Health and social conditions of children living in disadvantaged neighborhoods in the city of Rome, Italy

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Abstract. – OBJECTIVE: The number of children living in socio-economically disadvantaged neighborhoods in developed countries is constantly growing, resulting in important implications for children's development, physical and psychological health and increased future disparities. In this study, we explored several key elements of children living in poor neighborhoods, such as demographic characteristics, access to public health assistance and school, and availability of housing and basic hygienic conditions.

PATIENTS AND METHODS: The study included 711 children aged 0-17 years referring to primary care services in the suburbs of the city of Rome, Italy.

RESULTS: Most children were born in Italy, while almost none of their parents were. Nearly 60% of the children did not have access to basic pediatric care, causing possible misdiagnosis and delayed treatment for acute and chronic conditions. A smaller percentage of the children did not have access to basic housing (8%) and hygienic facilities, such as heating, running water, and refrigerator (3.2%), leading to malnutrition, isolation and poor physical and psychological development.

CONCLUSIONS: This study confirms a critical condition for children living in disadvantaged neighborhoods, whose vulnerability is further worsened by the limited access to paediatric health assistance and, in some cases, to basic facilities with a severe impact on their physical and psychological development.

Key Words:
Children, Poverty, Disadvantaged neighborhoods, Primary care paediatric service.

Introduction

The number of families living in socio-economically disadvantaged neighborhoods in developed countries is constantly growing, and consequently, the number of children growing in such condition increases1-4. According to the United States Census, a neighborhood can be considered “poor” if 20% or more of residents lack sufficient money to live at a comfortable standard5; these neighborhoods are associated with negative educational, family and labor market outcomes1-5.

Nearly 25% of the United States population lives in a poor neighborhood, with a relevant increase when compared to the past6. Such percentage is similar in Europe, although with a higher variability among countries7-10. Being exposed to neighborhood poverty may have important implications for children's development11,12; in fact, children that live in socio-economically disadvantaged neighborhoods can experience more stress13 and violence14,15, and are more at risk of developing behavioral problems1 and criminal misconduct6. Poor neighborhoods have significant effects on chances to graduate from high school17, juvenile delinquency16, substance abuse18, and teenage childbearing19. Furthermore, children growing in poor neighborhoods have fewer chances to receive proper health assistance and develop more frequently acute and chronic diseases20,21.

Racial and ethnic disparities also play a role among people that live in disadvantaged neighbor-
A study from Timberlake in the United States population demonstrated that African American and Hispanic children spend an average of 50% and 40%, respectively, of their first 18 years in disadvantaged neighborhoods, while white children spend less than 5% of the time in similar conditions.

Furthermore, living in poor neighborhoods also shows an elevate continuity among generations, especially for the first and the second generation. In fact, among newly formed low-income households that are mainly composed of immigrants, those in poor neighborhoods had higher chances to remain in these neighborhoods for 15-20 years. This is also confirmed by Li et al. that found that about half of the children born in poor families also resided in a poor neighborhood at any time between birth and the age of 18 years and that over 33% of these children lived in a poor neighborhood both at birth and in adolescence.

In this study, we explored several key elements of children living in socio-economically disadvantaged neighborhoods in the city of Rome, Italy. They included demographic characteristics, with special attention to the country of origin of the children and their parents, access to public health assistance and school, and availability of housing and basic hygienic conditions such as heating, food refrigeration, and running water.

**Patients and Methods**

The study was performed between September 2019 and July 2020 and included 711 children living in socio-economically disadvantaged neighborhoods referring to primary care services dedicated to fragile patients. The first was the Madre di Misericordia Primary Care Center located in the Vatican City State and its mobile healthcare facilities including an advanced mobile medical unit and an ambulance used to reach poor neighborhoods; the second is the Medicina Solidale Center, located in a suburban area of the city of Rome, Italy.

For each patient, a pediatrician compiled through an interview with the child and parents a clinical-anamnestic record with details on the following items: demographic characteristics, social integration and family habits, and housing conditions. Collected data were manually entered into a database for each child.

Demographic characteristics included name, age, sex, weight and length at birth, as well as details on country of birth of children and parents.

Social integration and family habits investigated school attendance, regular access to pediatric health services, oral hygiene, and smoking habits in the family.

Questions on housing conditions investigated the availability of a house for the family, presence of hygienic services, heating system, refrigerator, and running water.

A basic health assessment with a general medical examination was then performed, with an evaluation of vital parameters and acute or chronic pathologic conditions, and prescription of drugs when necessary.

**Results**

**Demographic Characteristics**

Seven hundred-eleven children were included in the study over an 11-month period. Four hundred-five children were males (57%), 306 were females (43%).

Age ranged from 0 to 17 years. Two hundred eighty-four children were aged between 0 and 3 years and represented the largest percentage of our sample (39.9%), followed by children aged 6-10 years (179, 25.2%), 11-13 years (113, 15.9%), 14-17 years (72, 10.1%), and 4-5 years (63, 8.9%).

Weight at birth ranged between 2.8 and 3.5 kg (normal range 2.5-4.8 kg); length at birth ranged between 47 and 52 cm (normal range 45.7-60 cm). Both were within the normal range.

**Country of Origin**

The country of origin of children and their parents was investigated. The large majority of children was born in Italy (672, 94.5%), while a minority was born in a different country, mainly coinciding with that of the parents (39, 5.5%).

Differently, Italy was the country of origin only for 1.4% of the parents (10), while the majority was born in a different country (98.6%). Among them, the largest part came from countries in Eastern Europe (394, 56.2%), followed by Africa (296, 42.2%) and South America (11, 1.6%). The most represented countries of origin for parents were Romania (302, 42.5%) and Nigeria (219, 30.8%). Detailed data on parents’ countries of origin are shown in Figure 2.

**Social Integration and Family Habits**

All children aged 6 or more (n=364) in our sample were regularly attending public school. Only 67.1% of children in preschool age (n=233) attended kindergarten, while 32.9% (n=114) did not (Figure 3).
Regular access to public primary care pediatric service was confirmed only for 313 children (44%), while the remaining 398 (56%) did not have access to primary pediatric care, and therefore did not have health assistance to treat pathologic conditions, but also to perform regular check-ups and monitor the growth of the child.

Oral hygiene was investigated through a basic evaluation of the oral cavity and asking the children and their parents about their oral hygiene habits. The majority of the children washed their teeth at least once a day (538, 75.7%), while 173 (24.3%) did not. The basic evaluation found caries of one or more dental elements in 298 children (41.9%), while the remaining 413 children (58.1%) did not have evident tooth decay.

Smoking within the family was also investigated, as passive exposure to cigarette smoke is known to favor acute and chronic respiratory conditions, such as asthma and tonsillitis\textsuperscript{27-29}. The majority of parents (68.1%) used to smoke when at home; among them, over 50% smoked between 20 and 40 cigarettes per day.

Information on social integration and family habits are shown in Figure 4.

**Housing Conditions**

Questions on housing conditions investigated the availability of a house for the family, the presence of hygienic services, heating system, refrigerator, and running water.
The largest percentage of children included in our sample had a house (654, 92%), while 57 children (8%) lived in precarious housing conditions such as shelters or encampments.

A large percentage (96.1%, n=681) of children had access to basic hygiene facilities and running water. Similarly, heating was available for most of the children (688, 96.8%), while 23 children and their families (3.2%) did not have access to heating. The same percentages were found for the availability of a refrigerator for proper food conservation (96.8% vs. 3.2%). Details on housing conditions are shown in Figure 5.

**Health Status Assessment and Treatment**

A basic health assessment was performed in all children. In nearly 30% of cases, no acute or chronic pathologic conditions were found. The most common pathology diagnosed was acute pharyngitis/adenotonsillitis (160, 22.5%), followed by acute otitis media (43, 6%), gastrointestinal infection (38, 5.3%), bacterial or viral conjunctivitis (24, 3.4%), rhinitis (13, 1.8%), infectious diseases (9, 1.3%), dermatitis (8, 1.1%) and traumatic injury (6, 0.8%).

When necessary, first aid drugs were administered to children. A total of 490 drug boxes were administered; the most common was Vitamin D (143, 29.2%), followed by antibiotics (78, 15.9%), Paracetamol (73, 14.9%), Non-steroidal anti-inflammatory drugs – Ibuprofen (61, 12.4%), Iron Supplements (49, 9.8%), Aerosol corticosteroids (45, 9.2%), and probiotics (42, 8.6%). Details on common pathological conditions and administered drugs are available in Figure 6.

**Discussion**

This study evaluated socio-economic conditions, health status and family environment in children in socio-economically disadvantaged neighborhoods in the city of Rome, Italy.
The primary care services included in this study, consisting in clinics and mobile healthcare facilities used to reach poor neighborhoods, are characterized by a low-access threshold. The approach to children in these facilities embraces the definition of the World Health Organization, “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”\(^\text{30}\). Therefore, a good health status requires the interdependence between the body, the mind and society, including the person as a whole in all its complexity and with regard to the context in which the person lives. When approaching the health of an individual, and especially of a child, it is therefore necessary to transcend the strictly medical-health level and consider the whole of social, economic and cultural factors that build the subjective experience\(^\text{30}\).

Children have needs that are particularly linked to their physical and psychological development and, more than other groups of the population, they have specific housing, hygienic and nutritional needs, essential to prevent diseases that could represent a serious threat to health and affect their physical and psychological development. Based on the results of our study, the majority of children had a house and had access to basic hygienic and nutritional needs, such as heating and refrigerators. However, it should be noted that a portion of the enrolled children did not have access to these facilities, leading to malnutrition, acute and chronic diseases, and poor physical and psychological development. These children should not be left behind, also in the light of the United Nation Sustainable Development Goals that, through the pledge to “Leave No One Behind”, represent a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

Another relevant issue that we observed in our study sample was the lack of primary care paedi-
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The primary care pediatric service of the national health system represents a link between the families and the health service and guarantees access to basic levels of treatment, including continuous assistance accompanying children and their families throughout the stages of development. Children that do not access primary pediatric care may experience several problems, such as a delayed diagnosis of acute and chronic diseases, as well as that of learning difficulties, cognitive retardation, or other conditions that may have a severe impact on their physical, psychological and cognitive development. Furthermore, the absence of continuity in the medical evaluation may lead to difficulty in identifying the first signs of anomalies or in the evaluation of whether a symptom should be cause for concern or if it is something that will resolve spontaneously without further treatment.

The country of origin of the children’s parents is another focus of this study, as it represents a concrete risk for poverty. This study confirms that almost all of the children were born in Italy from foreign parents. This was largely expected; in fact, according to the 2016 Eurostat report, the risk of poverty for children in the European Union who had at least one parent with foreign citizenship was nearly 35%, almost twice as high as it was for children whose parents were both nationals (18.8%)\textsuperscript{10,36-38}. This pattern was common to all European countries except for Latvia, Poland, Bulgaria, and Hungary. The highest risk of poverty for children who had at least one parent with foreign citizenship was recorded in Sweden (58.1%), Spain (57.5%), and Lithuania (55.8%). In Italy, the risk of poverty was nearly 45% for children who had at least one parent with foreign citizenship and 23.8% for children whose parents were both nationals. Both were higher than the average of the European Union\textsuperscript{10}.

**Conclusions**

This study provided a transversal overview on several key elements of children living in socio-economically disadvantaged neighborhoods, such as demographic characteristics, availability of health services, and access to basic housing and hygienic facilities. An important point was the lack of basic pediatric assistance for a significant portion of the children, leading to possible misdiagnosis and delayed treatment for acute and chronic conditions. The other relevant finding was that a small – but still present – portion of the children did not have access to basic housing and hygienic facilities, such as heating, running water and refrigerator, leading to malnutrition, risk of development of acute and chronic diseases, and poor physical and psychological development. These children should never be left behind, also in the light of the United Nations Sustainable Development Goals. The guarantee of these needs, although expressed in international and national regulatory frameworks, is often forgotten, leading to the failure of the activity of those who should represent and defend the rights of the most vulnerable.
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Conflict of Interests
The authors declare that they have no conflict of interest.

References


