country of the sample. And yet, there is a consistent conclusion that can be supported, namely, we are not providing treatment to the large majority of people in need of services.

Second, when treatment is provided, it includes a variety of interventions administered by mental health professionals, health-care professionals in other areas (e.g., general practitioners), and by others (e.g., religious leaders, healers). This care usually refers to some contact of clients. Yet that contact is not necessarily formalized psychological treatment or medication.

Third and related, evidence-based treatments are not used very frequently for mental disorders for the proportionately few individuals who receive care. Epidemiological surveys have not been designed to probe in depth precisely what the interventions are, how long they are administered, and whether the persons administering the treatment are trained in use of the treatment. Yet, we know from other sources as well that evidence-based treatments are not being used for mental and substance use disorders as a general rule (Institute of Medicine [IOM], 2001, 2006). The goals for individual patients and service providers are not just to receive and provide any treatment but rather to receive and provide the best treatments and specifically those that have an evidence base. In addition to ensuring that the most well supported interventions are provided to those who seek and receive treatment, we need to extend these treatments to the much larger group of people in need who receive no services at all.

Dominant Model of Treatment Delivery

Key Characteristics

There are many impediments or barriers that stand in the way of people receiving mental health interventions (e.g., Andrade et al., 2014; Corrigan, Druss, & Perlick, 2014; Smith et al., 2019). These are often classified into system and attitudinal issues. System issues include the obstacles related to the services themselves. Examples would be the costs of treatment, proximity to mental health services and health professionals, and whether services are even available to some groups. Attitudinal issues include such obstacles such as stigma of attending treatment and lack of knowledge about mental illness and treatment options. These and other barriers have been thoroughly discussed, as evident in sample of citations noted previously. For the present discussion, consider one barrier related to the treatments we develop and over which we as investigators and mental health providers have some control. That impediment I refer to here as the *dominant model of treatment delivery,* i.e., the most frequent way psychological interventions are provided to individuals who seek treatment.

Before beginning, it is essential to distinguish a treatment technique from how that treatment is delivered. The distinction is easily conveyed in the more familiar context of interventions for physical health. In the context of physical health care, some vaccines (the intervention) can be provided by injection, nasal spray, orally, or needle-free patch (the models of delivery). That is, the intervention is not the distinguishing feature here but rather how that intervention is delivered or provided. Similarly, in the context of mental health care, one can distinguish the intervention (e.g., cognitive behavior therapy, exposure-based treatment) from the models of delivery (e.g., provided by a live therapist, as a self-help treatment, through smartphone "app," or from the internet). A critical impediment to providing psychological services is not so much about the interventions but rather the model or way in which they are delivered. That model almost guarantees that we cannot provide treatment on a large scale and is a significant part of the reason there is such a large treatment gap.

The dominant model of delivering psychotherapy has three interrelated characteristics.

1. Treatment sessions are provided in person and one-to-one with a client (individual, couple, family);
2. Treatment is administered by a highly trained (e.g., master's or doctoral level) mental health professional; and
3. Sessions are held at a clinic, private office, or health-care facility.

This model applies to the vast majority of the hundreds of therapies there are whether they are more traditional (e.g., psychodynamic, humanistic, nondirective) or more contemporary therapies (e.g., cognitive behavior therapy, exposure-based treatment, dialectical behavior therapy) and whether treatment is evidence-based or not. Treatments are not always administered in this way, but they usually are.

Limitations of the Model in Reaching People

Meeting with a mental health professional individually in treatment conveys the constraints of the model. To begin, in any given country there are too few mental health professionals to meet the demands using the dominant model. For example, in the US the estimated number of mental health professionals is approximately 700,000 (Hoge et al., 2007). This is likely to be an underestimate given the range of providers not usually counted, including other professionals (e.g., pastoral counselors) and individuals with various titles (e.g., personal coaches, healers). Even so, it is difficult to envision that the number could help sufficiently if 25 percent (or approximately 82 million people) of the US population in any given year meets criteria for a psychiatric disorder leaving aside those with subclinical disorders. Similarly, in Peru the number of mental health professionals (psychiatrists, psychologists, social workers, specialized workers) is relatively small. For example, just considering psychiatrists approximately 600 - 700 have been identified in Peru (Rondon, 2009; Toyama et al., 2017). If 20 percent individuals in Peru (approximately 6.6 million) are in need of services, one can see how difficult it would be to provide treatment in the traditional (dominant) model. No doubt services are provided by others than psychiatrists (e.g., psychologists,

social workers, non-licensed providers) but it would be difficult to imagine a sufficient work force to handle the need of millions for services.

An initial reaction might be to claim that it is not the model of delivery that is the problem but the fact that we just need more trained mental health professionals who can provide treatment. Having more mental health professionals might be valuable but cannot be expected by itself to have significant impact on reaching many more people. The main reasons relate to the geographical distribution, interests, and composition of the professional workforce. Consider these in turn. First, in the US, for example, mental health professionals are concentrated in highly populated, affluent urban areas and in cities with major universities (Health Resources and Services Administration, 2010). All of the states in the US include rural areas where the concentration of people to square miles of land is low (www.hrsa.gov/ruralhealth/aboutus/definition.html). For these areas and small towns more generally, very few and more commonly no mental health professionals may be available. Similarly, in Peru the vast majority of mental health professionals live in Lima, with some others spilling over to other cities. They cannot begin to serve the many diverse rural areas of the country (Rondon, 2009). In other words, more professionals to provide would not necessarily help at all given where they congregate.

Second, the majority of mental health professionals do not provide care to populations and clinical problems for which there is an especially great demand (children and the elderly, individuals of minority and indigenous groups, special populations in need such as victims of violence, single-mothers, individuals of lower income). For example, most psychiatric disorders have their onset in childhood and adolescence but most individuals in the mental health professions are trained in the treatment of adults. At the other end of the age spectrum, the proportion of elderly individuals is expanding rapidly in the world and are increasingly underserved in mental (and physical) health services (IOM, 2011a, 2012). Too few mental health professionals are trained to provide services either to the children to the elderly.

Finally, disproportionately few mental health professionals reflect the cultural and ethnic characteristics of those in need of care. Individuals do not necessarily have to be treated by persons

of the same ethnic and cultural group with which they identify. Yet entering into treatment, forming an alliance, being able to communicate in one's primary language, and having a shared view of psychological problems can all depend on having a match therapist and patient in relation to ethnicity, culture, and language. A mismatch of ethnicity and culture between prospective client and therapist at minimum adds another obstacle for receiving services.

For the above reasons, expanding the workforce to deliver treatment with the usual, in-person, one-to-one model of care, with a trained mental health professional is not likely to have major impact on reaching the vast number of people in need of services. The increased person power is not likely to provide treatments where they are needed, for the problems that are needed, and attract the cultural and ethnic mix of clientele that are essential. As I noted, it might be useful to have more professionals, but that alone is not very helpful or likely to have major impact on the treatment gap.

Another feature of the dominant model raises similar concerns in reaching individuals in need. Requiring clients to go to a special setting (e.g., clinic, private office, or hospital) is a constraint too. Settings where services are provided are not readily available for most individuals. And "going" to a setting raises a host of other barriers that are both system issues (e.g., transportation) and attitudinal issues (e.g., having adequate knowledge about psychological problems and treatment options).

General Comments

One-to-one, in-person therapy is referred to here as the dominant model because clinical practice, graduate and medical school training, clinical program accreditation, licensing of clinicians, pre- and post-doctoral internships, and research on psychosocial interventions draw heavily on this model. The dominant model has benefits that are already well known. For example, that model has served as the basis for identifying and developing evidence-based therapies and for administering the treatments in clinical work. Nothing of my comments detracts from these benefits. And for relatively few individuals who have access to that model, there may be little need to provide new models of delivering treatment. My focus pertains to what would be needed to reach the largely unserved majority of individuals in need of mental health services.

The need to move to additional models has been recognized for many decades (e.g., A. Christensen, Miller, & Muñoz, 1978; Collins et al., 2013; Ryder, 1988). And, within the mental health professions, the models of delivering psychosocial interventions have expanded. Many of these involve the use of technology and online versions of treatment that draw on the internet and other media, including video, phone, and application software (apps) for smartphones and tablets. Also, integrated care has increased in which health care facilities provide both physical and mental health services. Even so, the dominant model continues to serve as the primary basis for providing services and helps to maintain the treatment gap. There are many options to redress this situation.

Novel Models of Intervention Delivery

Currently, we have many evidence-based interventions that are administered in the dominant model of delivery that is essentially one-to-one individual therapy. We want models of delivery that can reduce the treatment gap. A useful point of departure is to begin with the question, "What are key characteristics we would want of models of delivery to ensure we are closing the treatment gap? Table 1 lists several characteristics but consider just the first two for a moment. The first is scalability and refers to whether the model allow treatment to reach a large number of individuals in need of treatment. The second characteristic is reach of the model and refers to whether the model allows treatment to extend to those individuals and subgroups that are especially likely to be excluded from treatment (e.g., children, members of indigenous and minority groups, single parents, and others), as a mentioned before? Scalability can be achieved (many more people who receive treatment) without improving the reach (extending treatment to those usually excluded from services). We know the dominant model is particularly weak on the criteria scalability and reach. Other characteristics in the Table 1 are important too but the challenge begins with these first two.

Table 1

Key Characteristics of Models of Treatment Delivery to Reach People in Need of Services

Characteristic	**Definition**
Scalability	The capacity of the intervention to be applied in a way that reaches a large number of people
Reach	Capacity to extend treatment to individuals not usually served or well served by the traditional dominant service delivery model
Affordability	Relatively low cost compared to the usual model that relies on individual treatment by highly trained (Master's, doctoral degree) professionals
Expansion of the nonprofessional work force	Increase the number of providers who can deliver interventions.
Expansion of settings where interventions are provided	Bring interventions to locales and everyday settings where people in need are likely to participate or attend already
Feasibility	Ensure the interventions can be implemented and adapted to varied local conditions to reach diverse groups in need
Flexibility	Ensure that there are options and choices because no one model of delivery is likely to have the reach needed.
Acceptability of the model of delivery	Acceptability usually is used to refer to judgments by laypersons, clients, and others of whether the intervention procedures are appropriate, fair, and reasonable for the problem that is to be treated. The extension here is that the model of delivery must be acceptable and is separate from the acceptability of the intervention.

Multiple models have emerged from global health care, business, economics, and the media, all well outside of traditional care within the mental health professions (Kazdin, 2018). Table 2 highlights these models of delivery and their key characteristics. In general, they have been applied to physical health care but now many have moved into mental health care. I highlight four models here to convey different ways in which treatments can reach large numbers of individuals.

Table 2

Illustrations of Novel Models of Delivering Health Services to Expand the Reach of Interventions

Model	**Key Characteristic**	**Examples and Applications**	**Sample References**
Task Shifting	Expanding the workforce by using lay individuals to administer interventions that otherwise might be delivered by health professionals.	Used worldwide for treatment and prevention of HIV/AIDS. Now extended to mental health services delivery in several studies.	WHO (2008b) Patel, Weiss et al. (2010).
Disruptive Innovations	A process in which services or products that are expensive, complicated, and difficult to deliver move in novel ways to alter these characteristics. In health care, services are brought to people more than bringing people to the services.	The delivery of health screening and treatment in shopping malls, drug stores, and grocery stores. Use of smartphones, apps, tablets to assess and deliver mental health interventions.	Christensen et al. (2009) Rotheram-Boris et al. (2012)
Interventions in Everyday (unconventional settings)	Expansion of health care beyond clinics and traditional settings to places that people normally attend for other reasons. Settings have included schools, work place, churches, hair salons, and barber shops, among others.	Delivery of health screening and education messages in hair salons. For children and adolescents, applications in the schools and other settings noted under Disruptive Innovations.	Linnan et al. (2001) Madigan et al. (2007)
Best-buy Interventions	Interventions selected based on their cost-effectiveness, affordability, feasibility for the setting (e.g., country, city), and other criteria. Conceived as an economic tool to help countries select among available options.	To reduce use of tobacco use, raising taxes, protecting people from cigarette smoke, warning about the dangers of smoking, and enforcing bans.	Chisholm et al. (2007) WHO (2011a)
Life-style Changes	A range of behaviors individuals can engage in that are known to have impact on physical and / or mental health including controlling diet, exercising, meditation, interacting with nature, and sustaining good social relations.	Exercise and maintaining strong social relations are two life style characteristics that have broad impact on health and physical health (and mortality).	Frumkin et al., (2017); Pietromonaco & Collins (2017). Walsh (2011)
Use of Social Media	Use of widely available material that includes social networking (e.g., Facebook, Twitter, texting, YouTube, Skype) that bring people together in novel ways and to present information, obtain assessment, and to provide feedback or delivery of interventions.	Writing regularly as part of blogging to draw on many evidence-based expressive writing interventions; meeting with a therapist or support group in a virtual social world.	Baker & Moore (2008) Gorini et al. (2007)

Entertainment Education	Use of television or radio to deliver health-care messages and to model health-promoting behaviors. A culturally sensitive long-running series (e.g., TV series) in which different characters take on different roles, deal with the challenges related to the focus of the intervention, and model adaptive strategies.	Early application focused on reducing the birthrate and use of birth control in Mexico.	Singhal & Rogers (1999) Singhal et al. (2003)
Use of Technologies	Use of Web-based interventions delivered remotely. Several self-help procedures rely on web-based treatment, mobile apps, are included here as well	Use of Internet-based treatment for cigarette smoking. Web-based self-help treatment for clinical depression.	Muñoz et al. (2016); Titov et al. (2015)
Socially Assistive Robotics	Robots that can engage with and respond to, individuals. They can provide support, companionship, encourage, and prompt.	Applications related to mental health have focused primarily on older adults (loneliness, social isolation) and children with autism spectrum disorder (socialization, communication).	Broadbent (2017); Rabbitt et al. (2015)
Social Network Interventions	Social networks refer to the ways in which individuals are connected to a larger group, their degree of separation, and characteristics (e.g., believes, mental and physical disorders) spread or cluster among individuals.	Many mental and physical problems (e.g., obesity, suicidality) are influenced by one's social network connections. Network interventions have altered cigarette smoking and physical activity in adolescents and children, respectively.	Christakis & Fowler (2013); Valente et al. (2007).

Note. These models occasionally have overlapping characteristics (e.g., bringing interventions to the people in need rather than asking individuals in need to come to special settings) but are worth distinguishing because they come from different traditions, disciplines, and collaborations. Each of the models in the table is elaborated and illustrated in greater depth elsewhere, beyond the specific references listed in the table (Kazdin, 2018)

Illustrations of Novel Models Delivery

Task Shifting. Task shifting is a method to strengthen and expand the health-care work force by redistributing the tasks of delivering services to a broad range of individuals with less training and fewer qualifications than traditional workers (e.g., doctors, nurses) (see WHO, 2008). [1] This redistribution allows an increase in the total number of health workers (e.g., nonprofessionals, lay individuals) to scale up the scope of providing services. The concept and practice of task shifting are not new and currently are in place in many developing and developed countries where nurses, nurse assistants, midwives, and community health care workers provide services (e.g., birthing, neonatal care, immunization) once reserved for doctors (e.g., Bang et al., 2005; Greenwood et al., 1989).

Task shifting emerged from global health initiatives, particularly in developing countries. These initiatives focused on treating and preventing infectious (e.g., malaria, HIV/AIDS, tuberculosis) and non-communicable disease (e.g., cardiovascular disease, diabetes, cancer, respiratory disease) and improving living conditions and education (e.g., IOM, 2010, 2011b; United Nations, 2000; WHO, 2011a). These initiatives provide an important context because they contended with key challenges and barriers of meeting health-care needs in many cultures, under a variety of conditions (e.g., enormous resource constraints, geographical obstacles), and where people in need of services were not receiving them. The majority of task-shifting applications have focused on physical health in developing countries (e.g., Ethiopia, Haiti, Malawi, and Namibia) where shortages of human resources and the burden of illness (e.g., HIV/AIDS) are acute. Empirical evaluations have shown task shifting to rapidly increase access to services, reach large numbers of individuals in need, yield good health outcomes, and have high levels of patient and counselor satisfaction (WHO, 2008).

Task shifting has been extended to mental health problems because of its ability to be scaled up to provide services to individuals who otherwise do not have access to care and its adaptability to diverse countries, cultures, and local conditions. An example in Peru is the Allillanchu Project in Lima (Diez-Canseco et al., 2018). [2] This was a comprehensive program that integrated early detection of mental illness, referral, and treatment in public health care services. As part of this, task shifting drew on practitioners (nurses, midwives, and nurse assistants) who shared in the

delivery of diagnostic, screening, and treatment services. All of this was done in 22 primary health care services. Services were provided to only 70 patients but served as an excellent demonstration showing feasible ways to integrate mental and physical health care and to draw on practitioners to carry out critical procedures.

Task shifting has been evaluated in many controlled trials for the treatment of depression, anxiety, eating disorders, trauma, schizophrenia, and alcohol abuse, in which evidence-based treatments are administered by lay individuals (Balaji et al., 2012; Bolton et al., 2014; Kilpela et al., 2014; Nadkarni, et al., 2016; Patel et al., 2016; Rahman et al., 2008, 2016). These demonstrations not only establish the clinical utility of task shifting but add to the evidence that lay counselors can deliver evidence-based interventions and achieve favorable treatment outcomes. This latter point is critical to underscore. The dominant model of delivering psychological treatment includes highly trained mental health professionals. Multiple studies, in multiple settings, and with multiple psychiatric disorders have shown such training is not needed for effective application of treatment. Lay individuals can be trained in the procedures and be just as effective in achieving therapeutic change.

As any single model of delivering treatment, task shifting has its own unique challenges. Among them is the task of recruiting individuals who will deliver treatment. This is easier in most circumstances than obtaining trained mental health professionals, but still can be an issue depending on the scope and scale of the treatment that is to be delivered and other potential constraints (e.g., applications in multiple rural settings). The related challenge is obtaining a sufficient number of trainers to develop the skills in those who provide direct treatment. In some of the physical health task-shifting work, administration of treatment (e.g., medication) was more straightforward than administration of psychotherapy would be. These challenges do not at all detract from the contributions of task shifting. Moreover, many of the concerns I highlight here in passing have been addressed empirically in early applications of task shifting (WHO, 2008) and now in many studies I have noted in applications to psychiatric disorders.

Best-Buy Interventions. Best buy refers to interventions that are affordable, feasible, and suited to the characteristics of the local health care system (WHO, 2011a). Best buy considers features such as appropriateness for the setting (e.g., culture, resources), capacity of the health system to deliver a given intervention to the targeted population, technical complexity of the

intervention (e.g., level of training that might be required), and acceptability of the intervention based on local cultural, religious, and social norms.

The model grew out of economic concerns of physical health care. Disability and mortality exert economic impact on individuals, families, and households, as well as on industries and societies through consumption of health-care services, loss of income, productivity, and capital expenditures (Bloom et al., 2011; WHO, 2011b). Best-buy emerged from this context to designate interventions for physical illnesses, particularly the control of chronic diseases globally (Chisholm, Lund, & Saxena, 2007; Chisholm & Saxena, 2012; IOM, 2010).

Best-buy interventions are based on estimates of utilization and impact and rely on mathematical models (e.g., Chisolm et al., 2007). Empirical tests of the models are then conducted to ensure that well-intended, feasible, and scalable interventions yield the intended outcomes and in fact are best buys. Some best-buy interventions (e.g., selective taxes, bans on advertising to reduce substance use and abuse) differ from the usual psychological interventions and do not require compliance by clients in the same way as psychosocial treatments usually do and do not require adherence to specific treatment protocols by therapists. For example, for alcohol use, best-buy interventions include enhanced taxation of alcoholic beverages and comprehensive bans on advertising and marketing. These strategies have been best buys in light of their low cost relative to effectiveness, their affordability within a given culture, and their feasibility. Excessive alcohol use has been identified as a focus to help reduce the incidence of cardiovascular diseases and cancers, but the impact would likely extend to other burdensome conditions (e.g., cirrhosis of the liver, depression, traffic injuries and deaths) associated with alcohol use and abuse (WHO, 2011a).

A unique feature of best-buy as a model of delivery is that it provides criteria for selecting among evidence-based treatments, at least in relation to wide spread application. One begins with scalability and reach as the critical dimensions along with cost, feasibility, and related dimensions. With this in mind, one can ready see why delivery of treatment in the dominant model currently in use is not likely to be a very good buy. That is, for most if not all cultures the model cannot reach many people, is not affordable nor feasible.

Disruptive Innovations. Disruptive technology or disruptive innovations emerged from business rather than health care (Bower & Christensen, 1995; C. Christensen, 2003; C. Christensen et al., 2009). The concept pertains to a change in a product or service that is not a linear,

evolutionary, or incremental step. Rather the product or service often provides a disruptive, disjunctive, or qualitative leap and develops or extends a market that is not otherwise being served.

Disruptive innovation theory refers to the process by which products or services that are complicated, expensive, and less affordable move to novel delivery models and products that change these characteristics. Many innovative products and services that are part of our daily lives illustrate application of the process. Examples include innovations in manufacturing (e.g., interchangeable parts, assembly line in car production), business (e.g., smartphone, smartwatches, tablets), consumer purchasing (e.g., via credit cards, smartphones, and PayPal), social networking (e.g., Facebook, Twitter, LinkedIn), and health care (e.g., home pregnancy tests, medical robotics, and urgicare, walk-in, and minute clinics) (see Christensen et al., 2009). These innovations often provide simpler, less expensive, or more convenient solutions to problems and often can be scaled to reach people who would not otherwise have access.

Telemedicine, which refers to the use of communication and information technology to extend the reach of medical practice, is one example of a disruptive innovation that has changed how and where some patients receive medical care (e.g., Roine, Ohinmaa, & Hailey, 2001). Telemedicine has been in use for many decades (Cipolat & Geiges, 2003) and now encompasses many specialty areas within medicine (e.g., telepsychiatry, telesurgery, teleopthamology. teleaudiology, and teleneurology) (e.g., Buck et al., 2016; Martini et al., 2013; Wooton, 2003). Other disruptive innovations in health care have utilized nonmedical settings, such as drug stores and shopping malls, to provide a range of services to measure blood pressure or cholesterol, treat various illnesses (e.g., allergies, pinkeye, strep throat) and skin conditions (e.g., cold sores, minor burns, wart removal), and provide vaccines (e.g., flu shots). Patient referrals can be made if the tests reveal the need for further diagnostic work or intervention.

Disruptive innovations would provide more accessible ways of delivering mental health interventions (see Rotheram-Borus et al., 2012). Many interventions already have extended to mental health care via "apps," the Web, and video conferencing (Backhaus et al., 2012; Bennett-Levy et al., 2010; Parikh & Huniewicz, 2015, Price et al., 2014). For example, various devices (e.g., smartphones, smartwatches, and smart clothing) can measure heart rate, blood pressure, blood glucose levels, and emotional states and can provide the necessary feedback to the individuals themselves or to their health-care provider. The devices can also prompt the use of interventions

such as relaxation, cognitive strategies, and other self-management techniques based on assessment in real time (e.g., Pallavicini et al., 2009; Zhang et al., 2010). Smart clothing that tracks a variety of biological measures, used more commonly in relation to exercise and athletics, will no doubt find its way into assessment and treatment feedback loops for emotional and related problems (e.g., stress, hypertension).

Online delivery of treatment is a disruptive intervention that extends of the dominant model of therapy. Multiple options are available online for the treatment of anxiety and depression (e.g., Colville, 2019; Staples et al. 2019). Such programs often include core cognitive behavioral treatment sessions as used with in-person treatment (e.g., scheduling of positive activities, identifying and challenging cognitive distortions) and are divided into sessions (with video clips describing key information and assigned homework) that patients can complete from home. There are now scores of other evidence-based self-help psychosocial interventions for a range of psychological problems (Bennett-Levy et al., 2010; Harwood & L'Abate, 2010). These interventions can leap over many of the usual barriers of receiving treatment and expand on the dominant model of in-person, individual psychotherapy at a clinic.

The use of technology to deliver psychosocial interventions vary in the extent to which they mimic the dominant model. For example, one demonstration cognitive behavioral treatment was provided on line as a course (Titov et al., 2015). Support was provided by a trained therapist by phone or email on a weekly basis. Even so, with the use of trained therapists (characteristics of the dominant model), the treatment was 1,471 individuals completed treatment (out of 2,049 who enrolled). Use of a trained therapist (one feature of the dominant treatment model) still allowed larger than usual scale application of treatment (mean therapist time per case was 112 minutes).

An example of a very large-scale application consisted of a Web-based intervention for smoking cessation (Muñoz et al., 2016). The program was available in two languages (Spanish and English) and was visited by over 290,000 individuals from 168 countries. Data reported for over 7,000 participants revealed smoking quit rates ranging from 39 to 50 percent at different points of assessment up to an 18-month follow-up. This program advanced the notion of Massive Open Online Interventions (MOOI) to resemble the model (Massive Open Online Courses-MOOC) in education. MOOI would make available interventions that could reach individuals on a scale as the demonstration in the context of cigarette smoking.

As I noted, technology has many forms and formats. It is useful to consider technology at an early stage, even though facets (e.g., telepsychiatry) are not new. And yet, other technologies with some use in both mental and physical health care (e.g., social robotics) are rather unfamiliar (Broadbent, 2017; Rabbitt, Kazdin, & Scassellati, 2015). For example, social robots have already shown their positive effects in improving social behaviors among children with autism spectrum disorder (Scassellati et al., 2018) and on a larger scale in improving social interaction, mood, and communication among elderly persons, including those with dementia (Koh & Kang, 2018; Shibata & Wada, 2011). The social robotics literature no doubt will expand greatly to address a range of mental health problems even though there are a variety of obstacles to surmount (e.g., low cost robots, evidence of their effectiveness, resistance of mental health professionals).

Several issues emerge in considering the strengths, limits, and potential uses of technology. First, and most relevant to the present article, there are few applications of technology demonstrating that interventions can be scaled to reach large numbers and produce significant (statistically, clinically) outcomes. Evidence for these might well be on the horizon, but there has been cogent concern voiced that the contribution of the use of technology may be oversold at this time or at least until better scaling with outcome evidence is forthcoming (Bauer & Mossner, 2013; Tomlinson et al., 2012).

Second, technologies bring their own set of limitations related to adoption including acceptability of the public in the context of "treatment," maintaining participation in a program that may not be or seem individualized, and access to the internet where these treatments are available. Interestingly, the utility and adoption of technology (by clinical services, therapists, and clients) may well improve in the next decade as a function of cohort effects. Younger age individuals are increasingly at home with technology and social media and young children in familiar routinely chat with relatives via cell phones and Skype.

If technology as a means of providing mental health services takes the route of other disruptive innovations, the landscape of treatment may change considerably. When disruptive innovations first emerge (e.g., personal computer, cell phone), they do not compete head-to-head with the traditional product (e.g., mainframe computers, landline phones). Over time the innovation may begin to compete and take over as the product develops and the use expands. The expansions include greater convenience, ease of use, and portability in relation to original products. Perhaps innovative

treatment delivery models that are disruptive including those involving technology will have a similar course.

Entertainment Education. Entertainment Education refers to a model of delivery that provides an intervention via television (or radio if television is not available in the country or region of interest). This is a culturally sensitive long-running series in which different characters take on different roles, deal with the challenges related to the focus of the intervention, and model adaptive strategies. The series can deliver health-care messages but more than that can change behavior in society in significant ways.

The process of developing the series begins by studying individuals within a given culture (e.g., surveys, focus groups) and developing characters for an extended television drama series that reflect local culture and people functioning in their daily lives. The characters take on different roles, deal with daily challenges of life within the culture, and model social change on the critical issues, based on the goals of the program. The intervention focus is integrated into realistic renditions of the lives of people in the culture and how an issue emerges and is dealt with by the characters within the episodes of the series. The purpose is to develop an engaging series with multiple characters with whom the audience will identify and to integrate into the series dramatic events that will promote audience change.

An early application emerged in Peru in 1969, with a soap opera referred to as *Simplemente Maria*. Maria lived a life that others could identify with as a struggling single parent and tried to improve herself and eventually did so by becoming a fashion designer through her sewing. The show fostered for encouragement of improving mobility and surmounting challenges such as poor socioeconomic background, abandonment by a partner, and cultural issues. The series was very popular including but beyond Peru and led to other such series.

The formalization of Entertainment Education began as an application in Mexico as a soap opera designed to improve family planning and reduce fertility rates (Singhal & Rogers, 1999). Family life, marital relations, and the daily drama and stressors were conveyed in detail as the televised series unfolded. The fictional family gained control over their lives and benefitted from family planning—all in realistic episodes which showed the struggles and decision-making individuals and couples go through. The characters modeled coping with dilemmas and decision making in realistic ways and using characters (actors) the audience comes to know well over time.

In terms of impact, in this initial program in Mexico, sales of contraceptives in the community rose dramatically, and there was a 34 percent drop in birthrates over a 5-year period.

The model has been widely applied with many foci including HIV/AIDS prevention, sexual abstinence for adolescents, parenting, domestic violence, sexual and reproductive health and promoting a sustainable environment and mitigating climate change and with applications in Africa, China, Latin America, India, the Philippines, the United States, and others (e.g., Singhal et al., 2003; Vaughan et al., 2000; Wang & Singhal, 2016, 2016; Yue, Wang, & Singhal, 2019). The reach of the model can be enormous. For example, in Peru, the program as *Bienvenida Salud,* produced by Minga Peru in the Peruvian Amazon, has had 120,000 regular listeners through its health-focused Entertainment Education radio program (Durá et al., 2013). Over 15,000 letters from listeners have detailed peoples' experiences and their appreciation for the program. In India, the Entertainment Education program reached approximately 400 million people (Wang & Singhal, 2018). Given the already notable accomplishments in many different countries, the Entertainment Education model could be extended with a large-scale focus on mental health problems, perhaps beginning with pervasive conditions such as depression and anxiety. In addition, developing strategies that reduce mental and physical disorders through treatment and prevention (e.g., lifestyle changes, see Table 2) also might be viable foci for the model.

General Comments

I have illustrated only a few of the models (see Table 2) but they convey the major points, namely that that novels model of delivery are available, have been applied already, and raise the prospect of providing interventions on a large scale. For some of the models, familiar psychological treatments are provided but with a model of delivery that is different from the dominant model. Task shifting is one example where evidence-based treatments (e.g., cognitive behavior therapy, interpersonal psychotherapy), well established in the dominant model, are delivered by lay individuals. In other models, both the intervention and technique of delivery are outside of what usually is considered as an intervention by the mental health professions. For example, best-buy interventions can be well outside the usual psychosocial techniques (e.g., taxes, advertising) and are delivered in ways well outside of traditional treatment (e.g., laws, social policy). Similarly, Entertainment Education includes a special intervention (telenovela) provided through television (or radio), hardly anything like the usual psychosocial interventions. The broader message might be that if want to reach people in need, provide services on a large scale, and in the process reduce the

burdens of mental illness, we ought to move well beyond what the mental health professions normally offer.

Many of the models have emerged and been applied to physical health (e.g., chronic and infectious disease) but prompted extensions to mental health for a few key reasons. First, global health initiatives to address physical health-care services revealed gaps in mental health services (IOM, 2010; WHO, 2011b). Many barriers that emerge in providing physical health care to large swaths of individuals in need, particularly in developing countries, were recognized to be similar to the barriers of providing mental health care (Lancet Global Mental Health Group, 2007; Sharan et al., 2009). Consequently, models for delivering treatment proved to be applicable to both mental and physical health services. In addition, as noted with best-buy interventions, an intervention with a primary target of reducing one type of dysfunction (e.g., substance use and abuse) may have direct consequences on other types of dysfunction (e.g., physical disease and mortality).

Second, it has become increasingly clear that mental and physical health are inextricably intertwined, with bidirectional, reciprocal, and comorbid relations. For example, major depression increases the likelihood of more than 20 physical diseases (Mulugeta et al., 2019). Beyond a specific disorder such as depression a variety of common influences promote both physical and mental illness. Some of the more familiar culprits include inflammation and stress, but there are now many others including as air pollutants and particulates (e.g., Bakian et al., 2015; Lim et al., 2012), breastfeeding practices (e.g., Krol et al., 2014; Oddy et al., 2010), microbiota in our guts (e.g., Kleiman et al., 2015; Nowakowski et al., 2016), and mitochondrial abnormalities (Rezin et al., 2009; Rossignol & Frye, 2015). In addition, psychological factors (e.g., depression) can directly influence the course of physical diseases (e.g., heart disease, HIV by decreasing medication adherence). More generally, reducing the burdens of physical health cannot neglect mental health, as reflected in the frequently cited statement there is "no health without mental health" (Prince et al., 2007, p. 859; WHO, 2005, p. 11). In any case, models of delivering treatments can apply to both physical and mental health and several treatments may be expected to have impact on both as well.

Finally, in many countries there has been a move toward integrated care, which refers to providing coordinated services for physical health as well as mental health and substance use in the same service setting (e.g., Collins et al., 2013; Crowley & Kirschner, 2015; Diez-Canseco et al., 2018; Vasan et al., 2014). Integration provides greater opportunity to reach a segment of the population that seeks physical health care and, in that process, will have access to mental health care

as well. Presumably there are fewer barriers (e.g., stigma) when one can go for a physical health problem and seamlessly be triaged into services for mental health problems. Of course, there are many who do not seek or obtain physical health care. However, the key point is to have multiple models of delivery of mental health services to capture an increasing portion of the individuals who otherwise receive no services. Integrated care does not have to be the solution but could be a significant part of multiple strategies.

The models I have illustrated and otherwise listed add to the dominant model and increase the likelihood of reaching more people who are in need of mental health care but are not being served. Countries vary considerably in heterogeneity of the culture, ethnicity, geography, resources, infrastructure, and many other characteristics that influence treatment delivery. Within a country the variation may be vast as, for example, reflected in many countries where the areas where some subpopulations (e.g., indigenous groups) are far away from the cities where treatments may be available. Different subgroups within a country can vary widely on what they consider as a psychological problem and an appropriate intervention.

Some of the models I mentioned have cultural and ethnic sensitivity as a point of departure. They also are designed to accommodate local conditions including what is feasible, not just economically, but what is acceptable to those who would be the recipients of intervention. For example, in task shifting lay members of the communities in which treatment is provided are directly involved in delivery of the care. Thus, one is delivering and receiving interventions among one's peers of the same culture, ethnicity, and traditions. In best-buy interventions, precisely what interventions are likely to be appropriate is determined by local conditions and resources (e.g., government, political, likely impact) and in that sense also are compatible with the culture and society and, Entertainment Education begins by understanding and representing people within a given society and the problems they face and can overcome. Different approaches (treatment and delivery models) may be needed to ensure that we reach all or at least most segments of the population in need of services.

Multiple Models are Essential

Pictorial Representation of the Challenge

I have highlighted a few of the many available models of intervention delivery. The diversity of the models is a key feature. If we want to reach people in need of services, we must move well beyond the dominant model of providing treatment. In fact, no single model can be expected to achieve a significant reduction of the treatment gap. We will need multiple models.

Figure 1 provides pictorial illustration of how multiple models play a critical role. Consider the top portion of the figure (A) to represent all individuals in need of mental health services. This would include individuals with clinical dysfunction, subclinical disorders, and others who are impaired due to some facets of their emotional, cognitive, behavioral, or social functioning (e.g., stress and distress, loneliness, suicidality).

The middle portion of the figure (B) shows a small circle (very small subgroup) that covers up part of the larger circle. That small circle represents the proportion of individuals who do receive treatment and receive that through the dominant model of individual therapy. An obvious feature of B is that most individuals in need of treatment (A portion) still are not receiving interventions. B is where we are now in providing services and reflects the treatment gap.

Insert Figure 1 About Here

The C portion of the figure reflects the use of multiple delivery models and has a few noteworthy features. First, the various models of delivery (each model is a circle within the larger circle) overlap with one another. This is important because it reflects the likelihood that individuals may need to be reached by more than one model because they might otherwise be missed. A given model may not be acceptable or convenient, so we would each individual in need of care to have more than one option if possible.

Second, the dominant model of administering treatment (shaded circle from B) is still present. I am not suggesting we eliminate the dominant model. My prior comments indicated that the dominant model by itself has very little impact on reaching people in need. I am not suggesting elimination of that model. The dominant model may reduce the burden for the small portion (of the

pie, A in the figure) who need care—that is an elite group but still a group in need of services. That is a reason to continue advocating for the model but lamenting our heavy reliance on its use.

Third, the figure (C) conveys that even with multiple overlapping models, there are still "spaces" in the larger circle that are that are not covered. These spaces reflect people in need of treatment who will still receive no treatment. Even with many models and overlap, we cannot be assured we will reach everyone in need. A realistic goal is to greatly reduce the treatment gap. At this point in time, based on worldwide data, we can say that the vast majority of treatment in need of treatment receive nothing. Even if we do not reach everyone, how wonderful it would be if we could reverse that statement and say that the vast majority of individuals in need of treatment do receive treatment and even an evidence-based intervention at that. Multiple models are available that make that feasible. Among the advantages is that they differ on the extent to which various barriers (e.g., cost, stigma, mental health literacy) apply and impede providing services.

Especially Promising Leads

Technology in its many forms is making the fastest gains in delivering health care and is likely to lead in scalability and reach of interventions. Among the advances are the use of assessments in real time in the client's everyday life, automated feedback of the assessment as needed to professionals and the individuals themselves, and then interventions programmed to help as needed based on the assessment information. As I have mentioned, smartphones, smartwatches, and apps can do the assessment in real time (e.g., clients can enter mood or physiological measures are assessed directly) and the information can automatically prompt an intervention (e.g., coping strategies, meditation, mindfulness). If, and as needed, the information can automatically be fed back to a clinical or web-based service. Also, many different media and formats are available that connect directly with individuals.

Many facets that are already in use for recreational purposes (e.g., virtual reality, games) have moved into mental and physical health care, as have many "apps." Others such as the use of drones to deliver physical health services are just beginning to be explored (e.g., Claesson et al., 2017). Robotics too are advancing; with machine learning they can learn and be trained via modeling (watching humans) in carrying out procedures and in decision making (e.g., Brynjolfsson & Mitchell, 2017). Therapeutic applications of drones or very smart robots seem remote but already much is feasible that might be surprising.

Reaching people in need of mental health services through novel models of intervention delivery

As a potential path to future service delivery, the combination of three distinguishable but interconnected advances are worth noting. First, there is the technology itself that permits assessment and delivery of interventions in diverse ways, as I have noted previously. Second, advances in artificial intelligence (AI), with emphasis on machine learning and use of neural network models, increase the sophistication of what can be accomplished. These include learning, accumulating what has been learned, and generating new concepts that can be used to deliver, enhance, and individualize interventions. Third, an advance for both assessment and treatment is the availability and use of "big data". This allows evaluation of outcomes, examination of moderators for more personalized interventions, and integration of information in novel ways that can be fed back and used in AI to better target interventions. Consider an example.

Suicide rates in the world are high and encompass one million deaths annually (see Nock et al., 2008) with a rate of 1 suicide every 20 seconds that was anticipated for the year 2020 (Bertolote & Fleischmann, 2015). Variations in reporting among countries, exclusion of some countries, the likely under reporting (attribution) of suicide as a cause of death preclude precision in any estimate, except to say that problem is enormous. Suicide is the second leading cause of death for teenagers and young adults (ages 15-29). As an illustration, a study of adolescents in Peru (urban areas) showed that, 26.3 percent reported having suicidal ideation, and 17.5 percent reported having attempted suicide during the past 12 months (Sharma et al., 2015). Another report noted increases in suicide from 2000 to 2013 in Peru (see Hernández-Vasquez et al., 2016), yet of course this is a worldwide problem and Peru is not unique in this regard.

How to reach so many people in need? One notable example is Facebook, with its enormous reach. Facebook has been using AI to examine people's posting of texts related to suicide (Facebook, 2017; Tsukayama, 2017). Individuals at risk for committing suicide often go "live" on Facebook with text posts or videos. Using AI, these are read, quickly interpreted, and first responders nearby are contacted for immediate intervention. The project has been developing for over a decade, involving experts, individuals with first-hand experience with suicide attempts, including loved ones of those who have committed suicide. The information is used to consider how to provide support and intervene using local authorities, emergency services, and other users of Facebook who are nearby and can intervene. AI is used to evaluate past posts and videos to identify risk and risk of self-harm. Scaling and reaching people who otherwise would receive no

intervention are impressive, when considered in relation to other or more traditional models of connecting with individuals.

To be sure, it is easy to identify all sorts of problems with the use of Facebook (or other media of the same type) including issues of privacy and confidentiality, false positives and false negatives in identifying cases, and the fact that not everyone in the world is using Facebook or other media, and others. Empirical, ethical, and practical challenges will need to be thoroughly addressed, and this is not easy to do given the speed of changes in media, hardware, and AI. I am not dismissing or glossing over obstacles but starting with a point of departure that I see as the most critical, namely, currently the main intervention for individuals with mental disorders, including depression and suicidality worldwide, is "no treatment." Providing something is not always better doing nothing but the models I have reviewed for the most part have data in their behalf that they can be scaled, reach special groups in need, and produce favorable health outcomes.

Closing Comments

I believe our research and clinical application, but perhaps as well, laws, social policy, and agencies related to health care service delivery ought to be guided by three questions:

1. Are we closing the treatment gap? That is, are proportionately more people in need of mental health services receiving them?
2. Are we reaching subpopulations within the countries that are the least likely to receive care? These are the groups that are among the most neglected.
3. When interventions are scaled up to reach more people and special populations, do we achieve treatment outcomes that have impact on their functioning.

These are empirical questions and efforts to improve service delivery require collection of pertinent information to ensure that in fact we are making progress. I emphasize the importance of data collection because it is common to assume well-intention programs are beneficial. Evaluation is not a luxury. We already know that well-conceived and well-intentioned intervention programs can harm (make patients worse) or have little or no impact (e.g., Crawford et al., 2016; Dodge et al., 2006; McCord, 2003; Petrosino, Turpin-Petrosino, & Finckenauer, 2000; Rozental et al., 2017). Making people worse usually means that in a randomized trial, being in a no-treatment control group has a better outcome than being in the intervention group. This is why I note that evaluation is

essential. Programs that are ineffective continue patient suffering while utilizing resources (money, personnel) that could be better used in programs that might be more promising. One cannot guess what the answers will be to the three questions I pose; they require data.

Currently, there is a rich empirical literature on evidence-based treatments. Highly controlled outcome studies are conducted to evaluate nuances of treatment, for whom treatment is effective, whether outcomes can be improved, and so on. I do not challenge these foci. However, the three questions I have noted generally are neglected. That is why we now have a set of evidence-based treatment that reach the tiniest fraction of people in need of psychological services. The priority ought to shift to evaluating how well we are reaching people in need and reducing he burdens of mental illness in all its gradations and forms.

The impediments to providing and receiving care do not hinge or completely fall to the model of delivering treatment. There are of course many reasons why most individuals in need of psychological services receive no treatment. To begin, receiving services for psychological dysfunction encompasses multiple steps that include experiencing symptoms or some form of dysfunction, identifying those as symptoms or something in need of help, deciding whether action is needed to do something about the symptoms, identifying the options for intervention (e.g., a psychosocial "treatment" or something else), seeking and actually obtaining treatment if that is the option selected, beginning the treatment, and remaining in treatment as needed, and with recurrent disorders traversing the process or abbreviated variants again. These seem like a natural flow of steps and once one started the rest of the steps would unfold. Yet, there are multiple obstacles at each of steps that can impede or prevent the individual from moving forward and receiving care (Jorm, 2012). For example, many people (approximately one third of individuals in a survey of six countries) believe professional mental health care is worse than or equal to no help at all for mental disorders. Even when the process does unfold, there are remarkable delays. From identifying the problem through help seeking, usually many years (~ 8 years) elapse (Thompson, Issakidis, & Hunt, 2008; Wang, Berglund et al., 2005).

Second, there are many well-known barriers to receiving services to which I alluded earlier. These include the sheer paucity of available services, cost of services, and stigma associated with seeking mental health care. Interestingly, many of the novel models of delivery I have illustrated or listed (Table 2) can surmount or side-step some of the barriers. For example, self-help and technology-based treatments (via the internet or "apps) can be done privately and are much less

likely to evoke the stigma of going to treatment at a clinic setting. Similarly, best-buy interventions, when they pertain to social policy, also are largely out of the mental-health-care system and seeking or going for services do not present the usual obstacles. Finally, Entertainment Education consists of television or radio programs and of course that changes all facets of seeking and receiving mental health care and dodges many of the traditional barriers to mental health services.

If we acknowledge for a moment that novel models are needed, where can we begin. Best buy interventions provide criteria worth considering: affordability, feasibility, and reach for example and these might vary on a country-by-country basis. Another option that I favor is to foster the use of interventions readily available that can be scaled and that can have broad impact. For example, life style issues (Table 2) includes exercise as well as walks in nature, both with evidence on their behalf as beneficial to mental and physical health. Consider exercise. This is of interest because there are multiple mental and physical health benefits, because the form that exercise takes can vary to suit individual tastes, and that the intervention can be applied to multiple age groups. As I noted, no one model can be expected to reach all people in need. And, I am not suggesting that exercise is the solution to mental illness. I am suggesting that an intervention such as exercise (but others perhaps like social networking, Entertainment Education) can reach many people, probably could be used to improve health generally, and might reduce the base rate of many sources of psychological dysfunction. Although no one model is the solution, adding models to the dominant model of care is sorely needed.

Multiple models are needed to optimize reach individuals in need of services. Different models surmount and present a different profile of barriers and together reach a larger proportion of individuals in need than the current dominant model or any single model. We have developed many evidence-based interventions. These represent a necessary condition for effective mental health care, but hardly a sufficient condition. More needs to be done to extend these treatments and other forms of intervention to the millions of people in a given country and worldwide who receive no mental health care at all.

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