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Development of Community Care for People with Schizophrenia in Chile

ABSTRACT: Chile has greatly reformed its approach to psychiatric care in the last two decades, having transitioned from a model centered around a psychiatric hospital to one in which mental health care is based in the community. During this period, patients were moved from large psychiatric hospitals into ambulatory clinics, and the number of people who were in hospitals for extended periods decreased. At the same time, mental health service networks—consisting of ambulatory clinics, day hospitals, rehabilitation centers, and community group homes—were created, each responsible for a specific population. The reform process, however, has occurred in different, unequal degrees throughout the country. The purpose of this investigation is to compare the characteristics, resources, and results of the mental health service networks that have successfully transitioned to and developed in the community with respect to those that are still centered in a hospital. The structural aspects were evaluated with the EvaRedCom–TMS (Evaluación de Redes de Servicios Comunitarios para Trastornos Mentales Severos), and the level of functioning...
was measured with World Health Organization’s International Classification of Mental Health Care. Area networks with higher levels of community-based services show better indicators of geographic and financial accessibility, use less human resources (particularly psychiatrists and nursing assistants), have an equal level of specialization, and yet show better treatment adherence among the patients (84.2 percent versus 41.8 percent), despite the fact that the patients have worse socioeconomic and clinical indicators than area networks with lower levels of community-based services. In conclusion, the community-based psychiatric care model is more effective than the hospital-centered model.

**Brief History of Psychiatric Care in Chile**

Until 1852, Chile did not offer specialized medical attention for people suffering from mental illnesses. In that year, the Casa de Orates de Nuestra Señora de Los Angeles (The Insane Asylum of Our Lady of Angels) was founded through an initiative of the mayor of Santiago, who had been strongly motivated to begin reform after visiting the Mental Hospital of San Andrés de Lima. After a few years, the hospital was renamed the National Insane Asylum, and in 1952, it was renamed Psychiatric Hospital, being the first of its kind in Chile [1]. In the first half of the twentieth century, other psychiatric establishments were constructed outside of the capital, though they were generally smaller and did not last as long. Such was the case with the Andrés Bello Hospice in the city of Concepción and the Mental Ward of the San Andrés Hospital in the city of Iquique.

In 1927, the General Mental Health Law was enacted, declaring the necessity of building “Open Door” establishments in the capital city of each province of the country. However, only one such center was built—a hospital located in the outskirts of Santiago, which today is El Peral Psychiatric Hospital [2]. In 1952, the National Health System was created in Chile, in an imitation of the British National Health Service. The new system integrated all the different health care services that existed at the time, and during the following decade, the system installed an extensive treatment network, reaching from the highly specialized hospitals to primary care centers, in every part of the country. More than 90 percent of Chileans were receiving medical care under this system. However, mental health treatment remained separate, with care concentrated in a small number of psychiatric hospitals.

In the 1960s, the field of community mental health care went through three pioneering developments. The first was headed by Dr. Luis Weinstein with expanded care being offered to populations in the central and western sectors of Santiago [3], and in the second, Dr. Juan Marconi implemented enhanced care in the southern zone of the capital [4–6]. Both initiatives were based on an alliance between the University of Chile and the National Health Service. The third initiative was directed by Dr. Martin Cordero in the city of Temuco. The three programs were abandoned with the beginning of the military dictatorship in 1973. The initiative headed by Dr. Marconi was the most integrated into the academic world and health services,
and so its influence lasted until the return of democracy in 1990 [2]. Thus, until
the end of the 1980s, the predominant model for mental health care continued to
be centered around psychiatric hospitals.

At the start of the 1990s, there was a return to democratic life, and an environ-
ment of optimism prevailed in every social sector, including that of health care.
The topic of health reform became popular, and its contents were discussed over a
period of 13 years. In 2003, the health care bill was officially presented, and work
began on the specifics of the regulations and the administrative tools that would
be needed for its launch, which took place 2 years later.

Mental health care reform was intensely discussed for years, but the community-
based model progressed decisively. In the first part of the 1990s, various debates
around the topic took place, the most important one being at the end of 1991 [7] and
resulted in the Santiago Agreement, a statement that laid the groundwork for reform
in psychiatric care. The next crucial step was the formulation of the National Mental
Health Plan in 1993, which defined the model and the route the policy was going to
follow [8]. In the following years, the most important strategies were [9, 10]:

- development of the regulatory function of the Mental Health Unit of the
  Ministry of Health, with a special high-quality, accreditation program to
  ensure certain standards of care;
- progressive increase in public investment in this field, which has resulted in
  increases in physical infrastructure and human resources, and the opening of
  specific programs;
- development of mental health and psychiatric service networks, based on a
  sectorized, community-based model, combining various elements to provide
  comprehensive care for people in need and to ensure continuity of care for
  patients with low to high levels of complexity;
- promotion of interdisciplinary work, with particular attention to education,
  justice, labor, and community development;
- development of programs that support the prioritization and implementation
  of resources toward mental disorders with the highest prevalence and
  social impact, which include severe mental disorders, with an emphasis on
  schizophrenia;
- development of mental health teams in every public health district
  administration of the country that receive guidance from the Ministry of
  Health to locally manage the programs and resources; and
- formation of groups of patients and family members, with the intention of
  progressively integrating them in the planning and evaluation of programs
  and interventions.

The new version of the National Mental Health Plan [11] was released in 2000;
it continued the objectives and strategies of the previous version, with a special
emphasis on the development of a network of psychiatric and mental health ser-
vises based in the community. The mental health network was thought to be a part
of the general health system and to have close links with its centers and resources in order to ensure the comprehensive integration of physical and mental health services [11].

The network of mental health services is responsible for a specific population in a defined geographic area. In this way, people can receive care in any of the treatment centers within the network according to their clinical and psychosocial needs; coordination between the sites is of the utmost importance to guarantee the continuity of care of the patients [11]. Additionally, the centers within the network of care must continue to work closely with the other institutions and organizations of the community (e.g., municipalities, schools, neighborhood organizations, and sports clubs) to support and strengthen the social integration of people suffering from mental illness. At the same time, these ties to the community facilitate easy access to social services and benefits, and health centers can work with the outside groups to fight against stigma within the community [11].

The first component of this network is the primary care centers, which are found throughout every region of the country (in both urban and rural zones), and have teams of professionals and health technicians that serve between 10,000 and 20,000 people. The mission of the primary care centers is to comprehensively solve the health problems of the population, including common mental disorders. The current focus is on family and community health and spearheading health promotion activities. To achieve greater coverage and effectiveness in addressing the most common health problems, primary care centers have continued with the strategy of creating treatment programs based on clinical practice guidelines, and this has also been done with cases involving depression [12, 13].

The second component of the network is the mental health teams for ambulatory care, which are located within the community or in general hospitals. They have professionals and technical specialists (e.g., psychiatrists, psychologists, social workers, and occupational therapists) and receive referrals from primary care centers for people with severe mental disorders or for those cases where the primary care centers are unable to resolve the problem (because of, e.g., treatment resistance or the need for more specialized psychological attention). The mental health teams are responsible for a patient population that corresponds to several primary care centers. Some clinics have day hospitals and rehabilitation units [11]. It is this component of the network that treats the majority of people with schizophrenia and other severe mental disorders, and the specialized ambulatory centers coordinate the referrals with other general and mental health services as well as social and community services. Additionally, these centers work with patient and family groups to encourage active participation in organizing the services and developing innovative projects, such as the creation of a few small businesses where patients can obtain competitive employment.

The third component of the network is the short- and medium-duration inpatient hospitalization units. All of the newer, short-stay treatment centers are located within general hospitals, and only a few medium-duration services are located in
psychiatric hospitals [11]. Also, a network of community group homes have recently been developed where patients previously considered to be chronic, by psychiatric hospitals, live along with those who have lost their families or do not have a social network of support [11]. Additionally, day centers for psychosocial rehabilitation, social integration clubs, and self-help groups have been created, all of which seek to support the patients’ rehabilitation and social integration [11]. The following data reflect the advances of the plan during the period from 1990 to 2003 [10]:

• The process of deinstitutionalizing patients with severe mental disorders is seen in the reduction of the number of long-stay beds, from 2,516 in 1990 to 1,029 in 2003 (a decline of 59.0 percent). At the same time, group homes have been created; although there were no such facilities in 1990, by 2003, there were eighty-three homes, serving 738 people. The same growth has occurred with rehabilitation activities, which were barely in existence in 1990, but by 2003, they treated 1,535 people.

• The process of creating alternatives to hospitalization is reflected in the increase in centers and resources. The number of psychiatrists that work at least half-time in the public system increased from 224 to 498 in the period 1990 to 2003 (a growth of 122 percent). Day hospitals were also created—in 2003, thirty-six such centers existed, treating 640 people. Ambulatory clinics expanded from twenty-two to sixty-two sites. Mental health and psychiatric community teams were formed beginning in 1998; as of 2003, there were forty-two teams. Similarly, the number of short-stay beds in psychiatric hospitals decreased from 604 in 1990 to 378 in 2003. In the same period, the number of short-stay beds in general hospitals increased from 239 to 329.

• The political decision to give priority to the mental health field is reflected in the increase in percentage of the health budget that was allocated to this area, which grew from 1 percent in 1990 to 2.4 percent in 2003.

As Minoletti [9] stated, although progress has been significant, we need to continue increasing resources, strengthening the treatment model, and tackling new challenges by, for example, incorporating evidence-based practices, making psychiatry and mental health the fifth basic discipline of medicine, and giving a greater role to service users. In this context, we undertook the challenge of making an assessment of mental health services, beginning a decade after the reform process began. We compared the characteristics between those centers that had made the most progress in promoting the community-based model to those centers that maintained the model focused around a psychiatric hospital.

**Methods**

Eight geographic areas in Chile were selected, each of which had various mental health facilities. The areas were selected because they represented different stages of development of the community-based model, from centers that had little devel-
opment to those that achieved greater progress in this policy. Table 1 shows the facilities in each of the health areas.

The first instrument used was the EvaRedCom–TMS (Evaluación de Redes de Servicios Comunitarios para Trastornos Mentales Severos [Assessment to Network of Community Services for Severe Mental Disorders]), which was built specifically for Chile in order to describe and characterize the operation of the networks of care for people with schizophrenia [14] based on the community model of care proposed in the National Plan of Mental Health and Psychiatry [11]. Construction and validation of the EvaRedCom was done in a three-step process. In the first step, a conceptual definition of the different scopes an instrument of this type should have was established; to do this, we did a literature review on the subject and analyzed other instruments that were used at the time. The second step consisted of submitting the instrument to the review of experts in the fields of psychiatry and health service management. The third step was a pilot implementation of the instrument in three mental health care networks [14].

The scope of the instrument is intended to describe and evaluate health care networks providing the following information is obtained [14]:

- collect general information about the population that is served by the network, for example, the number of people, a measure of ruralness, and poverty rates;
- identify each of the components, or centers, of the network as well as the care functions that each one plays within the network;
- identify the care capacity of each center for different functions, for example, number of beds and users;
- identify social organizations that collaborate or work in coordination with the network, for example, groups of service users and their families, and employment initiatives;
- obtain rates for the various types of human resources that are in each of the centers within the network, for example, psychiatrist hours for a population of 10,000;
- know the geographic accessibility of the network as measured by the time that it takes a person to reach a specific center from his/her house; and
- know the financial accessibility of the network as measured by the transportation expenditure that a person must pay to arrive at a specific center.

This instrument measures the degree of development of the community-based models for each network. For this, three indicators were used: 1) percentage of the population with at least one community-based psychiatric team within their municipality, 2) percentage of the population with at least one psychosocial rehabilitation center within their municipality, and 3) percentage of the population whose geographic accessibility to a day hospital is less than 1 hour.

We proceeded with a hierarchical clustering analysis to classify the eight catchment area networks into two groups. We used the three indicators described above
in addition to data about the geographic and financial accessibility. This yielded a good statistical solution with two clusters that have a high degree of closeness within its components and a wide gap between the two clusters. Additionally, half of the networks were located in each cluster (four “catchment areas” in each group).

To determine the level of specialization of the centers, we used the International Classification of Mental Health Care (ICMHC) of the World Health Organization (Spanish version) [15, 16]. The instrument is used to assess different types of psychiatric and psychosocial care and the level of expertise they possess. The Spanish version of the ICMHC was created by the Mental Health Research Group of the University of Granada [16]. The assessment focuses on ten different aspects. For each of them, a score from 0 to 3 is assigned, and the final score is the sum of the ten aspects, yielding a theoretical value between 0 and 30.

Results

Table 2 compares the structural characteristics of the two types of mental health service networks. It is observed that the size of the population served by the networks that are not community based is a little larger (1,492,464) than the population served by the networks that follow the community-based model (1,144,070). It is also noted that the percentage of the population that lives in urban zones is larger in the latter group as is the percentage of the population that lives in poverty. With respect to the availability of human resources, it was found that the networks that are the most community based have a lower number of total hours of psychiatrists, a lower number of total hours of nursing assistants, and a lower number of total hours.
of all staff persons. Specifically, in comparison to the other type of networks, the high community-based networks only have 61 percent of the medical hours, only 37 percent of the nursing assistant hours, and do not differ significantly from the number of hours of the other professionals. Overall, high community-based networks only have 60 percent of the available human resource hours compared with low community-based networks. Similarly, the networks that are the most community based have better geographic accessibility (23.4 vs. 35.2 minutes in commute) and better financial accessibility (average transportation cost of 300.9 CLP vs. 784.6 CLP) compared with networks that are less based in the community.

Table 3 shows the average scores for the different types of care according to ICMHC. In general, one can see that there are no big differences between the two types of networks; the average scores obtained in the different types of care are very similar between each type of network (the only mode of care in which the more community-based network stands out above the others is in “general health care,” which in the case of Chile corresponds to the ability of mental health services to coordinate treatment with other health centers when patients present with a general health problem): the total score was very similar in both types of networks. All of these findings indicate that the level of specialization is similar for both types of networks. To summarize, it can be said that the more community-based networks: 1) treat a predominantly urban population, with the majority of people living in

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Types of network</th>
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<tbody>
<tr>
<td></td>
<td>High community care</td>
</tr>
<tr>
<td><strong>Data of population</strong></td>
<td></td>
</tr>
<tr>
<td>Size (people)</td>
<td>1,144,070</td>
</tr>
<tr>
<td>% urban population</td>
<td>98.4</td>
</tr>
<tr>
<td>% impoverished people</td>
<td>18.1</td>
</tr>
<tr>
<td><strong>Human resources</strong></td>
<td></td>
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<tr>
<td>(hours per 10,000 people)</td>
<td></td>
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<tr>
<td>Psychiatrists</td>
<td>0.64</td>
</tr>
<tr>
<td>Other professionals</td>
<td>2.34</td>
</tr>
<tr>
<td>Nursing assistants</td>
<td>1.49</td>
</tr>
<tr>
<td>Total</td>
<td>4.47</td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td></td>
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<tr>
<td>Geographical (minutes)</td>
<td>23.4</td>
</tr>
<tr>
<td>Financial (Chilean Pesos)</td>
<td>300.9</td>
</tr>
</tbody>
</table>
Table 3

Level of Specialization According to ICMHC for Type of Mental Health Network

<table>
<thead>
<tr>
<th>Variable</th>
<th>Types of network</th>
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<tbody>
<tr>
<td></td>
<td>High community care</td>
<td>Low community care</td>
<td></td>
</tr>
<tr>
<td>Ability to establish and maintain professional relationships</td>
<td>2.1</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>The problem and functional assessment</td>
<td>2.0</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Coordination of care</td>
<td>2.2</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>General health care</td>
<td>2.0</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Worry about daily living activities</td>
<td>1.5</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Pharmacological and somatic interventions</td>
<td>2.8</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Psychological interventions</td>
<td>1.8</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Reeducation of basic interpersonal and social competences</td>
<td>1.6</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Daily living activities</td>
<td>1.8</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Family and caregivers interventions</td>
<td>1.3</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>19.1</td>
<td>18.7</td>
<td></td>
</tr>
</tbody>
</table>

Note: ICMHC = International Classification of Mental Health Care of the World Health Organization (Spanish version) [15, 16].

poverty; 2) have better geographic and economic accessibility; 3) have fewer human resources, especially in regard to psychiatrists and nursing assistants; and 4) provide services and care with a similar level of expertise.

Table 4 shows indicators of treated incidence and the percentage of patients who remained in treatment 2 years after their initial visit. It is observed that the treated incidence was similar in both types of networks (slightly superior in networks that are more community based), but the percentage of cases that remained in control after 2 years was double in the more community-based networks.

Table 5 presents a comparison of the characteristics of the patients who are treated at each type of network (ninety are treated at the more community-based networks and fifty-one are treated in the less community-based, i.e., hospital-centered, networks) in relation to variables that have been significantly associated with the number of unmet needs [17] and poorer quality of life [18]. It can be seen that patients in both types of networks tend to differ in most of the characteristics that were studied. The more community-based networks treated some patients from ethnic minority groups (5.6 percent of their patients) in contrast with the less community-based networks, where no minorities were found. Additionally, the patients of the more community-based networks had fewer years of education
S P R I N G  2 0 1 2  5 7

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Treated incidence (per 10,000 people)</th>
<th>% patients with 2-year treatment compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High community care</td>
<td>Low community care</td>
</tr>
<tr>
<td></td>
<td>0.55</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>84.2</td>
<td>41.8</td>
</tr>
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</table>

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of network</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of patients from native communities</td>
<td>High community care</td>
</tr>
<tr>
<td>Number of people that live with the patient in his/her house</td>
<td>5.6</td>
</tr>
<tr>
<td>Years of education at the time of diagnosis of schizophrenia</td>
<td>4.7 ± 1.9</td>
</tr>
<tr>
<td>Age of patients at the time of diagnosis of schizophrenia</td>
<td>9.5 ± 2.7</td>
</tr>
<tr>
<td>GAF score at the time of diagnosis of schizophrenia</td>
<td>22.2 ± 6.1</td>
</tr>
<tr>
<td>Change of GAF score between diagnosis and interview</td>
<td>33.7 ± 8.2</td>
</tr>
<tr>
<td>Rate of acute episodes per year</td>
<td>31.1 ± 14.4</td>
</tr>
<tr>
<td>Score of PANSS at first interview</td>
<td>0.7 ± 0.5</td>
</tr>
<tr>
<td></td>
<td>47.5 ± 16.9</td>
</tr>
</tbody>
</table>

Notes: GAF = global assessment of functioning; PANSS = positive and negative syndrome scale.

at the time of their diagnosis (9.5 years vs. 10.8 years). At the time of diagnosis, the patients that are being treated by the more community-based networks were younger (22.2 years vs. 26.4 years) and showed a lower level of general functioning measured according to the GAF (global assessment of functioning) scale (33.7 points vs. 42.2 points). During the course of their illness, the patients treated in the more community-based networks had higher rates of relapses per year (0.7 vs. 0.5).
Finally, at the time of the interview, the patients seen by the more community-based networks showed a higher score on the PANSS (positive and negative syndrome scale) (47.5 points vs. 41.4 points).

Conclusions

This work is one of just a few papers that have tried to perform a comprehensive assessment of mental health service networks, particularly in a developing country where such studies and evaluations are basically nonexistent. Moreover, the work does not only give a description of the degree of public policy progress but also contributes to the discussion about the effectiveness of the community-based care model. One of the most innovative aspects of this work was the use of an instrument designed specifically to evaluate these networks of mental health services in Chile [14]. Part of this work was to identify the major components that should guide policy to reform mental health services: accessibility, comprehensiveness, coordination and continuity of care, effectiveness, and respect for the rights of the patients [11, 19–21]. During this process, we identified an instrument aimed at assessing mental health networks (European Service Mapping Schedule, ESMS) [22, 23], which allows for a good classification and description of the type of services that constitute a health care network. However, ESMS cannot assess all five principles mentioned above and only partially fitted the model of mental health services that are being developed in Chile (and in Latin America) [14].

On the other hand, Chile is developing a process that is still incomplete and where the most recently developed services (i.e., those most based in the community) are in an expansionary phase under conditions of insufficient resources. We should not forget that this study provides a vision of what is happening at a specific moment in the social process involved in reforming psychiatric care (the decade beginning with 2000). To properly judge the effectiveness of the care models, it is necessary to maintain a historical perspective in the analysis, as should be done in the assessment of any public policy.

Our results show that the more community-based treatment networks had better indicators of geographic and economic accessibility and at the same time had fewer human resources (especially hours of psychiatrists and nursing assistants) while providing the same level of expert care as the less community-based networks. These facts are very important because, in the case of Chile, we can conclude that the community services are more efficient than the less community-based networks; they provide equal quality treatment with fewer resources. In addition, the more community-based networks have a higher rate of adherence in comparison to the less community-based networks even though both have the same level of treatment incidence. This indicates that the community-based treatment networks are more effective. This conclusion is confirmed by the data that compares the characteristics of the patients undergoing treatment in each type of network. Those treated in more community-based networks show poorer social
conditions and worse clinical indicators, which should lead to the loss of an even larger number of treatment cases. However, the results show the opposite: the more community-based services are better at achieving patients’ adherence, reaffirming their greater effectiveness.

It is important to consider that the discussion that takes place in academic and research settings is often far removed from the reality experienced by mental health workers and their communities, especially in low- and middle-income countries. For example, we can note that 70.6 percent of European countries have mental health policies and service coverage of 89.1 percent of their population; in contrast, in Africa only half of the countries have mental health policies and service coverage is only for 23.6 percent of their population [24]. The development of any policy in this field should start with a good diagnosis of these different realities, as has been done in this article for the case of Chile and as recommended by multilateral agencies to their member countries [25].

Low- and middle-income countries often have fewer mental health policies, and if they exist, there is a gap between what should be done and what is actually done [24, 26, 27]. They also have less infrastructure and fewer human resources (quantity and level of expertise), and a very poor distribution of those that they have, which generates significant problems in the accessibility and quality of mental health services, resulting in their decreased effectiveness and inequality in their results [28, 29]. Even the strategy of task shifting may fail for lack of resources as they could lead to overburdening the health teams working in the primary care level [30–32]. For all these reasons, we believe that the development of any mental health policy must begin with a good analysis of the health system, its resources and capabilities, as well as the political, cultural, and economic environment in which to develop it [33, 34]. Our work makes a contribution by looking at the means to perform this diagnosis (in our case, by way of using an appropriate instrument, i.e., EvaRedCom–TMS, that meets the reality faced by low- and middle-income countries) and by understanding the specific reality of Chile where a mental health policy is being developed.

References


