EARLY CHILDHOOD EDUCATION, THE KEY INSTRUMENT FOR TACKLING THE NEGATIVE EFFECTS OF POVERTY ON CHILD DEVELOPMENT

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Abstract: The article aims at reviewing the literature on the impact of poverty on child development and discussing issues to be done in terms of policy targeted towards vulnerable children.

As many of Romania's children are fighting the soul destroying situation of poverty, it is extremely important for policy makers to clearly understand all consequences, both from the humane, individual perspective, considering the right of every person to fulfil and maximise its own potential and also from the economic perspective, focusing on future labour market performances and quality of Romania's future workforce. Studies in behavioural economics, psychology and neurosciences offer informational inputs that might be useful in order to design the best policy approaches in terms of cost effectiveness.

Key words: poverty, child development, behavioural economics

JEL classification: A12

Poverty has been a subject of interest for many years, for researchers of different disciplines (Economics, Sociology, Anthropology, etc) and there are countless studies that approach this phenomenon from different perspectives.

The quantity of scientific material in this field demonstrates the well deserved importance given to this phenomenon, but also the fact that consistent scientific research and also political efforts could not manage to identify a panaceum to this multifaceted problem with different manifestations that affects profoundly the lives of so many people in a rapidly changing and connected world.

In the last years, the economic science has become opened to insights on human behaviour obtained through empirical research in other domains of study, especially psychology and neurosciences. This information might offer the premises for a more adequate understanding of the economic realities, in order to identify the most adequate solutions to societal problems (Frey and Stutzer, 2001). This is, mainly, the role of behavioural economics.

It is very important to integrate these elements of novelty in the research on poverty. Behavioural economics made the first steps in this direction, investigating the way in which poverty impacts on the cognitive, affective and volitional resources of the individual, and implicitly, on the decision making process. Studies show that there is an association between poverty and counterproductive behaviour that might perpetuate the scarcity situation, with less investment in education and preventive healthcare, lower productivity and higher rates of absenteeism, non take up of benefits, etc. (see Mani et. al, 2013).

In line with this approach, researchers tried to gain a clearer understanding on the effects of poverty on child development and individual's future outcomes.

Studies show that a deficit of investment in child development at an early age will have significant repercussions on the cognitive and psychosocial acquisitions of the individual, effects that will mediate later labour market performances and results.

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Child development takes place through the interaction between the genetic endowment and the environmental conditions. There is a developmental progression in orderly sequences considered to be normal, although in an unequal rhythm, with variations from an individual to another, from an area of development to another. Thus, there is an inequality of the developmental rhythm, but without fracturing the sequential construction, as any developmental acquisition is built upon the foundation of previous acquisitions.

A very elegant term used to better explain the developmental process is "nature dancing with nurture over time" (Shonkoff and others, 2012, citing Sameroff, 2010). This expression emphasises the scientifically proven fact that we are a product of a continuous interaction between our genetic inheritance and the external environment that might activate or not certain genetic predispositions.

In fact, although the human brain is characterised by plasticity throughout the life course, there are certain periods of increased neural sensitivity, maximising the impact of certain external environmental influences. Knudsen (2004) showed that early experiences can, actually, change the biochemistry of the brain, with significant stressful events imprinting the genetic structure of the individual.

Research shows that toxic stress experienced in the early years represents a significant risk factor for a number of medical conditions later in life. While a certain amount of stress is an inevitable part of life, toxic stress in childhood is defined as a consequence of "strong, frequent, or prolonged activation of the body's stress response systems in the absence of the buffering protection of a supportive, adult relationship", the most important causal factors being child abuse or neglect, parental substance abuse and maternal depression (Shonkoff and others, 2012, pg. 236).

Toxic stress experienced in early childhood is associated to brain changes such as amygdala hypertrophy, generating a hyper-responsive nervous system with a chronically hyperactivated stress response mechanism later in life, associated to an increased potential for experiencing mental health problems such as phobia or anxiety (see Roth et al., 2009). Another area in the brain affected in the exposure to toxic stress is the hippocampus, associated to potential impairments of contextual learning and memory functions. The architecture of the prefrontal cortex is also altered through the exposure to important stressors during early childhood, impairing the development of adaptive responses to stress, associated to difficulties in effectively coping with future stress. See Shonkoff and others (2012) for a detailed explanation of these mechanisms, which they conclude by assessing that "early experiences are built into our bodies" and "stress in early childhood plays an important causal role in the intergenerational transmission of disparities in educational achievement and health outcomes".

This could be one factor that might explain the identified strong association between early exposure to stressors and later difficulties in acquiring linguistic, cognitive and social skills (see Shonkoff and others, 2012).

Unfortunately, research shows that children living in poverty experience greater exposure to more severe environmental stressors than children of higher socio-economic status (Crockett and Haushofer, 2014, cited in the World Bank Report, 2015). Studies show that lack of a stable source of income is stress inducing for the adults of the household and this seems to be associated to an increased likelihood of inconsistent and unpredictable parenting behaviour (Blair, 2010, cited in the World Bank Report, 2015), thus propagating the scarcity stress to the children in the household.

All these research results may partially explain the identified differences in school readiness between the poor children and the children of better socio-economic status.

Significant gaps were identified, as early as eighteen month, between children from poor families and children of higher socioeconomic status, in terms of language processing

speed (Fernand, Marchman and Weisleder, 2013). Fernand, Marchman and Weisleder (2013) identified a 200 milliseconds difference in mental processing speed, at 18 months, between children in the lower socio-economic status group and higher socio-economic status group. The authors argue that slower processing rates are partly responsible for slower vocabulary growth in the following years. In fact, the authors observed that children with higher language processing speed at 18 months have larger vocabularies at the age of 2 and obtain better scores for standardized tests of language and cognition in kindergarten and elementary school (See: <u>http://news.stanford.edu/news/2013/september/toddler-language-gap-091213.html</u>). There is an estimated six months gap between the poor and the rich two years old children in terms of language acquisition, assessed by studying their vocabulary dimension. The authors argue that parental practices are crucial for language development, as the quality and quantity of verbal interaction between the child and the caregiver determine these differences. Language used in the presence of the child, without being specifically addressed to the child, does not help language acquisition.

It seems that there are significant differences between the practices of families from different socio-economic groups, in terms of child-directed speech that significant caregivers provide. As Hart and Risley (1995) showed in their research, children in the lowest socio-economic status group heard an average of 616 words per hour. Children in the highest socio-economic status group heard an average of 2153 words per hour. There was a difference of 30 millions heard words between the rich children and the poor children, by the age of four. Researchers also identified qualitative differences between the child-directed speech of rich caregivers and poor caregivers, with rich and middle class parents rather using questions to encourage curiosity in the child and positive reinforcement (praise), while the caregivers in poor (welfare) families rather using negative reinforcement and commands. There was an identified ratio of six encouragements for every discouragement in the interactions of children of the rich group with their caregivers. while the children of poor families received on average two discouragements for every encouragement. Researchers also found that approximately 90% of the words a child uses by the age of three are derived from their significant caregivers' vocabularies, with significant similarity in speech patterns.

Studies developed in very poor countries also show that various cognitive acquisitions of preschool children vary by wealth, although one might expect them to be uniformly low (The World Bank Report, 2015 details a study that took place in Madagascar, a country where three out of four people live below \$1.25 a day and where cognitive acquisitions, but also non cognitive skills were found to vary by wealth gradients, with the most significant variations in the field of language acquisition and executive function – referring to the ability to sustain attention and the working memory, see Fernald et al., 2011).

Research focused on school readiness also emphasized the important role of noncognitive skills for school integration and performances. The key aspect for a successful school integration seems to be the formation of the self-regulation ability (see: Blair and Diamond, 2008; Ursache, Blair and Raver, 2012). It seems that, for children living in poverty, the development of self-regulation skills, including impulse control, ability to delay gratification and exhibiting emotional control, might be disrupted by unpredictable environments and toxic stress (as shown in the World Bank Report, 2015).

The parenting styles are extremely important and research investigated parenting practices in high income, middle income and low income countries, with interesting results. Bornstein and Putnick (2012) studied, based on data from 28 developing countries, the association between parenting practices and the country's level of development, assessed through the Human Development Index, focusing on two types of parent-child

interactions - cognitive caregiving and socioemotional caregiving. Results showed that, in general, no matter the level of country's development, mothers engaged more in socioemotional caregiving than in cognitive caregiving. Yet, mothers from countries of high HDI offered significantly more cognitive caregiving activities than mothers in the low-HDI countries.

These results seem to be in line with the theory promoted by Anette Lareau (2003), who focused her research on the parenting approaches of American families and identified two main directions that were associated to the socio-economic status of the families. She observed that rich and middle class families practice the "concerted cultivation" of their children, focusing on offering numerous opportunities to their children to find and cultivate their talents, engaging them in numerous extracurricular and organised activities and offering them the space to express themselves, while the working class and poor families are rather inclined towards the "natural growth" of their children, offering a lot less of extracurricular, organised, educational activities and a lot more room for child directed play, social interaction with family members and other children. Both approaches seem to have both advantages and disadvantages, the author estimates, with middle class children being more prepared to fit in with the demands of the school, easily adapting in organized activities and environment, while working class and poor children benefitting of closer family ties and social abilities, but sometimes lacking the beneficial effects of a more consistent exposure to the demands of organized educational environment.

Longitudinal studies (the most well-known are the Perry Program, the Abecedarian Program and Chicago Child-Parent Centre) show that early age developmental gaps tend to propagate throughout life course and that early interventions have truly positive outcomes. Children with certain socioeconomic characteristics were included in educational and stimulating programs, adequate to their age, offered by specialized professionals. The parents of the children were given information on what a stimulating parenting should consist in, being taught to offer educational activities at home. Subsequently, the educational and professional trajectories of the participants in these programs were tracked for extended periods of time. A common conclusion of these studies was that, in general, the participation in this kind of intervention was associated to improved academic performances, a higher graduation rate and a lower incidence of behavioural problems, comparing to control groups. When reaching adulthood, the participants obtained better results on the labour market – higher earnings, shorter periods of time in social assistance, etc (see: Cunha et al., 2006; Heckman, 2008; Cunha et al., 2010; Cunha and Heckman, 2008).

Thus, these longitudinal studies show that access to high quality early education is crucial not only for school achievement, but also for later higher quality of life, healthier adult lifestyles associated to improved health outcomes and improved labour market performances. It is clear that, in the light of these results, a key poverty reduction policy could focus on significant investments in early care and education programs, particularly for children at risk - whose parents have limited education and low income (see: Cunha et al., 2006; Heckman, 2008; Cunha et al., 2010; Cunha and Heckman, 2008).

In fact, presently, data analysis converges to the conclusion that "early childhood development (ECD) is one of the most cost effective investments a country can make to build human capital and promote sustainable development. Economic analyses from both the developed and developing world point to the same conclusion: Investing in the early years yields some of the highest rates of return to families, societies and countries" (UNICEF Brochure, pp. 2, citing Britto, Engle and Super, 2013).

There are different ways of directing this investment.

Cash transfers to the families are usually used. They have positive effects on multiple levels – they reduce the scarcity induced stress in the household and they free

parental mental resources that can be oriented to the needs of the child, while also offering a chance to improving the child's life quality through better nutrition, an improved housing situation, etc. As studies show (Mullainathan and Shaffir, 2013), poverty imposes a cognitive tax on the individual as scarcity and the problems brought by it capture the attentional resources. This may transfer, with negative effects, on parenting practices and the child-parent relation.

Conditional cash transfers towards families with children represent another possible answer to the problem. Families receiving conditional cash transfers are obliged to comply to certain demands, thus make some behavioral changes.

Conditional cash transfers function on two directions: 1) immediate poverty reduction – through the receiving of cash, 2) long term poverty reduction through human capital development, defined as investing in a person's health, knowledge and skills. (Janvry, Sadoulet, 2006 cited in Fernald, Gertler and Neufeld, 2008, pp. 2)

Fernald, Gertler and Neufeld (2008) showed that children in households that received cash transfers had improved outcomes in terms of both health and development. Their research focused on children in low-income communities, in Mexico, and the authors observed that children in households receiving higher cumulative cash transfers performed better on a scale of motor development, three scales of cognitive development and a scale assessing the receptive language.

Yet, other studies assessing the impact of conditional cash transfers on child development identified only modest positive effects. In a study that took place in rural Ecuador, children in the poorest households eligible for transfers had outcomes that were on average more than 20 percent of a standard deviation higher than those for comparable children in the control group (Paxson and Schady, 2010). Positive effects could be identified both on a physical level, but also on a cognitive and socio-emotional level, with larger effects for the poorer children than for less poor children. Girls and children whose mothers had a higher level of education seemed to benefit more in this intervention. While the participants in the program benefited of improved nutrition, they did not seem to benefit of preventive healthcare services more than controls and the parenting practices of their mothers did not improve.

Yet, other studies assessing the impact of conditional cash transfers show that although their effects were modest, they persisted two years after the beneficiaries exited the program (see Macours, Schady and Vakis, 2012) and this is very important as it implies that positive behavioural changes have been made.

Another direction focused on the psychological elements behind parenting practices and behaviours – values, attitudes, beliefs, thus mental models. It has been shown that many parents are convinced that cognitive attributes and socio-emotional skills are innate and immovable, thus they cannot influence the development of their children no matter what they may or may not do. This belief may be associated to a lack of motivation for investment in their children's development, be it financial or temporal - through parentchild activities that promote the acquisition of cognitive and socio-emotional skills. The World Bank Report (2015) presented the results of an intervention program, focused on changing parental mindsets, that took place in Senegal (the "Renforcement des Pratiques Parentales" Program, of the Tostan NGO). The program's aim was to help parents understand the importance of early verbal engagement for the brain development of their babies. The parents were taught how to interact to their children in a beneficial way for their development: speaking to them using a rich and complex vocabulary, asking the children questions, telling them stories, describing objects in detail to them, etc., while in the same time clarifying to the caregivers that there is, in fact, a scientifically proven link between verbal engagement and the development of a child's brain, thus offering them the motivation to changing their beliefs and, subsequently, their parental practices.

A follow-up study that focused on lifelong effects of very early intervention (children below the age of two when entering the program) that consisted in giving the mothers all necessary information in order to empower them to be able to offer stimulating, high quality interactions to their children, showed that positive effects were identifiable 20 years later, in labour market outcomes (Gertler et al., 2014). Thus, it seems that changing beliefs of the parents and, subsequently, their parenting approach can have significant and long term effects on children's education and earning outcomes.

Why is this important for Romania?

In 2014, 39.5% of Romanian children (younger than 16 years) were at risk of poverty and social exclusion, while the EU28 average for this indicator was 24.4%. Bulgaria had a slightly higher value for this indicator, while all other EU28 countries were in better positions from the point of view of children confronted to the risk of poverty. Undeniably, the situation has improved in the last decade as this indicator has reduced by 10 percentage points, from 47% in 2007 to 37.3% in 2015.

Yet, it is clear that many of Romania's children are fighting the soul destroying situation of poverty and it is thus extremely important for policy makers to clearly understand all consequences, both from the humane, individual perspective, considering every person's right to fulfil and maximise its own potential and also from the economic perspective, focusing on future labour market performances and quality of Romania's future workforce. As most of the poor children in Romania live in rural areas, key investments should be made in ensuring accessible, high quality early care and education targeted accordingly. Traditionally, in Romania the children under the age of three received mainly care in nurseries, without emphasising the role of education at this point, as before 2011 nurseries where under the responsibility of the Ministry of Health and the services where mainly provided by nurses (see the Summary Report of the PLA on Early Childhood Education and Care in Bucharest, 18-20 March 2013 for a detailed analysis of the development of ECEC policies and services in Romania). After 2011, the new legislation in the field of education included this age group, establishing a curricula and educational targets. As for the kindergardens, the national enrolment rate has been rising in the last decade. There is a difference in enrolment between rural and urban kindergartens, as statistical data shows, with significantly lower enrolment in the rural areas. Yet, as studies show, these children are, actually, the population that would mostly benefit from early education.

A study focusing on the specificities of early education in Romania concluded that "in Romania, the interest in early childhood education and care (ECEC) has increased significantly in the last decade. But for the age group 0-3 years we cannot speak about a functional system of ECEC services, a major deficit being identified regarding the number of existing units, as well as human resources within these units." (Matei, 2014, pp. 117)

Conclusions

Recent advanced research in neurosciences and psychology allowed for an in-depth understanding of human development, underlining the fact that the early years are crucial in this construction and that adversity experienced in childhood imprints in the brain. Poverty puts children at risk of experiencing toxic stress, with negative effects on health and development, but also creates the context of a less stimulating environment. Consequently, there is an identifyable gap between poor children and children of higher economic status, in terms of cognitive skills (mostly language aquisition), but also noncognitive skills, such as self control. This translates into a gap in school readiness. And, as skills are built upon other previously aguired skills, it make it harder for these children to adapt to the rutines of the school and to integrate new knowledge in the rythm imposed by the educational process, as they build their learning on weaker foundations. The gap, thus, continues to manifest throughout lifecourse, with consequences such as lower educational attainment, worst labour market outcomes and higher dependency on social assistance. Longitudinal studies show that early interventions have truly positive outcomes. A common conclusion of these studies was that, in general, the participation in this kind of intervention was associated to improved academic performances, a higher graduation rate, and a lower incidence of behavioural problems, comparing to control groups. When reaching adulthood, the participants obtained better results on the labour market - higher earnings, shorter periods of time in social assistance, etc. In fact, it is now accepted that the investment in early childhood education and care is the most efficient and cost-effective. with better outcomes than all other education and training programs designed for vulnerable individuals in other age groups. This investment may be oriented towards conditional cash transfer programs that involve transferring money to the poor, if they comply to certain behavioural demands, such as participation in education or preventive healthcare programs. Studies show that the behavioural changes promoted through this kind of policy mediate the maintenance of positive effects long after the termination of the program. Demonstrated positive effects are also obtained through parental education, focused on changing the mental models of parents concerning their abilities to influence the developmental outcomes of their children and, consequently, their parental practices, towards building a more stimulating home environment for children.

This is extremely relevant for the Romanian situation as there is a recognized deficit of the early education and care services, in terms of their availability, especially for the most vulnerable children, and also in terms of human resources within the system.

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