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Urbanization and emerging mental health issues

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Review

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Abstract

Rapid urbanization worldwide is associated to an increase of population in the urban settings and this is leading to new emerging mental health issues. This narrative mini-review is based on a literature search conducted through PubMed and EMBASE. A total of 113 articles published on the issue of urban mental health have been selected, cited, reviewed, and summarized. There are emerging evidences about the association between urbanization and mental health issues. Urbanization affects mental health through *social*, *economic*, and *environmental* factors. It has been shown that common mental syndromes report higher prevalence in the cities. Social disparities, social insecurity, pollution, and the lack of contact with nature are some of recognized factors affecting urban mental health. Further reserach studies and specific guidelines should be encouraged to help policy makers and urban designers to improve mental health and mental health care facilities in the cities; additional strategies to prevent and reduce mental illness in the urban settings should be also adopted globally.

Setting the Scene

Globalization and rapid industrialization in the 21st century are leading to a population shift from rural areas to urban areas with the development of new urban settings and mega-cities worldwide.[1] International health policies need to take into account these new challenges and a broader view on mental health issues related to urbanization is needed.

Introduction

Globalization has led to a movement of people and capitals over the years.[1] Urbanization is a direct consequence of globalization as well as industrialization, social migration, economic, and political transitions.[2] The impact of globalization on mental health is poorly described but it has been suggested that urbanization plays a mediating role since any change in environment, social, and economic relations may influence the occurrence of mental health problems.[2] Marmot argued that social and economic environments may influence health and mental health. He pointed out that social stratification, economic, and political powers interact with an individuals' development. Urbanization and migration from a rural to an urban setting may include changes in social determinants of health such as education, employment, job opportunities, living conditions, access to healthy food, and health care system.[2] The percentage of world population living in urban settings has been increasing from 30% in 1950 to 54% in 2014 and will rise to 66% in 2050.[3] Population living in newer urban areas are exposed to risk factors for mental health at different levels: macro-social level, relational/support level, macro-environment level.[4]

Macro-social factors and mental health in cities have been studied in the beginning of 1990s by Faris and Dunham from Chicago, United States.[1,5] According to them, the structure of neighborhood has been associated with the relative risk of developing schizophrenia, even if that association was not considered as a causation. Also, poverty in a neighborhood, defined as the proportion of subjects living on social security or welfare, significantly explained variance in mental health prevalence.[6] Living in deprived areas seems to be heritable and the association with schizophrenia and neighborhood deprivation is mediated by genetic factors.[7] In addition, Toulopoulou et al[8] have shown that childhood changes of residence toward urbanization in the first decade of life is associated to a higher risk of developing schizophrenia since it has been suggested that pathological response to urbanization may be due to childhood sensitivity. This confirms that environmental factors such as a change in living conditions and neighborhood structure and economic status, all have an impact on the association between urbanization and mental health.[9] Data from the National Survey of

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Children's Health (NSCH, United States, 2011-2012)[10] have shown that a higher prevalence of mental and behavioral disorders was described among children in rural areas (18.6%) than in urban areas (15.2%). The rate of such disorders was associated to the lack of medical assistance, parents' poor mental health, financial difficulties, poor neighborhood.

Social support at personal and community levels may have a protective role in preventing mental illness.[2] In fact, in urban settings and megacities there may be some difficulties in maintaining effective social interactions because of the rhythm of city life, daily commitments, long distances and higher average of time spent travelling. Urbanicity is associated to an easier access to internet, social networks and to free Wi-Fi which is not in favor of direct interactions among people and neighbors: for example, patients with schizophrenia living in rural settings report higher frequency of social contact than those living in the cities.[11] The importance of online (internet *and* social networks) and "off-line" (*in flesh and bone*) networks in providing social support and their impact to the general population's health should be further studied and described.[2] Direct social interactions in the cities may be also reduced because of the perception of violence and insecurity. Many studies have shown that living in urban settings is associated with higher perception of insecurity and personal risk of violence in general populations as well as in people with schizophrenia.[12,13] Insecurity, violence, trauma, and disorganized neighborhood may all reduce social support/interaction and affect wellbeing and mental health.[14] Social interactions and support may be also reduced by social stigma and discrimination. It is of note that megacities are more "open-minded," whereas rural communities may be more unfriendly to outsiders and minorities with reported higher level of social discrimination and isolation. For this reason, minorities (such as immigrants, sexual variants, etc.) may report more discrimination and social exclusion in rural areas, which lead to a "minority stress," whereas they can be integrated or well-accepted in urban settings: this may have a different impact on levels of social stress experienced by minorities and their mental health and wellbeing.[1,2] However, discrimination, in general, may be largely observed in the cities as well.[2]

At macro-environmental level, Litman[15] noted that urban mental health is likely to be influenced by some factors such as a lack of green spaces, poor access to sea and rivers, air pollution, and noises. Green spaces and access to blue spaces (sea, rivers, and lakes) are significantly associated to better self-perceived mental health as well as pollution and noise are related to higher prevalence of mental disorders due to direct neurotoxicity or indirect psychological stress.[16–18]

This narrative mini-review aims to provide an up-to-date report on the emerging mental health issues in the urban settings and possible risk factors involved in the pathogenesis.

Methods

A literature search has been conducted employing the following set of keywords on PubMED and EMBASE: *urbanization, mental health, urban mental health, globalization, megacities, urban design, homelessness.* Relevant articles over the years of publication have been selected (n = 113) and considered for this narrative review with the aim to provide a comprehensive overview on the emerging mental health issues related to the processes of urbanization and globalization worldwide.

Mental health issues in the cities

Peen et al[19] have shown that there may be a difference in the prevalence of common mental disorders among rural and urban populations: their meta-analysis, including data from 20 adult-population surveys conducted in developed countries since 1985, reported higher rates of psychiatric conditions in urban areas (38% higher rate for depression, 21% higher rate for anxiety, etc.) than in rural ones.

In 2019, Chen et al[20] interviewed 347 patients with multiple chronic health problems and showed that rural subjects reported more symptoms of anxiety and depression, and had worse mental health self-report if compared to urban ones. These data showed disparities in mental health and wellbeing among Chinese patients living in rural and urban areas, mostly related to unemployment, lower education, more long-term health conditions, and poorer access to health care facilities.

A large national study in United States described the prevalence of depression among four different levels of urbanization: metropolitan areas, small urban areas, semi-rural, and rural areas. They found that there was no difference in the rate of association between level of urbanicity and prevalence of depression among adolescents as well as among adults from metropolitan and rural areas. Little difference was found between subjects from semi-rural areas and small cities both reporting higher rates of depression than others.[21]

Also in South America, the Brazilian Longitudinal Study of Adult Health (ELSA-Brazil) analyzed the prevalence of mental disorders from six big cities reporting a general rate of 26.8% in the urban population, which gets close to 30% as rated in the Brazilian community samples, and lower than 50% as rated in primary care samples in Brazil. Most common mental conditions were anxiety disorders (16.2%) and depressive episodes (4.2%).[22]

Moreover, higher rates of mental illness in urban settings were confirmed in a large study in India conducted by the National Mental Health Survey of India: it reported that prevalence of mood disorders and stress-related disorders in urban areas were two to three times higher than in the rural and semi-rural populations.[23] In fact, according to an Indian multicentric study on urban mental health, the prevalence of common mental disorders ranges 37% to 50% in urban areas.[24]

Data from large populations confirm that urban city life is a risk factor for mental disorders beyond genetic vulnerability.[25] Socio-environmental hypothesis of mental illness, proposed for schizophrenia, may be extended for all major disorders.[26,27] Environmental factors might include physical factors such as air pollution, noise pollution, housing problems, crowding, and density of population, as well as social factors like stress, segregation and marginalization, migration, discrimination, social interactions, crime, and so on. In fact, urban inhabitants cope with more pollution, violence, crimes, and crowding than rural population and these are all associated with higher risk of stress, anxiety, and depression.[28] All factors are acting as pathogenic agents generating stress which is consistently associated with urbanization and higher prevalence of psychopathology in the 21st century.[29] Stress is a reaction to some perceived threats as well as to some urban factors: time pressure, unhealthy lifestyles, convenient diet, pollution, vehicles traffic, violence and crime, job insecurity, little social support, difficulty in social connections, high distances to be covered, work-home imbalance, and so on.[30] Urban lifestyle chooses are also related to higher metabolic, cardiovascular, and cancer risks which lead to poorer mental health. In fact, comorbidities are higher in

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urban settings and common mental disorders are more likely to be associated with diabetes, stroke, hypertension, respiratory disorders, alcoholism and substances abuse, chronic infections (eg, HIV), and so on.[31,32]

The employment of public health resources in urban areas is high and excessive sometimes. Most of cities have good and well-accessible health facilities with a good rate of availability, affordability, and accommodation.[33] However, the integration between primary care and mental health services is still to be potentiated with specific training programs for detecting early psychiatric condition in primary care.[34] Also, the number of mental health facilities and professionals is higher in the cities than in the rural areas, and accessibility to innovative interventions and highly specialized mental health consultants/centers may improve the outcome of the illness.[35]

Urbanicity and the risk of psychosis

As already reported in the beginning of 1990s by Faris and Dunham,[27] risk of psychosis is higher in the city. They conducted a meticulous study of 35 000 hospital admissions in the city of Chicago, screening for those due to psychoses or other major mental illness. In the following decades, a consistent number of large studies confirmed the higher prevalence of psychosis in the urban settings in United Kingdom,[36-39] Germany,[40-42] and United States[43] as a stable trend up to 25 years. Also, Oh et al[44] have shown a link between urban residence and the risk of psychosis in North Europe even if not confirmed in Spain and Italy. In the United Kingdom, data from the Aetiology and Ethnicity in Schizophrenia and Other Psychoses (AESOP) study have demonstrated that the incidence of psychosis may vary in the areas of South East London, with higher rates in urban zones.[45] Rural-urban variation in the incidence of schizophrenia has been confirmed in many countries (also Spain, Netherlands, etc.) after adjusting for ethnicity, spatial variations, and economic status of studied populations.[46-50] Moreover, the prevalence of nonaffective psychoses, or other psychoses than schizophrenia, does not seem to show significant difference across urban or rural settings, even though it is recognized a shared genetic vulnerability with schizophrenia-like conditions.[51,52]

The higher prevalence of schizophrenia-spectrum disorders in urban settings may be explained by some hypotheses: social drift hypothesis, gene-environment interaction, exposure to environmental factors or detection bias in rural areas.[2] Social drift hypothesis is based on the evidence that individuals with schizophrenia deal with a progressive social and economical deterioration and can move to more deprived areas as well as families at risk for schizophrenia are more likely to move to urban areas.[27,53] In fact, drift hypothesis points out that one's social class is not necessary the cause of mental illness onset (as suggested by the *social causation thesis* of mental illness) but, rather, mentally ill people report a progressive deterioration in cognitive, personal, and social functioning leading to a shift toward low social classes and poorer social/life conditions.[27]

Relationship between mental illness and social class

Genetic vulnerability for schizophrenia seems to be the base of association between higher prevalence of illness and urbanicity. In fact, family liability for psychoses was higher in those developing schizophrenia in urban areas as described by several studies on polygenic risk scores.[49,54] As already stated, many socio-environmental factors may influence the rate of psychosis onset such as socioeconomic status and poverty, perinatal risk (obstetric complications, more common in urban areas), social stress, and pollution, both higher in urban settings.[2,27] Substance abuse is one of the most relevant environmental factor impacting on the rate of psychosis worldwide.[55] A large Italian study reported a survey conducted on 3011 subjects aged 16 to 24 years old living in urban, intermediate, and rural areas of Italy in order to explore the knowledge of novel psychoactive substances and their consumption. The knowledge in urban was higher for the novel psychoactive substances, in particular methamphetamine, *Salvia divinorum*, and desomorphine. A total of 47.9% of sample reported an alcohol consumption with higher rates in the urban areas.[56] Authors suggested that the higher knowledge among urban respondents may be due to more opportunities to attend bars, discos, or nightclubs as well as to a peer-to-peer information or internet use. In fact, among 1034 urban citizens interviewed, 42.3% of the subjects collected information about substances from friends whereas 41.9% on the Internet.[55]

The diffusion of substances through the internet in urban areas has been also largely described over the years.[56] The so-called "dot-com" generation, composed by urban young people accessing the internet on daily basis, can easily find information as well as buy illicit-drugs on the web with a large variety of offers and reduced limitations.[56] It is of interest that young adults often migrate from rural areas to urban ones for study and work and they may be exposed to stress with social difficulties leading to addictive behaviors. Conversely, the use of substance abuse in rural areas may be related to more isolation, unemployment, and poverty, including more difficulty to access to prevention or treatment programs.[55]

Finally, it is possible that the prevalence of psychosis in rural areas is underestimated or under-detected because of lack of mental health care services and surveillance.[57] Detection and mental health surveillance are supposed to be more effective in urban areas. In fact, in last decade, there has been an increasing interest in the early detection of psychosis and individuals at clinical high risk for psychosis in the urban settings.[58-60] In particular, strategies of detection aim to involve the primary care network and its database in order to employ data regarding the associated risk factors, according to the literature, into clinical-learning or machine-learning algorithms. For example, some experimental approaches have been tested in the London area by Fusar Poli et al in order to increase the accuracy of detection of psychosis with a synergic employment of data/risk factors from primary and secondary care.[58–60]

Urbanicity and suicide

Urban lifestyle has been associated with higher rates of suicidality. Historically, Durkheim[61] reported more suicidality in urban areas even if a body of evidences have subsequently shown a declining trend in suicidality in urban settings and an increase in rural areas over the decades in many countries including Europe, United States, New Zeland, China, and Canada.[61,62] Suicide rates were also significantly higher in rural settings and remote areas of Australia over 4 years of observation (2004-2008).[63] Nevertheless, in contrast with these trends, suicide rates have been increasing with urbanization in Denmark as well as in Wales in the 1990s.[64,65] Reasons for higher suicidality in rural areas have been supposed to be more social isolation, ageing, socio-economic decline, poor availability of mental health services, lower social support, and climate challenges.[66–68]

Also, social processes may vary among urban and rural settings. For example, social isolation may be a leading factor to suicide: a recent study analyzed rates of suicide in all Brazilian cities from

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1992 to 2009 and in U.S. counties from 2003 to 2007, showing a decrease of suicides with the population growth.[69] Deprivation and poverty may also explain the higher prevalence of suicide in rural areas as confirmed in an Australian study conducted between 2004 and 2008 and in seven South Korean cities between 2003 and 2008.[70,71] It has also been suggested that the choice of suicide method may lead to different rates of suicides in urban and rural settings. For example, highly lethal pesticides have been employed in rural areas, as well as jumping from a height or throwing itself in front of a train are common in the cities.[70,71] Cities designers may reduce suicide rates through structural changes (protecting buildings, bridges, railways and subway, etc.) and employing physical barriers.[72,73] Also, improving social security, social integration, and public welfare may all reduce the rate of suicide in urban areas.[66–68]

Homeless, marginalization, and minorities in the cities

Urbanization and the movement of population from rural to urban settings have both added to preexisting social inequalities with a possible increase of poverty and marginalization.[2] Often, social and economic resources do not follow the fast development of megacities with the increase of poor and vulnerable neighborhoods, insufficient housing, and so on.[2] Most of migrants from rural to urban settings do move for health, social, or occupational unmet needs and create a competition for few resources in the cities: this creates a discrepancy in the city with well-developed parts of it and vulnerable parts such as poor neighborhoods including minorities, marginalized immigrants, or homeless people.[74] Homelessness is a social and health challenge in the cities all over the world.[75,76] A personal history of trauma in the childhood, migration from rural to urban settings with poor resources and insufficient housing may lead to homelessness.[74-76] Stergioupulos et al[77] documented that 72% of homeless people in six Canadian cities reported a cognitive impairment often related to mental disorders, substance abuse, traumas, and poor quality of life. Also, Krauz et al[78] reported 55% of current mental disorders among homeless Canadian population. In particular, substance abuse (affecting 78% of these subjects) was associated with higher comorbidity (infections, chronic conditions, traumas, etc.) and mortality among homeless as well as vulnerable housed subjects.[78] Poverty as well as mental disorders, substance abuse, and childhood traumas are leading causes for homelessness.[74-78] Urban mental health needs to deal with homelessness challenge as well as health problems of this population since mental illness and being homeless are in a bidirectional relationship.[74] There may be major limitations in treating homeless people in the cities: access to the care system may be difficult for structural deficits, limited resources, overcrowded services, individual barriers, lack of health insurance, low education level, and so on.[74] Also, modern psychiatry needs to take into account social factors leading to poverty and homelessness among psychiatric population.[76] Priebe et al[79] recommended good practices in psychiatry for reaching vulnerable and marginalized people in Europe (14 countries involved) suggesting: outreach programs for engaging with vulnerable and marginalized people reporting mental health problems, facilitating the access to services, promoting an integration between primary care, and secondary care services, spreading information about mental health among vulnerable neighborhoods and marginalized people. Some evidences suggest that community-based treatments, psychosocially oriented, are effective for this population: contingency management, cognitive behavioral interventions, and motivational interviewing.[80] Also, assertive community treatment, a form of community-based mental health intervention for individuals with impaired ability to live in the community, is effective and helps them to attend appointments with professionals and manage mental health symptoms, including case management and crisis interventions.[81] Polices aimed to support housing and employment are required to facilitate interventions and treatments since these may work only if individuals have secure addresses where they are housed.[75] Stigma and social discrimination against minorities and vulnerable people should be addressed properly too in the cities. In fact, social discrimination affects minorities and inequality in relocating recourses may add to the preexisting vulnerability and lead to more "*social stress.*"[82] City government and local policies should be inspired by the principle of social justice, promoting social resilience, and social capability to be healthy and reducing social impact on mental illness.[82]

Gender-specific mental health services should me promoted as well as services for specific minorities such as LGBTQI (lesbian, gay, bisexual, transgender, queer, and intersex). In fact, poor mental health and poor outcomes are associated with perceived discrimination among all minorities.[83,84] Discrimination and social marginalization are part of "*minority stress*" affecting those people presenting variations in sexual orientation, religion, race, political belief, and so on.[82,85] Rates of psychiatric morbidity (eg, depression, anxiety disorders, substance abuse, as well as suicide) have also been shown to be much higher in the LGBTQI populations.[85] It has also been described that gender and sexual minorities tend to migrate from less enlightened rural zones to more accommodating cities since they feel increasing social pressure to move.[86] In 2013, a large study in United States found no differences in mental health problems and quality of life of groups of gender and sexual minorities living in urban and rural settings.[87] Minorities, including mentally ill persons or sexual minorities, may challenge with violence, more in urban settings than in rural ones, mostly derived by a politically oriented discrimination and leading to more social stress and psychopathology.[87-89] Specific mental health services should be developed for mental health issues related to the state of being minority or migrant minority, also specific training on these issues should be introduced in the core curriculum of mental health care professionals.[85]

Neuroscience and urbanization

The perception of the environment and its impact on the subjective wellbeing and brain modulation is of increasing interest.[2] In particular, it has been argued that the city is one of the most predictable factors of developing schizophrenia or major psychiatric disorders.[90,91] In fact, The Ecological Hypothesis for Schizophrenia is based on the concept of "direct perception" which links external stimuli from the environment to brain neural mechanisms: designed environments might impact on the attentional neural system.[92–94]

In addition, Mirror Neuron Theory has identified neural regions involved in the reaction to external actions such as premotor cortex and perigenual anterior caudal cortex (pACC).[95] Also, it has been suggested that neural structures involved in the ecological perception might include the right dorsolateral prefrontal cortex (rDLPFC).[96] The role of the pACC is still not clear but it seems to be connected to the limbic "emotional" center of the brain possibly mediating an anxiety response in regard to social standing.[95] It also seems to be involved in empathetic processes possibly associated to social connectedness and awareness.[95] The role of rDLPFC is even more controversial: this area is supposed to be connected to manipulation of spatial representations in the working memory and it

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seems to be deficient in urban life since urban settings have apparently much greater visual complexity than rural areas.[95] One possible explanation may be that rDLPFC processes new affordances and probably there may be a standardization of responses in the city ecological context (city routine).[96]

An activation of amygdale in urban settings has been described: it may be related to identification of events and stimuli "*important to me*" with the selections of those with a relevant salience.[97] Increased amygdale activity may be related to an increased attribution of self-involvement in the city context: this over-identification may be also present in psychotic and anxiety disorders.[97]

According to the ecological hypothesis for schizophrenia, the increase of psychotic disorders in urban settings may be explained with a possible urban environment impact on deficits in some neural regions: the pACC, possibly involved in social interactions, the amygdale which modulates salience of external stimuli, and rDLPFC, possibly involved in processing complex spatial elements and affordances.[98,99]

Recently, Lemmers-Jansen et al[100] performed a functional magnetic resonance imaging study in order to investigate if reduced trust, as a factor impacting on mentally ill patients' social functioning, is associated with urban upbringing. Even if urban upbringing and social trust were statistically unrelated, urban upbringing was found to be linked to differential amygdala activation, related to an alteration of feedback learning, but was not associated with trust behavior.

In conclusion, urban environmental factors and their impact on brain functioning and plasticity should be seriously considered by urban designers which should carefully evaluate the consequences of their own projects and possible action-triggers affecting mental health.[2]

Urban design and mental health

Ecological Hypothesis for Mental Illness suggests that some environmental stimuli may impact on subjects' wellbeing and their brain functioning. Urban design is not a direct risk factor for schizophrenia but may surely be responsible for some determinants of wellbeing and health recovery: it may provide some places for recreational activities, relaxation, promoting social support and avoiding segregation, promoting security through the city, and facilitating access to the health care.[2]

The Center for Urban Design and Mental Health[101] points out that urban design may promote good mental health in the GAPS framework: green, active, pro-social, and safe places. *Green and blue spaces:* green and blue spaces such as parks, woods, gardens, lakes, access to river, and sea, are promising factors for mental health promotion through the urban design.[2] Several evidences confirm that green spaces may be protective against stress and communities living in greener urban reported less mental distress and more mental wellbeing.[102] In 2019, exposure to higher levels of residential green space has been associated with better early childhood neurodevelopment by reducing levels of traffic-related air pollution.[103,104] Labib et al[105] systematically analyzed studies evaluating the influence of urban green-blue spaces on human health confirming the association with better mental health outcomes among exposed population. Some theories have been proposed for explaining the relationship between green spaces and mental wellbeing: (a) the biophilia theory[106] based on a subconscious biological attitude to be in touch with other species; (b) the stress reduction theory,[107] according to which green spaces reduce physiological and psychological stress taking us away from everyday pressure in a "dose-response" relationship; and (c) the attention restoration theory[108] based on the evidence that green spaces physically and psychologically distance people from the urban environment which requires more attention and concentration. *Active*: Green spaces in the city have an important role in promoting physical activity. It is well known that physical activity and exercise have a positive effect on mental health and subjective wellbeing with increasing evidences about exercise as effective in addressing depression, anxiety symptoms, as well as some domains in schizophrenia and attention deficit disorder.[109] Accessible and walkable parks, playing fields may facilitate physical activity and need to be considered by urban designers.[2] Also, the availability of bicycle paths and public transportation, including subway, can reduce the use of cars which are associated to more traffic, noise, air pollution, and stress.[2] *Pro-social:* moreover open public spaces, meeting centers, public buildings promote social aggregation, and networking, as well as the structure of neighborhoods may influence social connectedness.[2,27,110] *Safe places:* the rate of crimes and violence, perceived insecurity may impact on the wellbeing and mental health of city dwellers.[12] Urban design may improve security through a video surveillance system, demarcation of public-private areas, full access, and control of public spaces avoiding isolated parks or streets that may attract criminals.[2]

New strategies and challenges

Urban lifestyle can affect mental health according to a number of evidences shown above. Todd Litman[111] proposed a list of factors/mechanisms associated with mental health in the urban settings: (a) social stress; (b) substance abuse; (c) social isolation and loneliness; (d) noise and pollution; (e) crime and insecurity; (f) crowding and reduced privacy; (g) economic stress; (h) poor physical activity; (i) transport conditions; and (l) inadequate access to nature. According to these risk factors, Litman[111] proposed some possible strategies in order to reduce the impact on population's mental health. First, *targeted social services* should be promoted in order to reduce social stress due to some factors like poverty, housing problems (homelessness), minorities and immigrants isolation, and so on. Improving *affordability* of housing and transportation may be a second effective strategy. As discussed, *pro-social places* should be considered by urban designers such as parks, public buildings, in order to promote community interactions and inclusion of vulnerable groups. Urban design should facilitate cohesion, physical activity and contact with nature (*green spaces*). Social stress and economic stress should be addressed by local urban policies and social security.[2] Policy makers and urban designers together need to adopt policies in order to reduce air, light, and noise pollution, promote walking, cycling, accessible public transportation, accessible health care services, as well as social contractedness in reasonable sized and well-organized neighborhoods and common spaces.[1,2] Baumann et al[112] proposed to group these strategies under an umbrella term of "*urban remediation*," including all those strategies for improving mental health in the city as well as reducing risk factors for mental distress and improving the inclusion of mentally ill patients in the urban setting.

Finally, research studies in this field should be encouraged in order to define globally accepted guidelines, for both policy makers and urban designers, and for improving mental health and mental health care facilities in the cities.[113]

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Conclusions

This narrative mini-review provides an up-to-date overview on the emerging mental health issues related to the rapid globalization and urbanization. World's population is rapidly moving from rural setting to cities and it has been estimated that 80% of population will live in megacities in 2060.[1] Urbanization affects mental health through *social*, *economic*, and *environmental* factors, as discussed. Policy makers and urban designers should promote initiatives in order to reduce social and stressful factors such as social disparities and homelessness, improve social security, improve access to green areas, reduce pollution and crimes, and so on. Also targeted social services should be promoted and mental health services should be more accessible in the cities to all levels of community. Regrettably, no globally accepted guidelines for improving mental health in the cities are available and further research studies are encouraged to help policy makers and urban designers in structuring mental health services and adopting strategies to prevent/reduce mental health issues related to urbanization.

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