Living in São Paulo Metropolitan Area: understanding the impact on mental health

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São Paulo is "not a city" (Vilém Flusser),
São Paulo is an "anti-city" (Jaime Oliva)
São Paulo is an "impossible city" (Norman Gall)
São Paulo is "chaotic" (many São Paulo residents)

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Introduction

The world is becoming increasingly urbanized, with more than 50% of its population currently living in cities, whereas in 1800 this percentage was merely 2% (UN 2001). In 1950, only New York and Tokyo were considered megacities (defined as cities with more than 10 million inhabitants) (UN 2006). In 2016, there were 31 megacities, being São Paulo Metropolitan Area (SPMA) with its 21 million inhabitants the 5th largest metropolis in the world (UN 2016). The municipality of São Paulo (SP) alone is also a megacity, with approximately 12 million inhabitants (IBGE 2018). This concentration of the world in megacities, particularly in the Global South, accentuates social inequality, violence exposure and urbanization-associated load of psychosocial stress.

The striking impact of urbanization on the mental life of individuals and on the forms of social organization has been discussed with great interest from the end of the 19th century to the beginning of the 20th century (Simmel, 1903). Cities provided a completely different environment from the countryside. They are noisier, lighter, more crowded, and full of machines and vehicles, pushing to an accelerated life style with a higher number of interactions among strangers. Social scientists and epidemiologists have described patterns of worse mental health in cities, likely due to psychosocial factors such as crowded housing, high density of population, exposure to violence, poverty, unhealthy life style, lack of adequate familiar and social connections and excessive stress load (Fitzgerald & Rose, 2015).

In this article we aim to reflect on the relationship between the process of urbanization of SPMA and its impact on the mental health and wellbeing of its inhabitants. Interdisciplinary studies are crucial for this kind of understanding, and therefore, we will discuss how studies integrating social sciences, bio-medical sciences and the humanities can act together to find new ways of assessing the association of urban living in a megalopolis and mental health status and to develop efficient actions to tackle collective problems.

Historical background

The process of urbanization of São Paulo was fast. In 1890, there were approximately 65,000 inhabitants in the city, which increased to 1 million people by 1940 (São Paulo 2017). Subventions from the Brazilian federal government induced European and Japanese citizens to migrate to São Paulo, attracted by job opportunities and by economical and social ascension expectative (Baeninger 2012).

Public policies encouraged commercial building companies to start real state developments in new locations away from the already crowded downtown area. Prosperous coffee farm owners built their fancy residences in those areas, beginning a model of urban space occupation still existing today, characterized by affluent inhabitants seeking areas of low density and exclusivity (Oliva & Fonseca 2016).

International migration decreased in the 1940s, at the same time that an internal national migration movement enormously increased. During that decade, it is estimated that approximately 3 million people migrated from Brazilian rural areas to São Paulo, mostly from the North and Northeast regions. This rural-urban migration persisted until the end of the 1970s (Baeninger, 2012), the decade of the Brazilian "Economic Miracle", during the military dictatorship era (1964-1985) (Veloso et al 2008). During the 1960s and 1970s, internal migrants had settled in peripheral and industrial zones of the municipality of São Paulo, where properties were less expensive, but with inadequate urban and health infrastructure (Caldeira 2017). Some of them settled in illegal housing areas building rustic houses that together would become known as "favelas"[1] (Feltran 2009). São Paulo Metropolitan Area experienced a dramatic population growth and territorial expansion in this period.

During the 1980s and the beginning of the 1990s, Brazil suffered an economic stagnation associated with high and increasing inflation, along with deteriorating living conditions and higher social inequality (Considera et al, 1994). At the same time and likely associated with these conditions, the area of land occupied by illegal housing and the number of poor individuals living there increased, so that by 1993 19.4% of the population of São Paulo

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[1] Self-built housing erected on illegally occupied land (UN Habitat, 2010).

was living in "favelas" (FIPE/FEA-USP 1993 in: Saraiva 2015). This process was associated with the growth of informal and illegal commerce of products (recreational drugs, whipped items and black market) and a rise in urban violence. Individuals living in favelas are constantly exposed to violence, vigilance, and repression (Saraiva, 2015), either because there is an absence of State power and protection (lack of infrastructure and fragile public policies) or because police actions occur in a violent and indiscriminate way. In fact, accidental deaths of local citizens occur frequently when police officers make violent entries in favelas aiming to arrest members of drug cartels. At the same time, upper and middle classes suffer from urban violence, associated with robbery and heavy social tension. Discourse on the need for security increased as fear took over the city, becoming pervasive and reaching all social classes, and social and economical segregation became more explicit - a scenario persisting up to now (Caldeira, 2000).

Urbanization versus urbanity

This pattern of urban growth characterizes São Paulo as a city of low urbanity[2] with intense spatial segregation by ethnic background, socioeconomic status, educational level, and professional occupation (Bonduki & Rolnik 1982). An important element contributing to this distribution was the influence of the Garden City movement, which started in England with an urbanistic proposal of building smaller areas within cities where gardens and urban elements were present and abundant (Oliva & Fonseca, 2016). In São Paulo, these areas were sold as "garden-suburbs" and advertised as ideal and peaceful places in exclusive residential areas offering a high quality of life, away from the busy and mixed downtown areas.

The garden-suburbs were the embryo of gated communities, the residential choice for the upper classes since the late 1970s, in search of

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[2] A concept that refers to how city spaces welcome people (Aguiar, 2012). The "ideal" city would be the one that promotes the maximum interaction and encounter between its inhabitants. Inhospitable spaces, marked by walls, bars and segregation are spaces of low urbanity, contrasting with high urbanity spaces such as parks and squares, which invite the contact and establish conviviality with the diversity and the "alien" (Netto 2012).

comfort, social status and safety (D'Ottaviano, 2008). The company Albuquerque Takaoka built the first gated community and named it after Jean-Luc Godard's movie Alphaville, selling the venture as a "paradise", in contrast with the dystopian atmosphere of the movie.

Simultaneously to these evolving processes, residential segregation became more explicit, with a highly educated elite living in central areas with the best urban conditions or in gated communities either in the centre or in the outskirts, and the lower class, mostly unskilled manual workers, living in areas with inadequate and poor urban infrastructure (Marques 2015), located in Northern and Eastern parts of SP city and in bordering and distant municipalities (SP-SEHAB 2016).

Rolnik (2017) showed the relationship between the increase in rent value and the massive number of evictions, with the growth of the number of occupations and the expansion of clusters in peripheral areas (such as the area with water springs, called "mananciais") by families that can no longer economically afford the rent in more central and formal site areas. According to the website of the Housing Struggle Front ("*Frente de Luta por Moradia*"[3]): "There are 420,327 empty and idle homes and thousands of closed, abandoned commercial buildings in the city of São Paulo. Meanwhile almost 2 million people live in "favelas" and about 3 million live in substandard housing. The downtown population has declined by 20% in 10 years, leaving almost 20,000 households empty". The few housing programs available are not able to provide support to low-income families, who continue to be expelled from urbanized areas (FLM site, 2018).

This centre-outskirts dichotomy brings an enormous problem of mobility, one of the main issues that impact on the urbanity of São Paulo. Lower class workers dispute space in uncomfortable packed trains and buses in rush hours, while middle and upper class individuals, in search of safety and comfort, are trapped in traffic jams in their shielded cars. Mobility infrastructure is unequally distributed, reinforcing social and spatial segregation. The development of the road network started in the centre (where most jobs are available) spreading in radial and concentric forms to

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[3] A group with different representatives from social movements that fight for better and affordable housing for the lower income population.

the outskirts, where most skilled and unskilled workers live. Roads and large avenues were not built based on an urbanistic plan, but following the interests of the real estate market. The city was planned for cars, there was great investment in developing the road network system, and individuals were always encouraged to acquire their own vehicles (Requena, 2015). In 2016, time spent in traffic for people using cars was 3hours and 6 minutes daily on average and for people who use buses, 3 hours 11 minutes (Rede Nossa São Paulo, 2016). The excess of motorized vehicles impacts on the environment, causing air and noise pollution in the city which, along with the lack of green areas, decreases urbanity and causes a negative impact on wellbeing (Stansfeld et al 2000, Fonken et al 2011, Van der Berg et al 2016, Berry et al 2010, Beyer et al 2014, De Vries et al 2016, Ulmer et al 2016).

Mental disorders in São Paulo Metropolitan Area

As described above, this complex interaction of environmental risk and lifestyle factors such as segregation, inequalities, noise, pollution, a precarious built environment, and urban violence are incremental factors that impact on the quality of life of São Paulo's residents. To evaluate the impact of this multifaceted environment on the mental health of the city's inhabitants was the main aim of the São Paulo Megacity Mental Health Survey (SPMMHS) project.[4] We found that approximately 30% of the sample (composed of 5,037 adults living in São Paulo Metropolitan Area) presented active mental disorders at the time of the interview. The prevalence of severe cases was 10%, which was associated with impairment in social life, work, and interpersonal relationship, consistent with the picture depicted in the previous section (Viana et al 2009; Andrade et al 2012). These figures are higher than the findings in other megacities from the Global South, such as Mexico City (Medina-Mora et al, 2005), Beijing and Shanghai (Shen et al, 2006). Disorders

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[4] The São Paulo Megacity Mental Health Survey is the Brazilian counterpart of the World Mental Health Survey Initiative funded by the World Health Organization (WHO). The project aimed to find the prevalence of mental disorders and its correlates in different countries, using the same methodology, facilitating cross-national comparisons (Kessler & Ustun, 2008). Almost 30 countries were included in the survey. In Brazil, the research was done in the SPMA with more than 5,000 adults interviewed in 2007.

evaluated were mood disorders, anxiety disorders, impulse control disorders[5] and substance use disorders.

Anxiety disorders (20%) and depression (10%) were the most prevalent disorders. Among anxiety disorders, specific phobia was the most common diagnosis. More than half the cases of anxiety had an early onset before the age of 20. Depression also had a high prevalence, with early onset: 25% of cases began before the age of 20 (Viana & Andrade, 2012).

A detrimental pattern of alcohol use was observed, with approximately 30% of regular drinkers drinking in a heavy drinking pattern (five or more drinks in a row for men and four or more drinks in a row for women). Two-thirds reported heavy drinking three or more times in a month. Another important finding is the male-female convergence in the prevalence of heavy drinking pattern. Women are surpassing men in terms of estimated modal doses of alcohol consumption and women have reached men in terms of modal frequency of consumption in heavy drinking patterns. This pattern is not characterized as dependence but is associated with a series of health outcomes such as intentional and unintentional injuries. Problematic alcohol consumption (heavy drinking, abuse and dependence) was more common in men living in more deprived areas, reinforcing the association of mental diseases and lack of urbanity already discussed. These individuals are very likely exposed to a higher load of stress, related to inadequate and unsafe living conditions, excessive work hours, lower incomes and higher rates of unemployment. Previous studies have shown that a lack of leisure options and spaces for conviviality and a high density of alcohol outlets are related with high prevalence of heavy drinking (Silveira et al, 2014).

Correlations of some disorders and living conditions were found, regarding exposure to violence, migration, urbanicity[6], social deprivation and income inequality, stressing the importance of the chaotic and socially unequal development of São Paulo megalopolis in the mental health of their inhabitants.

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[5] Impulse control disorders are a class of psychiatric disorders characterized by impulsivity. Intermittent explosive disorder, the most prevalent impulse control disorder in SPMA, is characterized by repeated episodes of aggressive, impulsive, violent behaviours or angry verbal outbursts.
[6] Urbanicity is defined as being born and raised in early stages of life in urban environment

High exposure to urban violence, previously discussed in this document, was evaluated through a list of eight crime-related traumatic events, and was strikingly elevated, with 54.6% of the sample exposed to at least one of those events. About 36% had witnessed someone being injured or killed. One in three respondents had been mugged or threatened with a weapon before (Andrade et al 2012). Exposure to urban violence was associated with increased likelihood of having post-traumatic stress disorder, but also all the other larger mental disorder categories, such as mood, anxiety, impulse control, and substance use disorders, especially when more than one violent event had been experienced. The higher the number of violent events experienced, the higher the prevalence and severity of disorders (Andrade et al 2012)

Growing up in an urban environment was associated with increased odds of presenting an impulse control disorder, and to a lesser extent, mood disorders and more severe disorders. Half of the respondents were born outside SPMA, and were considered migrants, of which 73% came from rural areas, and small cities, and 27% had come from another large city. Most of them were living in neighbourhoods with some sort of social deprivation. Only a quarter of respondents were living in areas with no or low levels of neighbourhood social deprivation (NSD).[7] Although migrants were less prone to present mood disorders compared to non-migrants in the same area, important subgroup variation across migration status was found. For instance, male migrants living in medium/high social deprivation neighbourhoods had more anxiety disorders than migrant men living in neighbourhoods with no/low social deprivation. Among migrants living in neighbourhoods with no/low social deprivation, migrant women were much more likely to have active anxiety disorder compared to migrant men living in the same conditions (Andrade et al, 2012). Previous exposure to an urban environment

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[7] An index of neighbourhood social deprivation (NSD) level was developed by the Center of Metropolitan Studies (http://www.centrodametropole.org.br) and assigned to each census unit, to reflect social conditions in the SPMA geographical space using data from the 2000 Census. This index represents a combination of socio-economic deprivation dimension (income, level of education, family size, and percentage of families headed by a woman with low educational level) and the population's age structure. The NSD index ranges from 1 (no social deprivation) to 8 (high social deprivation; see Table S1 for details), with a concentric spatial distribution of deprivation increasing in peripheral neighbourhoods.

was associated with increased odds of presenting an impulse control disorder, and to a lesser extent, mood disorders and more severe disorders. These findings may be consistent with earlier reports that psychiatric disorders are more common among the inhabitants of urbanized areas. A "breeder hypothesis"[8] has been used to link the detrimental consequences of exposure to urbanicity to poorer mental health status (Andrade et al 2012).

Higher rates of substance use disorders in men and depression in women occurred in areas of high social deprivation, located in the outskirts of the metropolitan area rather than in wealthy central areas, although the centre has a higher population density, where depression and anxiety were very prevalent. Heavy drinking and substance use disorders were more prevalent in peripheral areas (Andrade et al 2012).

Other contextual aspects, such as area-level income inequality, were associated with depression. According to the income inequality theory, people living in places with higher income inequality are more vulnerable to several health outcomes. The original relative income theory proposed that high income inequality will lead to psychological distress due to feelings of work/life failure and negative social comparisons. In SPMA, higher area-level income inequality was statistically associated with depression, but not with anxiety (Chiavegatto-Filho et al, 2013). Area-level inequality was also associated with a multimorbidity factor that encompasses premenstrual dysphoria, mood, anxiety, impulse-control disorders, and headache/migraine in women (Wang et al, submitted).

This high level of morbidity brings a high degree of disability associated with mental disorders. Mood and anxiety disorders were highly associated with days completely out-of-role (DOR) and were responsible for approximately one-third of DOR at societal level, being only behind chronic pain in this ranking (Andrade et al, 2013).

Access to mental health care in SPMA is highly unequal, reflecting the large socio-economic disparity and profound inequality. Most people who manage to obtain psychiatric treatment represent a small proportion of the affluent population who can afford out-of-pocket specialty care (Andrade et

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[8] The "breeder hypothesis" refers to social causation of disorders. Studies using this term are usually about schizophrenia, in which certain social characteristics have been linked to its emergence, such as immigration and social class (Cooper, 2005)

al, 2008). The demand for treatment of socio-economically disadvantaged population is overly unmet. Results from the SPMMHS indicate that living in a region with high inequality, residents had a lower probability of having a regular physician. In contrast, individual factors, such as higher educational levels and possession of health insurance, increased the likelihood of having used health care services in the 12 months prior to the assessment, an effect greater than that found for individual income. Presence of chronic and mental illnesses was strongly correlated with the use of health care services in the past year (Chiavegatto Filho et al 2015).

Still according to data from SPMMHS, less than one of four adults with any psychiatric disorder in the last 12 months had received treatment in the previous year, and out of these, one in five from the health care sector and one in ten from psychiatrists. The Mental Health Service (MHS) sector delivered more appointments than the General Medical sector (GM), with a higher proportion of individuals receiving the minimal threshold of treatment[9] in the MHS sector than in the GM sector (54.6 vs. 23.2%). Besides, the likelihood of receiving treatment was greater among those individuals with insurance and higher education with a severe disorder or any anxiety and mood disorder (Wang et al, 2017). Only 6% received treatment from a human services provider (counsellor in a non-mental health setting) or a complementary and alternative medical provider (different types of healers and support groups) (Wang et al, 2017). The public health system is insufficient to meet the needs of many people and resources appear to be badly distributed.

Regarding the reasons for not getting treatment, structural barriers such as limited availability of facilities and financial difficulties were reported by 25% of severe cases. But, a great proportion of those with a disorder referred to a low perceived need for any treatment (40% of serious cases, 60% of moderate cases), either because of wanting to handle their problems on their own or due to the perceived ineffectiveness of the available options.

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[9] Considered as a proxy to quality of care, minimal treatment was considered as either ≥2 months of an adequate medication for target disorders and ≥4 visits to any type of health professional or ≥8 appointments for psychotherapy sessions.

Conclusion: complex issues need complex methods

The results from SPMMHS raises several questions about the factors associated with the high prevalence of mental disorders in a megacity and how we can deal with them. A better understanding of the aspects involved in the built environment, the forms of organization of a megalopolis and the political and economical context where the city belongs, will help us to find clues for the better management of this extremely complex social and public health situation.

We can didactically divide these aspects in some main categories such as environmental, biological, individual and social factors, which are dynamic and interactive. Then, it is clear that the better approach to assess this extremely multifaceted and interchangeable situation is the development of interdisciplinary research projects, involving different areas of knowledge such as epidemiology and ethnography.

Epidemiological studies provide data that could be generalized to the population, but the individual experience and life stories of assessed individuals are not part of these studies. On the other hand, ethnography provides these qualitative data, and working together these two disciplines may be able to provide a better and more precise understanding of the factors associated with living and suffering in a city such as SPMA. In fact, ethnographic research is being increasingly used in health research. Through qualitative strategies, researchers seek to map and understand the social dynamics, but also to give voice to the individuals who are being assessed, transforming them into interlocutors of the research, not only objects of study. Understanding how the territory is produced and appropriated by its inhabitants allows researchers and stakeholders to establish links and develop more effective projects and public policies to provide better quality of life and health assistance.

Researchers from different areas have their own hypotheses and ways of describing the experience of living in SPMA. According to Carmen Santana (personal communication, 2017), different existential territories could exist in the same physical territory. The perception of the city of an individual living on the sidewalks is totally different from that of an individual living in a penthouse. Everyone will have different representations of urban life, creating

different existential territories. An encounter between these individuals living totally diverse urban experiences in the same city, and sometimes in the same neighbourhood, will cause great personal discomfort and a sense of "strangeness" and seeing the other as an "alien". Consequently, the sense of belonging, commonality (and even humanity) can be lost as it will be hard to find similarities in the other individual. People living in different social clusters in the megalopolis experience not only the sense of space, but also the time dimension, differently. Highly vulnerable social groups organize their life according to short-term considerations, usually the present day, since it is necessary to find the next meal or the place to sleep for that night. Projections for the future are not possible for these groups. This same form of experiencing time is present in individuals with drug addiction, according to Guilherme Messas (personal communication, 2017). Strategies of recovery and social insertion for these groups should obligatorily take these aspects into account.

Guilherme Messas (personal communication, 2017) also explores the link between the social role of the individual and his or her identity. Psychopathological traits might be related to restrictions of personality potentials and existential conditions due to the social role one has to achieve, such as cases of melancholic depression, or has been left to achieve, since being "mentally ill" or "the addict" are also social roles.

Taniele Rui (personal communication, 2017) states that to execute an ethnographic study it is necessary to consider the time which the researcher remains in the field and explore it. In her work in "São Paulo's Cracolândia"[10], she helps us to understand the different dynamics and relationships between drug users, illegal markets and forms of occupation and circulation of these users, seeing them as strategies for resistance in the face of violent forms of repression and control. According to her, it is important to map this scenario of conflict to promote reflection upon how that territory is being produced and the power relations evolved.

The point of view of the "mentally ill" was explored in another ethnographic study with women with depression, who attended a public

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[10] "Cracolândia" is an area in the centre of the municipality of São Paulo where many crack users are concentrated.

mental health service in Embu das Artes, a municipality in the outskirts of SPMA. They understood their depressive symptoms as the result of life stressors, such as living in a violent area ruled by drug trafficking, interpersonal problems, physical abuse, double shifts, unemployment, and lack of leisure options (Martin, Quirino & Mari 2007). There was a deficiency of recognition of subjective aspects in the emergence of their depression. Their sense of agency was diminished and they assumed an attitude of passivity in the treatment. Taking medication and attending psychiatric consultations was among the few things they felt could do to relieve suffering. It was hard for them to recognize ways in which they could themselves take steps to improve their wellbeing and develop strategies to cope with stressors (Martin, Quirino & Mari 2007).

The use of medication and illicit drugs are common ways of dealing with suffering among SPMA's inhabitants. Usually young people search for illicit drugs and adults (especially women) use prescription drugs, to which access is guaranteed by public health services (Adorno, 2010). The aim of this use is to mitigate or eliminate feelings of angst, sadness, and hopelessness in the face of a harrowing reality. As Felipe Corchs (personal communication, 2017) stated, this is reinforced by discourses present in the modern society that associate happiness and pleasure with the total absence of emotional suffering, which people should aspire to. Paradoxically, this increases suffering because of the frustration and sense of failure of not reaching these impossible goals. Social media contributes to an increased sense of failure, inferiority and loneliness, since people show only a small portion of their lives as if they have reached a state of omnipresent "perfection". Another aspect of society that negatively impacts on our subjectivity is the great disconnect between our daily activities and the natural reinforcement produced by them. The predominant type of social reinforcement today is negative reinforcement, which means not experiencing a negative outcome (punishment, pain, suffering). The positive reinforcement would be experiencing a positive outcome, recognizing a benefit (individual or collective) for an action or having the sense of gaining something. A society built upon negative reinforcement and with little capacity for positive reinforcement exerts control over its members through coercion (Sidman,

1989; Skinner, 1987).

It is also important to question our own research assumptions. After all, SPMA has many qualities as a metropole and people still choose to come to SPMA or keep living in it. "Stress" is always seen as having detrimental effects on people, and they have been widely described and studied. But, new evidences show that stress load can also have a protective and evolutionary effect, helping build resilience. Experiencing moderate and manageable amounts of stress load in childhood has been associated with the development of better coping skills in the face of adversities (Khoshaba & Maddi, 1999) and lower physiological reaction to stressors (Boyce & Chesterman, 1990) in adulthood. It is theorized that such a response occurs because of a phenomenon called "stress inoculation", as an analogy to how vaccines work (Haglund et al, 2007), which has been widely studied in animals (Maier et al, 2006). In humans, these effects have also been consistently observed in some studies (e.g: Hartley et al, 2014), where individuals learn how to manage stressors in a way that is considered healthy and resilient. The detrimental effects of stress are overly explored in research, while its protective effects are poorly explored. The absence of stress, as seen in overprotective parenting and not stimulating children in facing their problems and learning how to deal with them, might be related to the development of psychopathology (Corchs, 2018 - personal communication).

Social and environmental improvements, such as access to good housing and green spaces, have been proven to be beneficial to mental health, but surprisingly they are not considered mental health actions. Usually, mental health actions focus on people with mental disorders, which means that mental health is considered "the absence of mental disorders". There is little discussion about the use of art, cultural activities and political involvement in designing actions to develop mental health.

Professionals from different backgrounds must work together to accomplish the transformation of the paradigm of health as a biopsychosocial wellbeing, including the understanding that this state is not always permanent and integral. The main idea should be to target to something positive, not to scape of something negative. Accessing the problem in an integral and comprehensive perspective will make possible to

give adequate answers to a complex phenomenon that includes the collective, the urban space (noise, pollution, green areas) and its degree of urbanity, subjective suffering, social suffering, social deprivation, segregation, social inequality, political issues and mental illness.

Scientists and stakeholders should work collectively (interdisciplinary work) to develop efficient actions to tackle collective problems. The marginalized and vulnerable population need to be acknowledged and taken into account by health and municipal policy makers and by all citizens. They should be part of the city, not apart from it.

References

Adorno, R.C.F. (2010). Violência, sofrimento social e saúde pública. Revista Serviço Social & Saúde. UNICAMP Campinas, v. IX, n. 9.

Andrade, L.H., Viana, M.C., Tófoli, L.F., Wang, Y.P. (2008). Influence of psychiatric morbidity and sociodemographic determinants on use of service in a catchment area in the city of São Paulo, Brazil. *Soc Psychiatry Psychiatr Epidemiol.*, 43(1):45-53.

Andrade, L.H., Wang, Y.P., Andreoni, S., Silveira, C.M., Alexandrino-Silva, C., Siu, E.R., Nishimura, R., Anthony, J.C., Gattaz, W.F., Kessler, R.C., & Viana, M.C. (2012). Mental disorders in megacities: findings from the São Paulo megacity mental health survey, Brazil. *PLoS One*, 7(2):e31879. doi: 10.1371/journal.pone.0031879.

Andrade, L.H., Baptista, M.C., Alonso, J., Petukhova, M., Bruffaerts, R., Kessler, R.C., Silveira, C.M., Siu, E.R., Wang, Y.P., & Viana, M.C. (2013). Days out-of-role due to common physical and mental health problems: results from the São Paulo Megacity Mental Health Survey, Brazil. *Clinics* (Sao Paulo), 68(11):1392-9.

Aguiar, D. (2012). Urbanidade e qualidade da cidade. In: Aguiar, D & Netto, VM. (Orgs.). Urbanidades. Rio de Janeiro: Folio Digital: Letra e Imagem, pp. 61-79.

Baeninger, R. (2012). Fases e faces da migração em São Paulo. *Campinas: Nepo/Unicamp*.

Berry, H. L., Bowen, K., & Kjellstrom, T. (2010). Climate change and mental health: a causal pathways framework. *International Journal of Public Health*, 55(2), 123-132.

Beyer, K.M., Kaltenbach, A., Szabo, A., Bogar, S., Nieto, F. J., & Malecki, K.M. (2014). Exposure to neighborhood green space and mental health: evidence from the survey of the health of Wisconsin. *International Journal of Environmental Research and Public Health*, 11(3), 3453-3472.

Bonduki, N. & Rolnik, R. (1982). Periferia da Grande São Paulo: reprodução do espaço como expediente de reprodução da força de trabalho. In: Maricato, E. (org.). A Produção Capitalista da Casa (e da cidade) do Brasil Industrial. São Paulo: Alfa-ômega/

Boyce, W.T. & Chesterman, E. (1990). Life events, social support, and cardiovascular reactivity in adolescence. *J. Dev. Behav. Pediatr.*, 11(3):105-11.

Caldeira, T.P.R. (2000). *Cidade de Muros: Crime, Segregação e Cidadania em São Paulo*. São Paulo: Editora 34/Edusp

Caldeira, T.P.R. (2017) Peripheral urbanization: Autoconstruction, transversal logics, and politics in cities of the global south. *Environment and Planning Society and Space*, Vol. 35(1): 3–20.

Chiavegatto Filho, A.D., Kawachi, I., Wang, Y.P., Viana, M.C., & Andrade, L.H. (2013). Does income inequality get under the skin? A multilevel analysis of depression, anxiety and mental disorders in Sao Paulo, Brazil. *J Epidemiol Community Health*, 67(11):966-72.

Chiavegatto Filho, A. D. P., Wang, Y.P., Malik, A. M., Takaoka, J., Viana, M.C. & Andrade, L. H. (2015). Determinants of the use of health care services: multilevel analysis in the Metropolitan Region of Sao Paulo. *Rev Saúde Pública*, 49:15.

Considera, C.M., et al (1994). A Retrospect of the Brazilian Economy, in Perspectivas da Economia Brasileira — 1994, IPEA, Rio de Janeiro, chapter 1.

Cooper, B. (2005). Schizophrenia, social class and immigrant status: the epidemiological evidence. *Epidemiol Psychiatr Soc.*, 14(3):137-44.

Cortes, M.M.P. (2012). O diabo e a fluoxetina. Thesis (Doctorate). Universidade Estadual de Campinas, Instituto de Filosofia e Ciências Humanas.

Cruz, N.L.M. (2016). Clonazepam, um campeão de vendas no Brasil. Por quê?. Dissertation (Masters) - Universidade Federal de São Paulo (UNIFESP).

De Vries, S., ten Have, M., van Dorsselaer, S., van Wezep, M., Hermans, T., & de Graaf, R. (2016). Local availability of green and blue space and prevalence of common mental disorders in the Netherlands. *British Journal of Psychiatry Open*,2(6), 366-372.

D'Ottaviano, M.C.L. (2008). Condomínios fechados na região metropolitana de São Paulo: fim do modelo centro rico versus periferia pobre? Tese de doutorado apresentada ao programa de pós-graduação da Faculdade de Arquitetura e Urbanismo da Universidade de São Paulo, São Paulo.

Feltran, G. (2009). Transformações sociais e políticas nas periferias de São Paulo. *I EncontroNacional de Antropologia do Direito*.

Fitzgerald, D. & Rose, N. (2015). The neurosocial city. Urban Transformations Site. Retrieved from:
http://www.urbantransformations.ox.ac.uk/debate/the-neurosocial-city/

Fonken, L.K., Xu, X., Weil, Z. M., Chen, G., Sun, Q., Rajagopalan, S. & Nelson, R.J. (2011). Air pollution impairs cognition, provokes depressive-like behaviors and alters hippocampal cytokine expression and morphology. *Molecular psychiatry*,16(10), 987-995.

Frente de Luta por Moradia (FLM). Direito à cidade. Site (2018).
Retrieved from:

http://www.portalflm.com.br/luta-historico/direitoacidade/

Haglund, M.E., Nestadt, P.S., Cooper, N.S., Southwick SM, Charney DS. (2007). Psychobiological mechanisms of resilience: relevance to prevention and treatment of stress-related psychopathology. *Dev. Psychopathol*, 19(3):889-920.

Hartley, C.A., Gorun, A., Reddan, M.C., Ramirez, F., & Phelps, E.A. (2014). Stressor controllability modulates fear extinction in humans. *Neurobiol. Learn Mem.*, 113:149-56.

Instituto Brasileiro de Geografia e Estatística (IBGE) (2018). Cidades Panorama [Online]. Retrieved from: https://cidades.ibge.gov.br/brasil/sp/sao-paulo/panorama

Kessler, R.C. & Ustun, B. (2008). Acknowledgements. In Kessler RC & Ustun B (eds). *The WHO world mental health surveys. Global perspectives of mental health surveys*, Cambridge University Press, New York.

Khoshaba, D. M., & Maddi, S. R. (1999). Early experiences in hardiness development. *Consulting Psychology Journal: Practice and Research*, 51(2), 106-116.

Maier, S.F., Amat, J., Baratta, M.V., Paul, E., Watkins, L.R. (2006). Behavioral control, the medial prefrontal cortex, and resilience. *Dialogues Clin Neurosci.*, 8(4):397-406.

Marques, E. (2015). OS espaços sociais da metrópole nos 2000. In: Marques, E. (Org.) (2015). A Metrópole de São Paulo no século XXI: Espaços Heterogeneidades e Desigualdades. 1st ed, São Paulo: Ed. UNESP.

Martin, D., Quirino, J., & Mari, J. (2007). Depression among women living in the outskirts of São Paulo, Southeastern Brazil. *Rev Saúde Pública*, 41(4)

Medina-Mora, M.E., Borges, G, Lara, C., Benjet, C., Blanco, J., Fleiz, C., Villatoro, J., Rojas, E., & Zambrano, J. (2005). Prevalence, service use, and demographic correlates of 12-month DSM-IV psychiatric disorders in Mexico: results from the Mexican National Comorbidity Survey. *Psychol Med.,* 35(12):1773-83.

Netto V.M. (2015). In: Aguiar, D & Netto, V.M. (Orgs.). Urbanidades. Rio de Janeiro: Folio Digital: Letra e Imagem, pp. 35-59.

Oliva JT & Fonseca FP. (2016). O "modelo São Paulo": uma descompactação antiurbanidade na gênese da metrópole. *Revista do Instituto de Estudos Brasileiros*, Brasil, 65: 20-56.

Rede Nossa São Paulo & IBOPE (2016). 10a. edição da Pesquisa de Mobilidade Urbana e Transporte Público em São Paulo. [on-line].
Retrieved from:
http://www.nossasaopaulo.org.br/pesquisas/apresentacao-pesquisa-dmsc-2016.pdf?v=4

Requena, C. (2015). A mobilidade paulistana: viária e desigual. In: Marques, E. (Org.) (2015). A Metrópole de São Paulo no século XXI: Espaços Heterogeneidades e Desigualdades. 1st ed, São Paulo: Ed. UNESP.

Rolnik, R. (2017). Territórios em Conflito: São Paulo - espaço, história e política. Editora três estrelas. São Paulo.

São Paulo (Município) (2017). Histórico demográfico do município de São Paulo. Retrieved from:
http://smul.prefeitura.sp.gov.br/historico_demografico/tabelas/pop_brasil.php

São Paulo (Município). (2016). Secretaria Municipal de Habitação (SEHAB). Centro de Estudos da Metrópole (CEM). Marques E.C.L. et al. Relatório 1: Sistematização do Informações Relativas à precariedade e ao Déficit

Habitacional e Correção de bases de Favelas e Loteamentos. Retrieved from: http://www.fflch.usp.br/centrodametropole/382

São Paulo Cosmópolis (2017). Imigrantes em São Paulo: diagnóstico do atendimento à população imigrante no município e perfil dos imigrantes usuários de serviços públicos / organizado por São Paulo Cosmópolis ; coordenado por Deisy Ventura, Feliciano Sá Guimarães e Rossana Reis. - São Paulo: IRI-USP.

Saraiva, C. (2015). Revisitando a dinâmica social das favelas. In: Marques, E. (Org.) (2015). A Metrópole de São Paulo no século XXI: Espaços Heterogeneidades e Desigualdades. 1st ed, São Paulo: Ed. UNESP.

Shen, Y.C., Zhang, M.Y., Huang, Y.Q., He, Y.L., Liu, Z.R., Cheng, H., Tsang, A., Lee, S., & Kessler, R.C. (2006). Twelve-month prevalence, severity, and unmet need for treatment of mental disorders in metropolitan China. *Psychological Medicine*, 36, 257–267.

Silveira, CM., Siu, ER., Anthony, JC., Saito, LP., de Andrade, AG., Kutschenko, A., Viana, MC., Wang, YP., Martins, SS., & Andrade, LH. (2014). Drinking patterns and alcohol use disorders in São Paulo, Brazil: the role of neighborhood social deprivation and socioeconomic status. *PLoS One*, 1;9(10).

Simmel, G. (1964). [1903]. *The metropolis and mental life*. In *The Sociology of Georg Simmel*, ed./transl. KH Wolff, pp. 409–24. New York: Free Press.

Stansfeld, S.A., Haines, M.M., Burr, M., Berry, B., & Lercher, P. (2000). A review of environmental noise and mental health. *Noise and Health*, 2(8),1.

Ulmer, J. M., Wolf, K. L., Backman, D. R., Tretheway, R. L., Blain, C. J., O'Neil-Dunne, J. P., & Frank, L.D. (2016). Multiple health benefits of urban tree canopy: The mounting evidence for a green prescription. *Health & Place*,42, 54-62.

United Nations. Urban Millenium: Special Session of the General Assembly for an Overall Review and Appraisal of the Implementation of the Habitat Agenda. New York, 6-8 june 2001.
Retrieved from: http://www.un.org/ga/Istanbul+5/booklet4.pdf
[Accessed on July 27, 2018]

United Nations (2006). Department of Economic and Social Affairs, Population Division. World Urbanization Prospects: The 2005 Revision.
Retrieved from:
http://www.un.org/esa/population/publications/WUP2005/2005WUP_FS7.pdf

United Nations Human Settlements Programme (UN-HABITAT) (2010). São Paulo: A Tale of Two Cities. Retrieved from:
http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=2924&alt=1

United Nations, Department of Economic and Social Affairs, Population Division (2016). The World's Cities in 2016 – Data.
Retrieved from:
http://www.un.org/en/development/desa/population/publications/pdf/urbanization/the_worlds_cities_in_2016_data_booklet.pdf

Van den Berg, A. E., Maas, J., Verheij, R. A., & Groenewegen, P. P. (2010). Green space as a buffer between stressful life events and health. *Social Science & Medicine*, 70(8), 1203-1210.

Veloso, F.A., Villela, A., & Giambiagi, F. (2008). Determinantes do "milagre" econômico brasileiro (1968-1973): uma análise empírica. *Rev. Bras. Econ.,* 62(2).

Viana, M.C., Teixeira, M.G., Beraldi, F., Bassani, I.S., Andrade, L.H.S.G. (2009). São Paulo Megacity Mental Health Survey – A population-based epidemiological study of psychiatric morbidity in the São Paulo Metropolitan Area: aims, design and field implementation. *Rev Bras Psiquiatr.*, 31(4):375-86.

Viana, M.C. & Andrade, L.H.S.G. (2012). Lifetime prevalence, age and gender distribution and age-of-onset of psychiatric disorders in the São Paulo Metropolitan Area, Brazil: Results from the São Paulo Megacity Mental Health Survey. *Rev Bras Psiquiatr.*, 34:249-260.

Wang, Y.P., Chiavegatto Filho, A.D.P., Campanha, A.M., Malik, A.M., Mogadouro, M.A., Cambraia, M., Viana, M.C. & Andrade, L.H. (2017). Patterns and predictors of health service use among people with mental disorders in São Paulo metropolitan area, Brazil. *Epidemiol Psychiatr Sci;.*, 6(1):89-101.

Wang, Y.P. Nunes, B P., Benseñor, I.M., Viana, M.C., Nascimento, C.F., Chiavegatto Filho, A.D.P., & Andrade, L.H. Integrating mental-physical multimorbidity and healthcare use of general population in Sao Paulo metropolitan area: a multilevel analysis. Submitted to Psychiatric Research.