Mental Health in Cuba and the United States. Shared Learning

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ABSTRACT: Although much is known in the United States about Cuba’s provision of medical care, little is known about Cuba’s mental healthcare system. The purpose of this paper is to share mental health conceptualizations between researchers in the United States and Cuba regarding the conceptualization and delivery of mental healthcare services in our respective countries. Mental and medical healthcare are integrated in Cuba. Early diagnosis and intervention is standard as each patient is known by their community doctor/nurse team from infancy and through yearly visits. Mental healthcare is eclectic, free of charge, and readily available. Mental and medical healthcare should be integrated in the United States to facilitate early detection and better outcomes. The United States can look to Cuba as an example of free and integrated care for its citizens, as it contemplates a variety of approaches to healthcare.

KEYWORDS: mental health, Cuba, integrated healthcare.

RESUMEN: Aunque la provisión médica de Cuba se conoce en los Estados Unidos, se sabe poco sobre la salud mental en Cuba. El propósito de este documento es compartir el conocimiento y las conceptualizaciones de importantes preocupaciones de salud mental entre nuestros dos países. La atención médica mental y médica está integrada en Cuba. El diagnóstico y la intervención tempranos son estándar, ya que cada equipo es conocido por su equipo médico / enfermero de la comunidad desde la infancia hasta las visitas anuales. La atención médica mental es eclectica, gratuita y fácilmente disponible. La atención médica mental y médica debe integrarse en los Estados Unidos para facilitar la detección temprana y mejores resultados. Estados Unidos puede mirar a Cuba como un ejemplo de atención gratuita e integrada para sus ciudadanos, ya que contempla una variedad de enfoques para la atención médica.

PALABRAS CLAVE: salud mental, Cuba, salud integral.
The purpose of this paper is to share mental health conceptualizations between researchers at The University of Havana and Rutgers University, the State University of New Jersey regarding the delivery of mental healthcare services in our respective countries. Much is known in the United States about Cuba’s exemplary medical healthcare delivery to its citizens. However, much less is known about Cuba’s delivery of mental healthcare. As the United States is in the nascent stages of developing a model of integrated care with the understanding that mental and physical health cannot be separated; we sought to better understand the integrated and holistic manner of mental healthcare provision that has already been offered in Cuba for many years. The authors of this article spent much time in discussion of their countries respective mental health provision. They will discuss topics at the forefront of mental health concerns such as recovery from mental illness, early intervention for first-episode psychosis, the role of the family and community, what is unique to Cuba, homelessness and the mentally ill, and the effects of the embargo on Cuba’s mental health delivery.

In March of 2017 and November of 2018, Rutgers University faculty, students and administration traveled to Cuba to attend joint academic conferences, to experience the country first hand, and to meet researchers from the University of Havana with whom to potentially conduct joint research. Rutgers University–Camden’s School of Nursing sent several faculty members along with the Dean who presented The School of Nursing’s goals for collaboration with The University of Havana faculty and administration (Linz & Lorenzo Ruiz, 2020). They also met with the administration of The San Geronimo College to develop a Memorandum of Agreement for future collaboration. It was of great interest as a nursing school to discover a healthcare delivery system that served a collective population, free of charge, and with the understanding that healthcare was a constitutionally protected right. This debate as to the conceptualization of healthcare as a right or a privilege is currently receiving focused attention in the United States, with many individuals who cannot afford or who do not have employment healthcare benefits, either under or uninsured and without access. The conferences were organized by Dr. Gloria Bonilla-Santiago, a Board of Governors Distinguished Service Professor, Graduate Department of Public Policy and Administration at Rutgers University who had spent many years traveling to Cuba and forging strong relationships with The University of Havana academics, scholars, and other Cuban notables.

Through contacts made at the initial conference at The University of Havana, an introduction was made to Dr. Alexis Lorenzo-Ruiz, Psychologist, Full Professor, Head of the Discipline of Clinical and Health Psychology at The University of Havana, and Faculty Psychology. He is also President of the Cuban Society of Psychology, and a recipient of The American Psychological Associations 2017 presidential citation. At the second Cuban based conference Universities as Anchors in Sustaining Community and Economic Development in Varadero, Cuba in November 2018. Dr Lorenzo-Ruiz presented the Cuban Experience in the Formation of Competent Professionals in the Clinical and Health Psychology Area’s. He was joined by Vivian Vera Vergara, Ph.D., Vice Dean of Research, Graduate, and International Relations, Department of Psychology, University of Havana, who presented research on family psychology. Research was also presented by Dr. Sheila Linz from Rutgers University School of Nursing on Using Digital Mediums to Decrease
Stigma and Discrimination in Healthcare Students Towards Stigmatized Populations. The panel was well attended and concluded with interest in introducing visual digital mediums to Cuba as an intervention for future research on stigma reduction. The following month Dr. Linz presented research on the use of auto-videography to explicate the experience of recovery in individuals with serious mental illness at the HOMINIS 2018 VIII Intercontinental Convention of Psychology conference in Havana organized by Dr. Alexis Lorenzo-Ruiz and keynoted by Martin Seligman on Positive Psychology. The conference was attended by an international audience of over one thousand mental health professionals and academics (Linz & Lorenzo Ruiz, 2020).

While in Cuba, Rutgers faculty were able to visit a large medical and nursing school and were provided with a tour and a question and answer period. We learned that there were both similarities and differences in the field of nursing. For instance, in the United States, in addition to licensed practical nurses and registered professional nurses, we also utilize advanced practice nurses (either masters or doctorally prepared) that have diagnostic, prescriptive, and admitting privileges, and can function more or less independently depending on the state in which they practice. Advanced practice nurses specialize in family, adult, pediatric, psychiatric, geriatric, and women’s health (American Association of Nurse Practitioners, 2019). Cuba has no comparable advanced nursing role. However, we learned that nurses can continue to both masters and doctoral level. Although there is no role as an independent nurse practitioner, we were told that the nursing students have the option to switch to the medical track and use many of their credits to ultimately become physicians, an opportunity not possible in the United States as the educational tracks are mutually exclusive (Linz & Lorenzo Ruiz, 2020).

In part because education in Cuba is of exceptional quality and free for all, the physician to citizen ratio in Cuba is the world’s highest, with eight physicians to every 1000 citizens. This is more than double the ratio of physicians to citizens in the United States (González Menendez, 2005; Campion & Morrissey, 2013; Hill, 2015) and enables Cuba to export physicians for humanitarian purposes to underserved developing nations (Nugent, 2018). On the other hand, although the United States is well equipped with physicians, and provides a highly developed standard of healthcare, a shortage of healthcare providers continues to persist in rural areas (Warshaw, 2017). Within their own country, Cuba has effectively concentrated on preventive healthcare (Hamblin, 2016). A team of medical providers with caseloads of roughly 1000 patients each provides care for community residents who go without cost to community clinics. In addition, the citizens are visited at home by medical providers (physicians and nurses) at least once a year, or if warranted, more often. While visiting the home, the medical provider has an opportunity to also determine if other family members require medical or psychiatric attention (Kleinberg, 2018).

Rutgers faculty and administration were fortunate to have been able to visit a community polyclinic functioning in a rural community. The polyclinic provided both mental and medical services in an integrated fashion. Medical offices sat alongside a room for group therapy. The clinic prescribed many of the psychopharmacology medications that we were familiar with. However, due to the embargo, we were told that they were limited in the newer medications that they could offer. We were informed that if an assigned patient was suspected of having psychiatric problems they would be visited in their homes by clinic staff.
Doctors and nurses have established relationships with their patients, and usually live in the same community with government-supported rent-free housing to foster longstanding relationships (Kleinberg, 2018). This type of deeply integrated and personal care rarely occurs in the United States. Mental healthcare and medical facilities are generally separate entities and there may be little collaboration between the two. However, the provision of integrated care is a current focus in the United States in an attempt to address the health disparities experienced by people with serious mental illness (SMI) such as schizophrenia and bipolar disorder. This population is known to have difficulty accessing health care and die some 10 to 30 years earlier than the general population (Laursen, Nordentoft, & Mortensen, 2014; Ostrow, Manderscheid, & Mojtabai, 2014; Walker, McGee, & Druss, 2015).

As a potential remedy, patient-centered medical homes or team based-collaborative care models, in which medical and mental healthcare are interconnected (National Institute of Mental Health, 2017) are being implemented. In Cuba, since the physicians and nurses are part of the community and visit patients in their homes (Kleinberg, 2018), if informed by a family member of a psychiatric problem, an intervention can occur early before the mental health problem becomes a crisis. In the United States, a person with SMI without insight, or who is delusional, may not want to visit a mental health care provider on their own volition. It is only after a crisis arises that they can receive attention from a crisis intervention team of mental health professionals or trained police officers who would visit the home and assess for danger to self or others (Kerle & Lurigio, 2016).

Recovery

In the United States, treatment of SMI is based on the model of recovery. According to the New Freedom Commission of 2003 (Hogan, 2003), mental illness was declared to be taken as seriously as medical illness, and people with SMI were to be given the supports needed to fully participate in community life while given the opportunities to work and learn. The type of recovery described does not necessarily mean the ability to resume a previous level of functioning. Psychiatric symptoms may continue with more or less severity and the person with SMI can learn to manage their illness without being defined by it. This has been described by Davidson and Roe (2007) as recovery in mental illness as opposed to recovery from mental illness. It is also that recovery entails the ability of the individual with mental illness to have choices on how to engage in one’s life, community, and occupation. Mental health practitioners must also assist their clients in discovering their hopes and dreams, and inspire them with the belief that recovery is truly possible. Recovery is a process with the social roles undertaken decided by the person with mental illness. Within the social role, it is the extent of personal, clinical, and functional recovery that determines full societal recovery (Arblaster, Mackenzie, Gill, Willis & Matthews, 2019). The role of the mental healthcare worker is to establish a strong, trusting, and supportive relationship with their client. The client-provider relationship is key in assisting the person with mental illness to establish other community-based relationships, and in facilitating the confidence needed by the client to reach their chosen goals (Linz & Sturm, 2016; Arblaster et al., 2019).

According to Dr. Lorenzo-Ruiz, in Cuba, the concept of «recovery» from mental illness is understood to be «a process of processes». Similar to the understanding of recovery in the
United States, many factors are involved such as biological, psychological, social, spiritual, and environmental. Multi-disciplinary teams work together to create treatment plans based on the understanding of the unique capabilities and potential of the individual with SMI in their process towards their recovery from mental illness. The specific evaluations used are protocols developed by the Cuban ministry of Public health since its inception 40-50 years ago that have grown to include not only specialists in psychiatry in the setting of a psychiatric hospital, but also the multi-disciplinary team in the community setting composed of psychiatrists, psychiatric nurses, child psychiatrists and psychologists (Gorry, 2013a). Essential is the understanding that mental illness no longer has a deeply negative definition once imposed. The paradigm has shifted to move past the fatalistic understanding of psychopathology to a broader understanding that even in the context of serious mental illness, there is now hope and an expectation of recovery to the best ability of the person afflicted (Linz & Lorenzo Ruiz, 2020).

Dr. Lorenzo-Ruiz added that in Cuba, mental healthcare is free of charge to every person regardless of age, sex, race or any other demographic. Therefore, the condition can be discerned early and easily within the primary healthcare setting. If the case is serious or complicated the person can be referred to secondary-level healthcare settings. While in treatment the person with mental illness retains their legal rights, and he or she is supported and encouraged to continue to engage with current activities of life (i.e. work, learning, and activities of daily living (ADLs) to the fullest extent of their abilities. In Cuba, it is considered a priority to create conditions so that the individual will recover with as few complications as possible. It is also of key importance that through nationwide education programs, the stigma associated with mental illness is minimized (Linz & Lorenzo Ruiz, 2020).

**Early Intervention for First Episode Psychosis**

In 2008, the National Institute of Mental Health (NIMH) in the United States desired to improve the long-term prognosis and trajectory of schizophrenia and called for proposals for a program titled Recovery After an Initial Schizophrenia Episode (RAISE). Through comprehensive early treatment, the interventions were to take place in the community by the use of multi-disciplinary teams with small caseloads and the ability to provide early assertive outreach (Mueser et al., 2015). On January 17, 2014, President Barack Obama signed the “Consolidated Appropriations Act, 2014” aimed to provide early interventions for young people with prodromal or more florid signs of serious mental illness such as bipolar disorder, major depression or schizophrenia to prevent the negative sequela of delayed treatment (NIMH, 2014). As an example, the Navigate Program was created consisting of 4-5 multidisciplinary team members working together to provide a range of services including medication prescription and management provided by either a psychiatrist or nurse practitioner. Individual resiliency, a psychotherapeutic approach was offered to assist the clients in developing their personal goals. Family education and support for work and education were also provided (Mueser et al., 2015). White, Luther, Bonfils, and Salyers (2015) reviewed 34 early intervention programs to determine the essential components shared among the early intervention teams and found that program inclusion criteria generally consisted of having psychotic symptoms for under one year. The majority of programs also provided substance abuse support and vocational assistance. Most of the clients enrolled requested services that would
promote functional recovery such as return to school and assistance in returning to or remaining in employment. Social recovery was a dominant theme with clients receiving assistance in developing friendships and forming romantic relationships (White et al., 2015). Most of the interventions used supported stress management and problem-solving, both essential for the prodromal or early phase person with schizophrenia (Chieh Cheng & Schepp, 2016).

In a discussion with Dr. Lorenzo-Ruiz regarding Cuba’s early intervention for young people with symptoms of severe or serious mental illness, he suggested that Cuba’s practices and policies were in line with those of European and international practice. Multi and transdisciplinary teams are used and provide evidence-based practices for this purpose. Protocols have been developed in coordination with educational and community-based organizations. The mass media and other new technologies have educated Cuban citizens on healthcare topics related to mental health issues. Public education has reduced the known risks and harms of early episode psychosis. Because the populace is educated and aware, and because healthcare is both free and immediate, young people at risk are seen by professionals when the need arises. In that way, there is no lag time between the first symptoms and intervention. Every young person experiencing early symptoms of serious mental illness receives quick and immediate care in their natural community and educational environments.

Dr. Lorenzo-Ruiz went on to conclude that due to the existence of a prepared mental healthcare system that protects the young person and provides a buffering element, the negative consequences of first episode psychosis are minimized. Cuban society is continuing to work towards greater cultural awareness of mental illness so that a prompt response and action is available to each young person in need, in whichever environment they may find themselves (Linz & Lorenzo Ruiz, 2020).

Dr. Lorenzo-Ruiz went on to explain how early diagnosis before any crisis is a natural consequence of the Cuban mental healthcare system. In Cuba, there are frequent systematic medical and psychological evaluations. This includes genetic testing and specialist evaluations from the time the person is born and ongoing. Multidisciplinary and transdisciplinary programs for comprehensive mother and baby healthcare support the development of healthy personalities, human development, and future well-being. Thus, symptoms of emotional dysregulation or psychotic symptoms are detected early by healthcare professionals or educational providers and are attended to prior to the point of irrevocable damage (Linz & Lorenzo Ruiz, 2020).

**Unique to Cuba**

The mental healthcare model in Cuba is based on the Mental Health Action Plan 2013-2020 as it was suggested by the World Health Organization (2013). The model is integrated and values both community and science. As an example, in Cuba, individuals with mental illness are treated holistically with both mental and physical needs attended to Clay (2015). When a person with mental illness receives mental health services, their vision and dental needs are also treated (Gorry, 2013b). Psychopharmacology is provided alongside community-based preventative treatment. Social rehabilitation includes active therapies that are a good cultural fit for the diverse Cuban population (Collinson & Turner, 2002). According to Dr. Lorenzo-Ruiz, the psychotherapy approaches that are offered in Cuba are more eclectic than in other countries. This approach aligns with the eclectic nature of its populace. It is important that methodologies offered represent...
local characteristics and aspects of cultural and national identity. Cuba is aware and proud of its multicultural richness that includes the indigenous populations who were the original inhabitants, and also the later European, Chinese, Japanese, and Arab cultures that added their effects and made Cuba the rich and heterogeneous country that it is today (Linz & Lorenzo Ruiz, 2020). As such, complementary and alternative medicines are also used and include massage, acupuncture, heat therapy, cupping, among others (Dresang, Brebrick, Murray, Shallue, & Sullivan-Vedder, 2005).

The mental healthcare services provided in Cuba serve the individual patient, and at the same time serve the broader community. In keeping with the revolutionary spirit that underpins the country’s guiding philosophy, the strengthening of ties and connection to others in the community is fostered (Kleinberg, 2018). Treatment provided is not over-individualized, rather its focus is on the present and in the successful solving of problems within the context of the community (Elkis-Abuhoff, 2018). Dr. Lorenzo-Ruiz added that the inclusion of the family and community are both key ingredients in providing the person with mental illness a good quality of life, and well-being (Linz & Lorenzo Ruiz, 2020). Community is so important to the well-being of the Cuban people that family therapy, a well-received and utilized modality, includes closely-knit community members that are not directly related (Kleinberg, 2018). According to Dr. Lorenzo-Ruiz, community support is available to all individuals with mental illness in Cuba. It is the neighborhood or «barrio» as it is called, that fits within the mental health paradigm when designing action care plans for people with mental illness, and it is the setting in which most mental health services are provided (Linz & Lorenzo Ruiz, 2020).

Dr. Lorenzo-Ruiz discussed mental health modalities that were unique to Cuba. He said that the Psychiatric Hospital of Havana has been a pioneer on the regional level since the mid-1960s for including psychologists as full participants on healthcare teams in the hospital setting. The hospital also began to focus on the use of the arts and its various manifestations to facilitate the rehabilitation of people with SMI. For instance, in 1974, Psycho ballet, a dance/movement therapeutic modality was developed and used with children who had behavioral disturbances. Its use as a therapeutic modality has expanded over the years to include people with SMI, and also to support healthy aging in the elderly population (Linz & Lorenzo Ruiz, 2020). Activity and the arts have been embraced by The Psychiatric Hospital of Havana. The hospital includes exercise gymnasiums, psycho-drama, and music therapy. Murals in the hospital are painted by patients and depict the emotional states associated with mental illness, images of the Cuban countryside, and murals depicting the heroes of the revolution (Hodelín, 2017). In the community, alternative and active interventions are also used. For example, exercise, yoga, walking, and Tai Chi have been used as interventions to reduce stress for the caregivers of family members with Alzheimer’s Disease (Rodríguez Pérez, Díaz Rodríguez, & Díaz Rodríguez, 2016) and massage workshops have been used in the communities as an intervention to alleviate stress for women and families (Medina, López, & González, 2019).

**Homelessness and the Mentally ill**

During my three visits to Cuba, I never saw a homeless person. This is remarkable because in the United States, and in every other developed western country I have visited, in major cities homeless individuals are seen sleeping on the streets, many of whom show symptoms of mental
illness. What makes Cuba different? Why aren’t mentally ill people homeless? According to Dr. Lorenzo-Ruiz, you first have to understand the role of the family in Cuban culture. The identity of the family is interconnected with both personal and national identities. From millennium through today, the role of the family as paramount has existed. Therefore, the family is a protective factor for people with mental illness. When a family member develops a mental illness, the family is involved in their treatment, may accompany them to procedures, and is involved in educational and community supports. The individual with mental illness does not become homeless because the vast majority continue to live with their families. In the unusual case that the family rejects the mentally ill person for whatever reason, because all mental and medical healthcare is free, the mentally ill person will be provided with medication and comprehensive personalized mental healthcare. A program exists to involve community organizations for early detection. The person will receive specialized care as soon as possible and taken to a healthcare facility to be evaluated and cared for by a multidisciplinary team. In summation, Dr. Lorenzo-Ruiz suggested that it was the family and its support that produced the most positive outcomes for people with mental illness. In general, people that are homeless and show signs of mental illness are taken to the nearest healthcare facility or to facilities that have professionals on staff and the ability to handle the appropriate comprehensive evaluation (Dr. Alexis Lorenzo-Ruiz, personal communication, October 7, 2019).

In the United States, family support also is a factor for positive outcomes and many mentally ill adults are cared for by family members. However, for several reasons family support may not exist, or the person seeks a life independent from their family. This is consistent with the concept of individualism that is prominent in our culture. For those reasons and others, Assertive Community Treatment teams (ACT) (Bond, & Drake, 2015), and a variety of residential supportive housing programs were developed to support individuals with SMI at risk for homelessness. ACT was developed after the period of deinstitutionalization in the United States when individuals who had been residing in state hospitals were released. Community services were intended to replace state hospitals as the providers of mental healthcare for people with SMI, (Drake, Green, Mueser, & Goldman, 2003). However, the supports were not forthcoming and individuals with SMI often became homeless (Melnick, 2016). In response, Stein and Test (1980) developed the ACT model for individuals with serious mental illness who could not function independently in the community and who were not likely to attend mental health clinics. ACT is a direct service model that integrates intensive, personalized services and may provide treatment, rehabilitation, and housing. Composed of a transdisciplinary team of various health professions, most teams include a psychiatrist and nurse. Caseloads are small and the service is provided 24 hours a day, 7 days a week. The majority of the services are provided through visits to the client in their residence (Bond & Drake, 2015), thus the individual with SMI at risk for homelessness is supported.

The United States government in 2010 selected Housing First as the favored supportive housing model to address chronic homelessness. Before this model, other housing models required that the people with mental illness or substance abuse maintain sobriety and attend a mental health clinic to receive and maintain their housing. These prerequisites were eliminated with Housing First. The clients also receive services in their homes through ACT or other outreach programs.
that offer psychiatric, rehabilitation, and medical supports (Kertesz, Baggett, O’Connell, Buck, & Kushel, 2016).

The Effects of the Embargo on Psychiatric Care in Cuba

When asked if the United States embargo affected psychiatric care in Cuba, Dr. Lorenzo-Ruiz responded that the embargo is palpably felt as it pertains to psychiatric care as well as in many other social and economic aspects of Cuban life. More specifically, the rapid delivery of new and important achievements in neuroscience, medicine, psychiatry, psychology, and other scientific domains is impeded. Newer treatment modalities take longer than necessary to be incorporated, thus effecting the well-being of its people. Access to scientific journals is hindered, as is attendance at scientific conferences, continuing education, and grant funding for research projects. Research and teaching efforts at times have faced what has appeared to be insurmountable obstacles. However, the Cuban people are resilient, have endured, and have been able to reach their goals, achieve their training objectives, and have given the best of themselves so that the Cuban people could thrive. It is also true that Cuba has many academic accomplishments, academic achievements, technological innovations, and research results that have been shared with institutions around the world. Therefore, the embargo also effects academics in the United States who remain isolated from recent Cuban accomplishments in knowledge and science (Dr. Alexis Lorenzo-Ruiz, personal communication, October 7, 2019).

Conclusion

Cuba and the United States have much to learn from one another. For the United States, learning about Cuba’s mental healthcare provision can influence how we design our own. We can observe and learn from their longstanding tradition of integrated healthcare available to all of its citizens without cost. Dr. Lorenzo-Ruiz suggested that we have many common goals, and that we are perhaps more similar than different as both human beings and as professionals. Both of our countries are striving to develop better and more efficient treatment modalities to care for our mentally ill (Linz & Lorenzo Ruiz, 2020). Dr. Lorenzo-Ruiz eloquently added that

From my many years of work, I know that every healthcare professional in the United States is aware of this. Human subjectivity is very complex. This is all the truer when we are faced with critical emerging dilemmas and even predictable problems. The only way forward is to learn together. This is because we are going to need the efforts of many people of good faith. At this time, the call is for us to provide encouragement to institutions and professionals in every country in the world, wherever knowledge and professional competence is capable of taking on challenges and working together to offer the necessary solutions. (Linz & Lorenzo Ruiz, 2020, p.7)

Although Cuba is a poor country that spends far less on healthcare than the United States, it achieves the same life expectancy and has successfully integrated its provision of mental and medical care treating the whole person. As our country contemplates a variety of approaches to healthcare, we are well-advised to look to Cuba as an example.
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References:
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burden implications: A systematic review and meta-analysis. *JAMA Psychiatry*, 72, 334-341.


**Conflict of Interest**

The authors declare that there is no conflict of interest.

**Author’s Contribution**

Sheila Linz: created, wrote, and participated in the conceptual design and editing process.

Alexis Lorenzo-Ruiz: participated in the conceptual design, manuscript preparation, writing and editing process.