Quarantine emotions: investigation of the impact of Covid-19 in preschool children. Analysis for a psycho-pedagogical proposal.
Emozioni in quarantena: indagine sull'impatto del Covid-19 nei bambini in età prescolare. Analisi per una proposta psicopedagogica.

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Abstract
This research investigates and analyses the emotional, social, and relational responses and attitudes put in place by children in order to react to the health emergency caused by the spread of Covid-19. Moreover, this study aims to develop an educational intervention tool that can be available to teachers at the resumption of the school year. The focus of this article is related to the disclosure of the data collected, the analysis that has been carried out so far, and the guidelines for a planned educational intervention proposal. The research involved a sample of 50 children from 3 to 6 years old linked to different kindergartens in the Italian territory. This group, as a matter of fact, was subject to less consideration by the institutions. The study, therefore, seeks to understand the psychophysical state of

the children in quarantine through psychometric tests that have evaluated the ability to recognize emotions and the Theory Of Mind (TOM) which was enriched by a survey built ad hoc to assess the perception of children in relation to the current health emergency. The administration was carried out electronically, respecting and protecting the privacy of minors.

Keywords: COVID-19, emotions, TOM, quarantined children, didactics and psycho-pedagogical method

Abstract

La ricerca indaga ed analizza le risposte a livello emotivo, sociale, relazionale e gli atteggiamenti messi in atto dai bambini per reagire al periodo di emergenza sanitaria conseguente al Covid-19. Il presente studio si pone l'obiettivo di elaborare uno strumento d'intervento educativo da mettere a disposizione degli insegnati alla ripresa dell'anno scolastico. Il focus di questo articolo è relativo alla divulgazione dei dati raccolti, all'analisi effettuata ed alle linee guida per una proposta d'intervento educativo progettato. La ricerca ha coinvolto un campione di 50 bambini dai 3 ai 6 anni, legato a diverse scuole dell'infanzia del territorio italiano. Questa fascia, infatti, è stata soggetta ad una minore considerazione da parte delle istituzioni. Lo studio cerca di comprendere lo stato psicofisico dei bambini in quarantena attraverso dei test psicometrici che hanno valutato la capacità di riconoscimento delle emozioni e la TOM che è stata arricchita da un'indagine costruita ad hoc per valutare la percezione dei bambini in riferimento all'attuale emergenza sanitaria. La somministrazione è avvenuta in via telematica, nel rispetto e nella tutela della privacy dei minori.

Parole chiave: Covid19, emozioni, TOM, bambini in quarantena, didattica e metodo psicopedagogico

Introduction[1]

A preliminary study conducted in Shaanxi Province during the second week of February 2020 – which was approved by the local authorities – showed that the most common psychological and behavioural problems among 320 children and adolescents (168 girls and 142 boys) aged 3-18 were clinginess, distraction, irritability, and fear of asking questions about the epidemic. Moreover, the probability that older children were more likely to manifest symptoms – such as clinginess, restlessness, and fear – was higher than the possibility that family members could contract the infection (P = .002). Attachment, inattention, and irritability were the most severe psychological conditions demonstrated by the children in all age groups (Jiao, Wang, Liu, Feng Fang, Jiao, Pettoello Mantovani, Somekh, 2020). Even children younger than 2 years of age noticed the absence of regular caregivers (e.g., grandparents), too, and thus became unsettled and upset, looking for their return. Conversely, children and adolescents' anxiety could also manifest in challenging externalising behaviours, such as acting out or arguing, and, also, more typically, they assumed tearful, sad, or worried responses. (Dalton et al.,2020)

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[1] The manuscript is the result of a collective work of the authors, the specific contribution of which is to be referred to as follows: introduction paragraph 5 and conclusions are attributed to Francesco Peluso Cassese; paragraphs n. 1.1 and 2.3 are attributed to Martina Gramiccia and Elèna Cipollone; paragraphs 1.2, 2.1, 2.2, 2.4, 3, 4, 5 are attributed to Stefania Morsanuto

Disease-containment measures such as quarantine and isolation can be traumatizing to a significant portion of children and parents. Criteria for PTSD (Post Tramautic Stress Disorder) were met in 30% of isolated or quarantined children based on parental reports, and 25% of quarantined or isolated parents. These findings indicate that pandemic disasters and subsequent disease-containment responses may create a condition that families and children find traumatic. Since pandemic disasters are unique and do not include congregational sites for prolonged support and recovery, they thus require specific response strategies to ensure the behavioural health needs of both children and families. Pandemic planning must address these needs and disease-containment measures should also protect the physical and mental health of the quarantined population (Sprang et all., 2013).

The COVID-19 pandemic creates a stressful environment for families through many channels, such as worries about the health of family, pressures of having to go out to work, stress of having to arrange work from home, fear of potential unemployment and lost income, and other consequences of living through a pandemic. Additionally, children's schooling become now their parent's responsibility, and the level of help schools provide is likely to vary widely from school to school. Clearly, how much parents can help their children in keeping up with their education outside school varies widely across families, as do the resources given to parents by their child's school (Moroni et al. 2019). The uncertainty about the personal and global effects of COVID-19 is creating great concern – in addition to the specific psychological effect of quarantine (Brooks et al., 2020). Consequently, adults' preoccupation with the implications of COVID-19 might compromise their ability to sensitively recognise and respond to children's cues or distress (Stein et al., 2009). Thompson et al. (2020) found a significant correlation between social isolation and an unhealthier lifestyle in parents with adolescent children, which also negatively influenced the lifestyle behaviours of their adolescent children. The measures suggested by Chinese paediatricians to parents and family members included increasing communication with children to address their fears and concerns, playing collaborative games to alleviate loneliness, encouraging activities that promote physical activity, and using music therapy in the form of singing to reduce the worry, fear, and stress that the child may feel (Jiao, Wang, Liu, Feng Fang, Jiao, Pettoello-Mantovani, Somekh, 2020).

Goldschmidt et al. (2020) report that caregivers are essential in helping children maintaining emotional well-being. Throughout the pandemic, caregivers were encouraged to reassure children that the adults they trust (e.g., doctors, nurses, police, teachers) are doing everything they can to learn about the disease to help keep them safe (American Academy of Paediatrics 2020). Moreover, caregivers can give children a sense of control by letting them know what they can do to help limit the spread of the virus (e.g., washing their hands, coughing and sneezing into their sleeve or a tissue, etc.). The CDC (Centre for Disease Control and Prevention, 2020) recommends caregivers to watch over children for signs of stress. Children can exhibit stress and anxiety with excessive worry, sleeplessness, inability to concentrate, and unhealthy eating habits. Caregivers can help alleviate stress by keeping calm, creating a daily routine, and talking to children about COVID-19. Reducing children's exposure to COVID-19 television and social media coverage can also help to provide a relaxed and reassuring environment (AAP - American Academy of Pediatrics, 2020; CDC - Centers for Disease Control and Prevention, 2020).

Since children are vulnerable to environmental risks, and their physical health, mental health, and productivity in adult life is deeply rooted in their early years, close attention and great efforts are

required to address these emergency issues effectively and avoid any long-term consequences in children. (Wang et all., 2020). It is the responsibility and keen interests of all stakeholders – from governments to parents – to ensure that the physical and mental impacts of the COVID-19 epidemic on children and adolescents are kept minimal. Although overexposed, it seems appropriate to define emergency pedagogy guidelines and investigate the emotional impact on children during this pandemic period.

Through the research described, linked to the period of social isolation, due to Covid-19, the concern of the scientific community and above all the malaise of the children are shown, but not, specifically, its link with the emotional component and the ability to mentalization of the experience.

The research question is therefore to understand whether pandemic and quarantine have brought about changes in the skills of mentalization and recognition of emotions in children between 3 and 6 years of age. Two samples (S01 – formed by two parts – and S02) of the cognitive domain linked to the social perception of the Nepsy-II psychometric battery were administered synchronously to a sample of 50 children. Through these tests, the identification of facial expressions and the ability to decode and interpret the intentions of others, their points of view, and understand how these influence behaviours is assessed. The ultimate goal is to draw up educational guidelines that can guide professional figures to manage post lock-down.

1. Framework

1.1 Trauma neuroscience

A recent study has highlighted that even a stressful or traumatic event can lead to specific consequences at the cerebral level, causing alterations of neuroanatomic correlates and functional impairment over time (Musazzi L., et al., 2017). It has also been shown that children do not necessarily have to directly experience the traumatic event, but they can develop a stress disorder even if they witness a traumatic event that is happening to others or that happened to a family member (Roccella M., 2020). The structures underlying the elaboration of fear and trauma, which are therefore the most affected ones, are the hippocampus, the amygdala, and the medial prefrontal cortex. Furthermore, a Magnetic Resonance Imaging (MRI) study demonstrated that children's exposure to traumatic events caused by early adversity led to an abnormal development of the amygdala and of the limbic system (Tottenham, 2010). The hippocampus is also a structure strongly involved in the processes of declarative memory and specifically deals with the management of learned fears, as it is the seat of "fearful" memory. There has been a reduction in its volume, probably caused by repeated exposure to increase glucocorticoid levels. This deficit in hippocampal activation, during verbal declarative memory, leads to a reduced ability to formulate adequate responses to stress (Marek, 2018; Lacagnina et al., 2019). Immediate emotional responses, activated by children when confronted with traumatic events, can be recognized in distress, fear, anxiety, terror, all obviously mediated by the gravity of the event. Alongside these more evident emotional responses, a wide range of physical symptoms can be recognized: somatic symptoms, such as frequent headaches, nausea, eating disorders, regressive behaviour, sleepwalking, insomnia (Soavi G., 2012) and non-somatic, such as increased levels of cortisol, adrenaline and decreased immune defences (Cimbro C., 2006).

1.2 Pedagogy of the emergency

What environmental (geo-physical) catastrophes have in common with the current pandemic are precisely the educational needs that we can detect in the affected communities. They are located both in the informal and implicit dimensions of education, as well as in the formal and institutional ones. In public opinion, the perception of the emergency, however, often limits itself to the idea of first aid, safety, assistance, and psychological support to the population. Children and adolescents are portrayed in the freeze-frame of representations that are limited to the "here and now" of the catastrophe and its immediate consequences. The image of the catastrophe that narrows the perception of the sense of emergency to a few dimensions of intervention is superimposed on the idea that it is a process of short duration and limited in time (Vaccarelli, 2017), as demonstrated by the social behaviours that could have been observed at the end of the lockdown.

On the contrary, however, we could say that like any other catastrophe, the pandemic, despite being a slow onset disaster with clear warning signs (Occhetti, 2018), cannot be resolved in the disastrous event itself and in the immediate assistive and remedial intervention, but, rather, it continues to be devastating in its effects on the material and immaterial dimensions of society.

Although preparations and preventative actions can be undertaken in the slow-onset disaster before it becomes a real disaster, the impact on the affected society can be intense and take much more time to recover (Occhetti, 2018).

Unlike psychological intervention built on knowledge and practical experience within a commonly recognized epistemological status, and focused on the individual, one of the fundamental tasks of the pedagogist and the emergency educator is to be a bearer of personal and professional resilience in order to put colleagues in the same conditions, and, through this support, to become in turn "resilience guardians" to the educators (Cyrulnik, 2005). We are thinking in the medium and long term, in the perspective of post-emergency. The support can take place through training, pedagogical counselling, commonly addressed problem solving. The educational action can, therefore, encourage the construction of a legacy of skills such as to give autonomy to educators, teachers, social workers, but also parents, who are fundamental figures in the work of educational care (Vaccarelli, 2017). The educational approach is centred on the idea of empowerment and must be considered as the basic principle of the whole project, since what we want to leave to the territory and the community is not only the "memory" of educational actions, but a base of experiences and skills to be used and deepened autonomously even in post-emergency period (Vaccarelli, 2017).

Through the emergency, the equilibrium of society is destabilized. The term "emerge", from the Latin ex-mergere, going out, arise, describes at a semantic level both the catastrophic event and the holding capacity of a system through its reactivity (Isidori, Vaccarelli, 2013) which is measured as the capacity to re-establish in the short term the conditions of security and, in the medium term, the conditions to reach a new state of equilibrium. It should be borne in mind, however, that the previous modalities that had passed to stability may no longer be adequate or sufficient.

As Isidori and Vaccarelli (2013) point out, emergency pedagogy can be offered in various ways. It can be *reflective*, if it goes into categories such as risk, uncertainty, sense of precariousness of existence, trauma, stress, resilience, and resistance. It is *exploratory* when it analyses needs through empirical research; and it is *critical* and *transformative*, since it works so that the new balance is democratically and participatory from below, in such a way that everyone is part of the processes that concern

common interests. Pedagogy also has an operational and methodological function, since it studies and applies useful models for primary and secondary prevention and identifies educational actions and best practices to deal with crisis situations.

In this perspective, pedagogy can be a key science in at least three areas:

(1) that of risk prevention and education (which has been little explored), that enables learners to reflect on their own thinking operations and to gradually acquire a methodological and instrumental patrimony that gives them a mental *habitus* capable of progressively processing the data of experience in an increasingly effective and autonomous way (Occhetti, 2018)

(2) that of emergency management, which contextualizes the theme of educational care (Fadda, 2002; Palmieri, 2000) both in the individual and community panorama, orienting its actions to resilience (Contini, 2009; Mantegazza, 2000).

(3) The last area is linked to the management of the post-emergency, which often runs the risk of presenting itself as a chronicisation of the emergency phase.

2. Research

2.1 Research hypotheses

The present study aims at investigating the ability to understand mental constructs and the fact that others have their own thoughts, ideas, feelings that can diverge from ours, and it also aims at understanding emotions through the recording and analysis of emotional, social, relational, and attitudinal responses put in place by children in order to react to the emergency period following Covid-19. The research question is to understand if a sudden and prolonged lockdown period has led to significant changes related to social perception in children. Based on the results of the data analysis, the aim is to develop the foundations for providing an educational intervention tool that can be available to teachers at the resumption of the school year.

2.2 Method

Given the particular emergency situation relating to the pandemic, it was decided to develop a tool that could be comfortable and could easily reach families in quarantine. An online tool has therefore been developed that can be disseminated through the web. The domains relating to the social perception of Nepsy-II have therefore been reported entirely on the Google Modules platform. The administration took place in the presence of a collaborator of the Heracle Research Laboratory.

In order not to influence or intimidate the children, it was decided to have the test administered to the parent. An initial telephone contact made it possible to provide a brief introduction to the test and to make an appointment to carry it out. Parents were asked to open the video call in the absence of the child, in order to provide some basic instructions to not influence the test. After any questions from the parents, the administrator closed their audio and video and the parent minimized the call screen: in this way the child did not know that there was an external administrator and therefore perceived a lower level of anxiety and stress.

Subsequently, the parent proceeded to the autonomous administration of the test, reading the questions to the child and allowing him to answer spontaneously. A small break was allowed if the child had experienced particular tiredness. Finally, the parent sent the test, dismissed the child and provided some feedback to the examiner. During the whole duration of the test, the examiner proceeded to

compile an observation grid about the child's reaction modalities (excessive tiredness or reaction related to the Covid-19 related item) and about any influences, interferences from the parent or external variables. A consent form and information sheet were provided to all participants. Informed consent was negotiated with the children involved and re-negotiated during the time the research was carried out. Pseudonyms have replaced the names of participants. Participants (including child participants) were given the opportunity to withdraw from the study at any time.

2.3 Tools

During the lockdown Covid-19, two tests of NEPSY-II have been administered.

The NEPSY-II is a battery of psychometric tests, which provides a neuropsychological evaluation of the cognitive abilities of subjects from 3 to 16 years of age, in relation to specific cognitive domains.

The tool allows both a global assessment and a survey aimed at one or more domains and is able to ascertain cognitive abilities or typical disorders generally diagnosable for the first time during childhood. The NEPSY-II therefore enables accurate diagnosis and planning of the interventions necessary for recovery for full functionality at school and at home (Urgesi, Campanella, Fabbro, 2011).

The tests used are those related to social perception. They are aimed at evaluating two fundamental skills of perception and social cognition: The recognition of emotions through facial expressions and the ability to decode and interpret the intentions of others and their points of view and understand how these influence their behaviour. Specifically, there are two domains. (1) S01 TOM (test related to Theory of Mind) is in turn made up of two parts that evaluate different aspects of the ability to understand mental constructs (beliefs, intentions, deceptions, emotions, fantasy, fiction) and the ability to understand that others they have their thoughts, ideas, feelings that can diverge from ours (Morsanuto, Cipollone, Peluso Cassese, 2019). Various scenarios are read to the child, or figures are shown, then they are asked questions that require understanding the other's point of view. The second part is non-verbal and assesses the ability to understand how emotions connect to a social context and recognize the appropriate mood that the various social contexts presuppose. They show the child a figure that represents a certain social context and is asked to choose a photo – out of four possibilities – that depicts the correct mood of one of the people in the images (Urgesi, Campanella, Fabbro, 2011).

To this domain has been added one built in exactly the same way, which however depicts a situation in the state of Covid-19. The scene represents two parents from behind who are arguing and sitting in the living room. In the background you can see the television with the image of the virus. In the foreground, a child spies on his parents.

(2) Test S02 Recognition of emotions. This test assesses the ability to recognize emotional expressions through photos of children's faces. The test consists of four tests that increase in difficulty (Morsanuto, Cipollone, Peluso, Cassese, 2019).

As specified, given the emergency situation, the tests were administered to children online, in the presence of their parents. We therefore deemed it necessary to develop an observation form, compiled by the administrator, which monitored the behaviour of the parents and the reactions of the children during the test. The form is made up of six items related to the parent's interaction mode (influence or otherwise of responses, proactive attitude) assessed on the basis of the Likert scale, a psychometric attitude measurement technique that is mainly distinguished by the possibility of applying methods of item analysis. For each item, an agreement/disagreement scale of 5 was presented (from 1 = never to 5

= always). We chose to follow a bivariate analysis of the form where scores 1 and 2 are equivalent to NO (they do not interfere; they have a proactive attitude to the success of the test). 3, 4 and 5 YES (intervene in the execution of the test).

2.4 Sample

In this study will be given particular attention to the sample linked to childhood (3-6). The sample is made up of 50 children from the same Italian territory. The control group is made up of 23 children of the same age. Sample and control group come from the same geographical area (Lombardy), come from similar socio-economic conditions and started the lockdown in the same period. The total sample is made up of 73 children. This category of younger people was subject to less consideration by institutions.
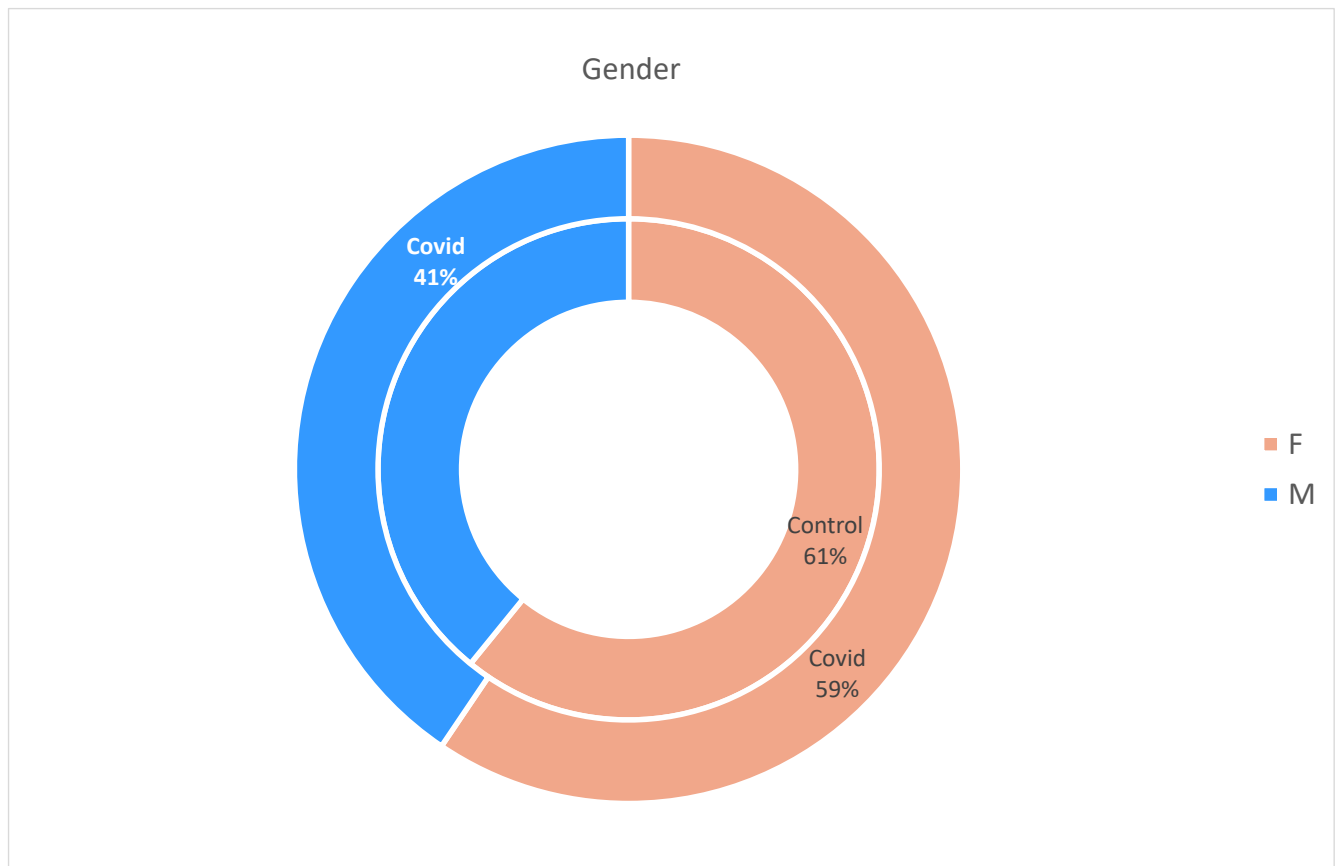

Figure 1 gender of the sample in relation to the control group

The Italian standardization of Nepsy-II (like the national versions of the other countries) reports the conversions divided by gender. The assumption is that gender can explain only a small percentage of individual differences in neuropsychological development. In the general assessment of Nepsy-II test performance, the gender of the child is not typically considered. In some situations, however, in conditions of performance bordering on expected values, it may be interesting to consider gender values. Specifically, in the "Social Perception" domain, the female group had higher scores than the male group in the TOM test (S01), but not in the Recognition of emotions test (S02). (Urgesi, Campanella, Fabbro, 2011). The gender compensation of the two tests in the same domain led to the choice not to decline the data by gender, but to analyse them in the complexity of the sample.

3. Data analysis

As already specified, social perception is the part of cognition that allows the processing of social information concerning individuals or groups in different contexts, and it also allows to interpret non-verbal communication in order to decode the behaviour of others and thus to infer intentions and motivations.

3.1 S01 TOM (Theory of Mind)

This test divided in two parts evaluates the understanding of mental constructs and the ability to comprehend how emotions connect to a context. It also assesses the ability to recognize the appropriate mood related to a given circumstance.
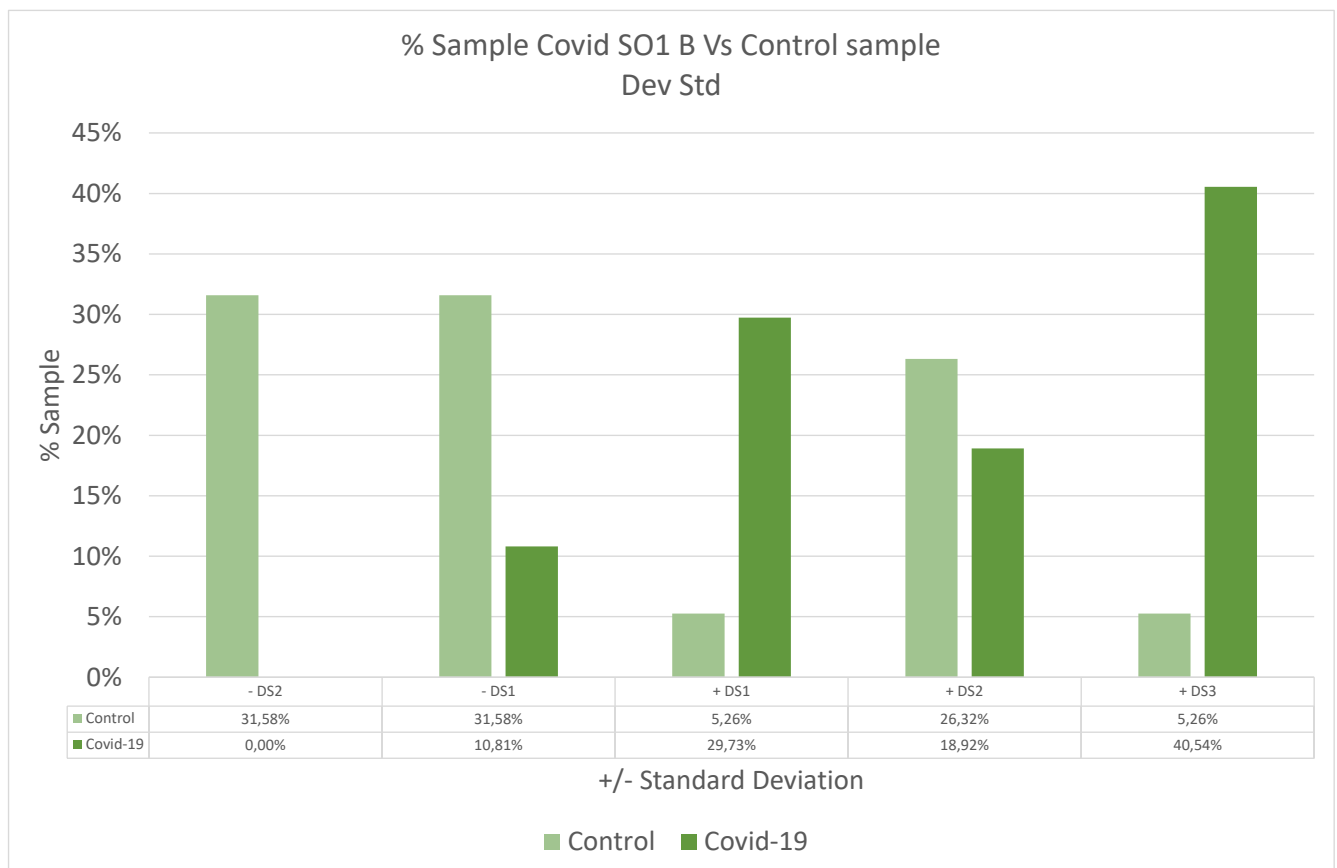

% Sample Covid SO1 B Vs Control sample Dev Std

	- DS2	- DS1	+ DS1	+ DS2	+ DS3
Control	31,58%	31,58%	5,26%	26,32%	5,26%
Covid-19	0,00%	10,81%	29,73%	18,92%	40,54%

+/- Standard Deviation

■ Control ■ Covid-19

Figure 2 reports the comparison of the standard deviation of the data collected from the sample during the pandemic lockdown and the control sample

The standard deviation gives an idea of how the sample data are distributed with respect to the national reference average (validation). It allows to know if the average is reliable to give a meaningful representation of the data. As can be read from figure 2, the data collected during the Covid-19 period are in higher ranges than the average. The control sample shows, however, lower values.
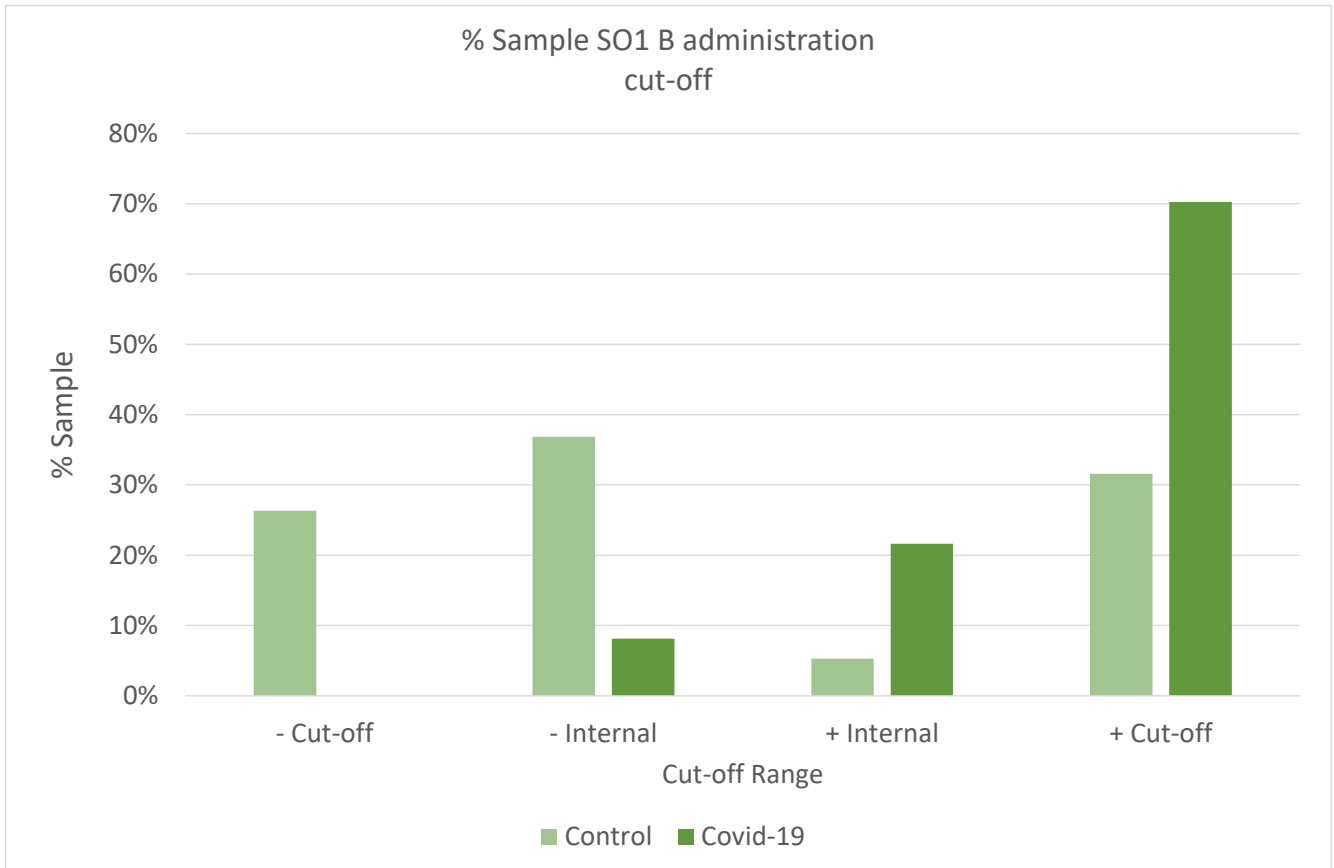
Figure 3 Cut-off from administration of the S01b test during the pandemic compared to the control sample

For the evaluation of the additional scores, it is necessary to compare the raw score obtained in the tests by the children with the distribution of the scores in the reference regulatory sample. The cut-off value is provided as an example of this comparison. The raw scores of children in the range of values defined by the cut-off indicates a frequent performance in children of the same age. The raw score of children outside the cut-off range indicates an non-standard performance in children for the specific age. The analysis is also used to qualitatively specify the performance profile (Urgesi, Campanella, Fabbro, 2011).

As can be seen from Figure 3, in comparison with the control group (during unsuspected Covid-19 times), only 30% of the results remain within the average – set by age. The remaining 70% indicates skills related to the ability to understand that others have thoughts, ideas, and feelings that can diverge from ours, and this value clearly indicates that this range is higher than the normal abilities of children in reference to age. Moreover, no lower level is present in the chart. Consequently, all the data are distributed within the cut-off interval, or are outside positive.
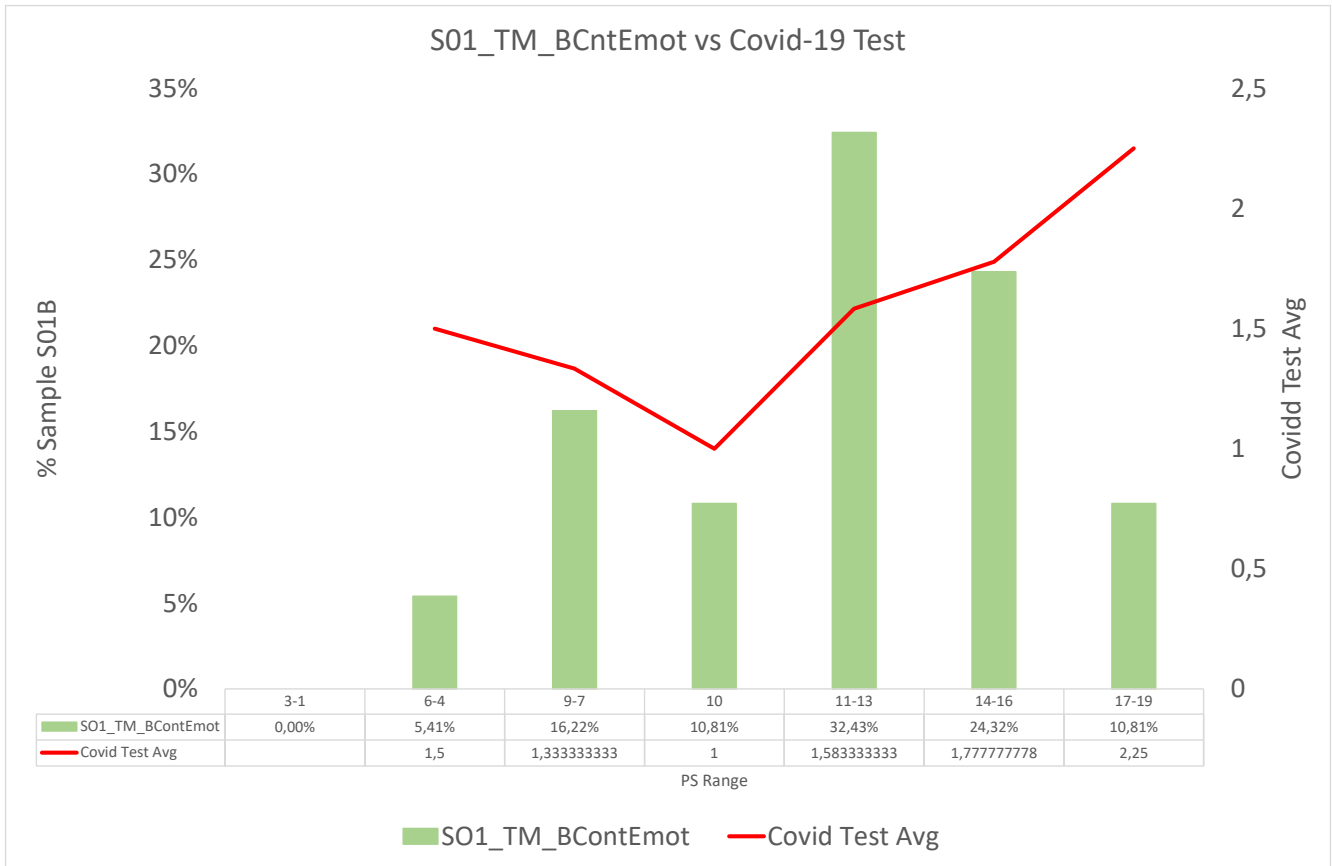
Figure 4 Relationship between the TOM S01 test and the avarege (Avg) of Covid-test built specifically for the pandemic

Figure 4 attempts to compare the results obtained by children with the S01b test which included built *ad hoc* items relating to the Covi-19. The aim is to try to understand if there was congruence between the two tests. As a matter of fact, the results obtained clearly show compliance.

In the following graphs, the objectives investigated in section B are combined with those of the first part (A) assessing different tasks of the TOMs. Children from the age of three are able to understand that if a person sees something, he or she has information related to that situation (*seeing is knowing*). Four-year-olds are able to understand that different people may have different beliefs or thoughts related to the same situation. Thus, they are able to understand the meaning of abstract words that refer to mental states. In addition to this, at this age, children know that reality can be different from its appearance. From the age of four, children begin to develop *first-order inference* (i.e. they infer on what a person is thinking) and *second-order inference* (i.e. they infer what a person is thinking about a third party's mental states). This competence leads children not only to understand, but also to practice deception (*bluffing*). From 3-4 years of age, children understand that, if between two people the first has a desire and the second is already implementing the "desire", only the latter really realizes the action (*physical-mental distinction*). The last observed skill is linked to *figurative language*, which is, for example, the ability of understanding metaphors.

The evaluation of any deficient result in these tasks must take into account the condition in which the test was carried out. It should be noticed that the analysis has no diagnostic purpose.

A low score in part A coupled with a score in the norm in part B might suggest that the child developed a standard level Theory of Mind, but, at the same time, he or she presents difficulties when processing

language. Children who show a good performance in TOM, but lack in the recognition of emotions, could indicate a good ability to take the points of view of others even if they are not able to understand their emotions.
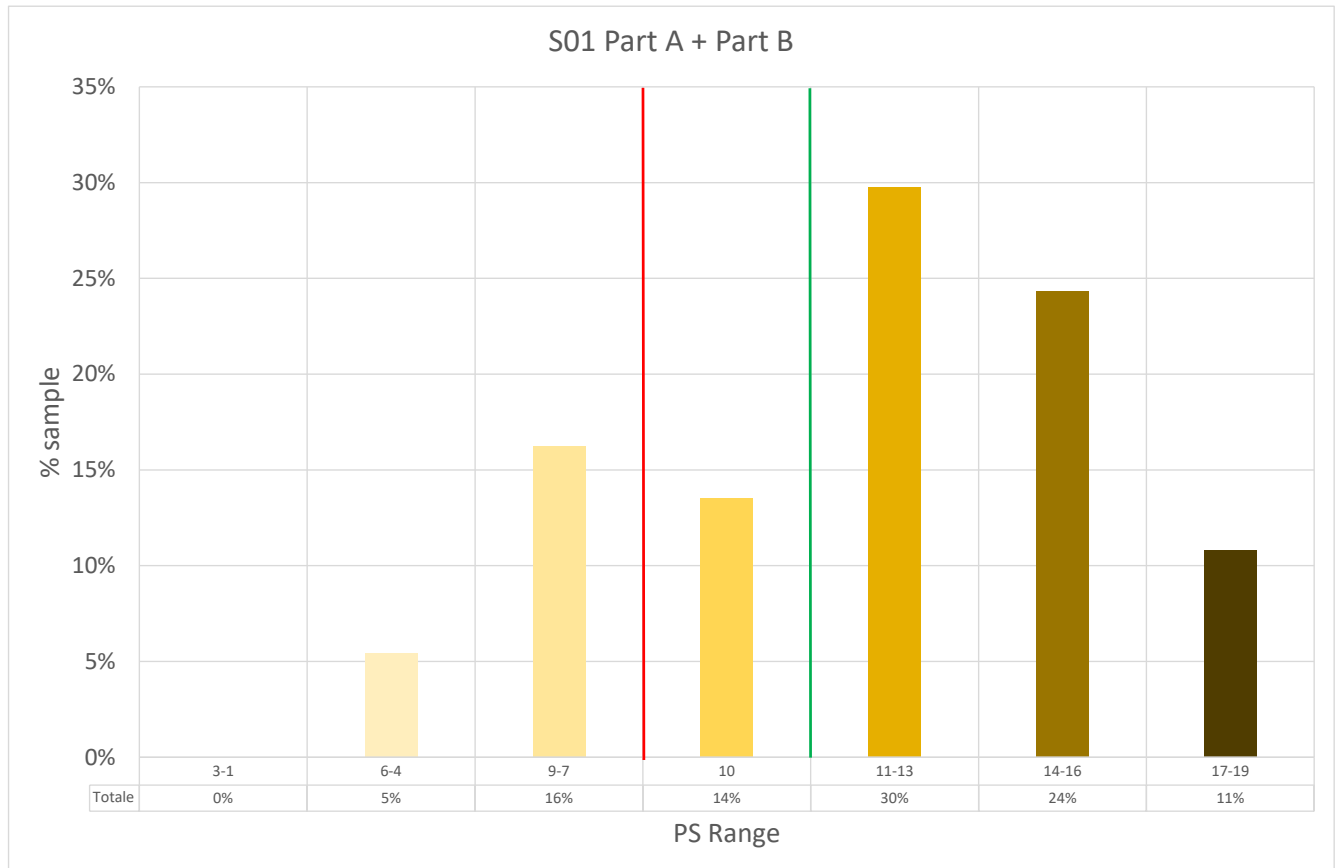

Figure 5 Total sum of the values relating to the two tests S01 part A + B

Figure 5 shows the total progress of test S01 (Theory of Mind). 14% of the sample obtained an average age value. 30% exceeded the reference range and 35% achieved significantly above average values. Only 21% is a deficit. It should be noticed that there are no seriously deficient values.
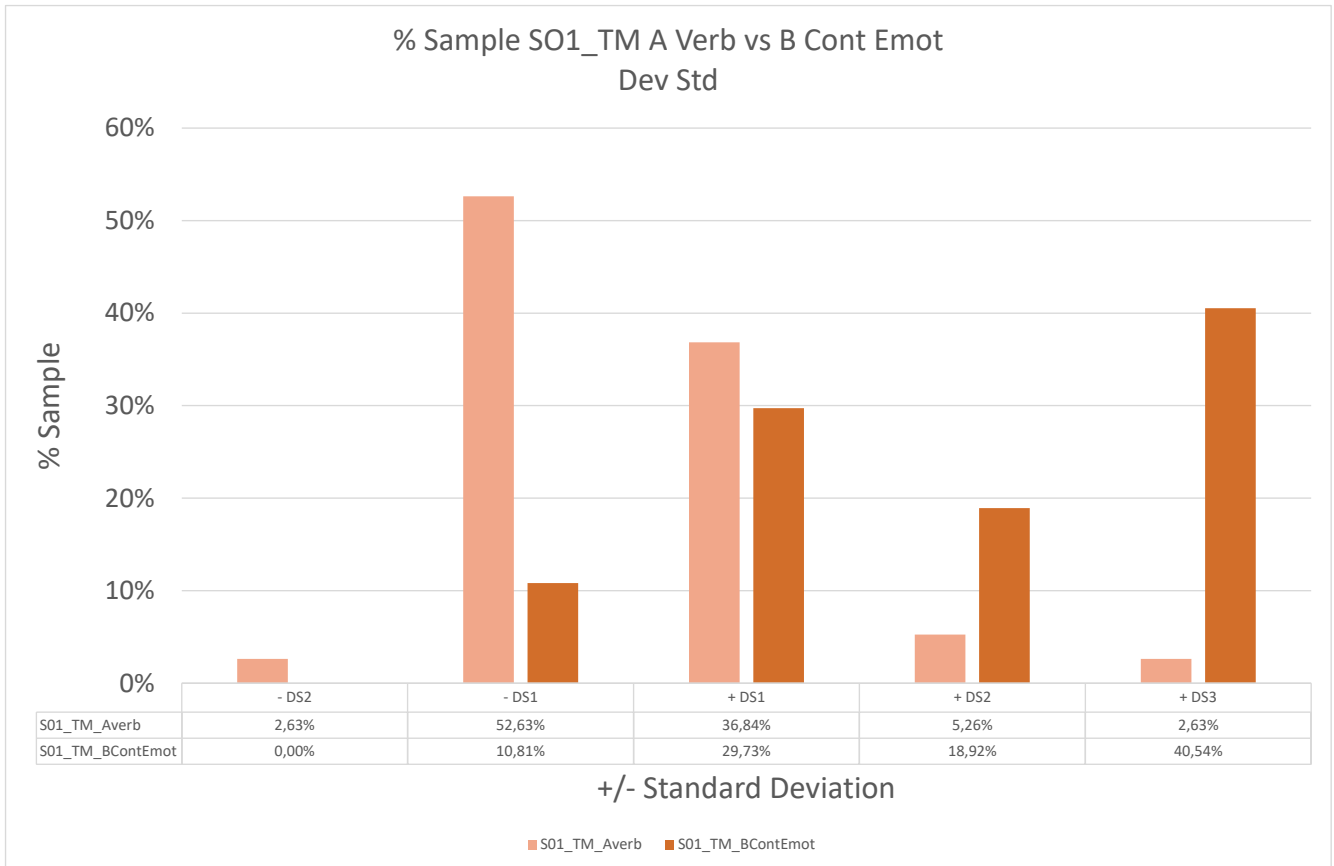
Figure 6 Confront between the part A and B of Test S01 TOM

Figure 6 describes the standard deviation S01 A + B. The tendency of test B to detect above average values in total opposition to the detection carried out on test A
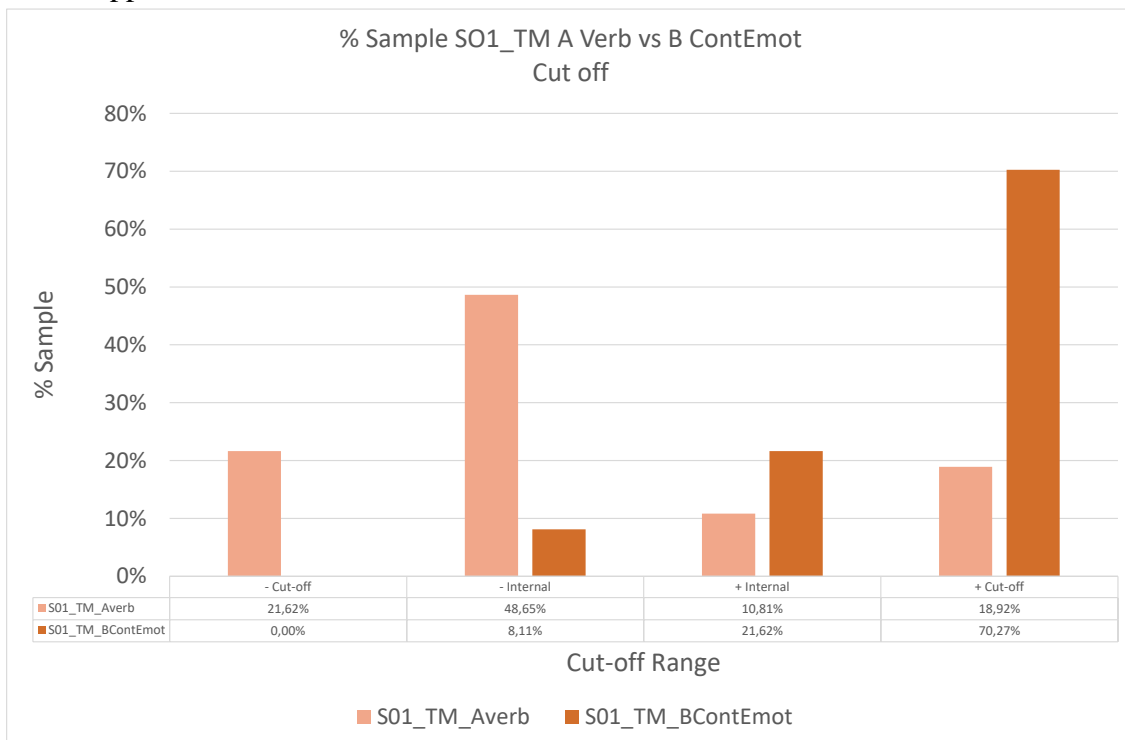

Figure 7 Cut-off S01 A (verb) + B (emotion)

Figure 7 shows the cut-off references. As for part B, 29.73% of the sample falls within the average reference range, while 70.27% is part of the positive cut-off. There are no negative cut-off detections. Test trend A has 21,62% negative results.

3.2 S02 Recognition of emotions

This test consists of four sections that evaluate the ability to recognize emotions from photos of children's faces. The test mainly measures the child's ability to read and decode other people's expressions. This competence is a fundamental characteristic in social relations. A total low score may indicate a poor ability to identify and encode facial expressions. Similar difficulties are reflected in relationships with the possibility of the onset of states of anxiety. In extreme cases, the child may act aggressively and fail to realize that he or she is causing fear in his or her partner. It can also happen that the difficulty of interaction generates frustration.
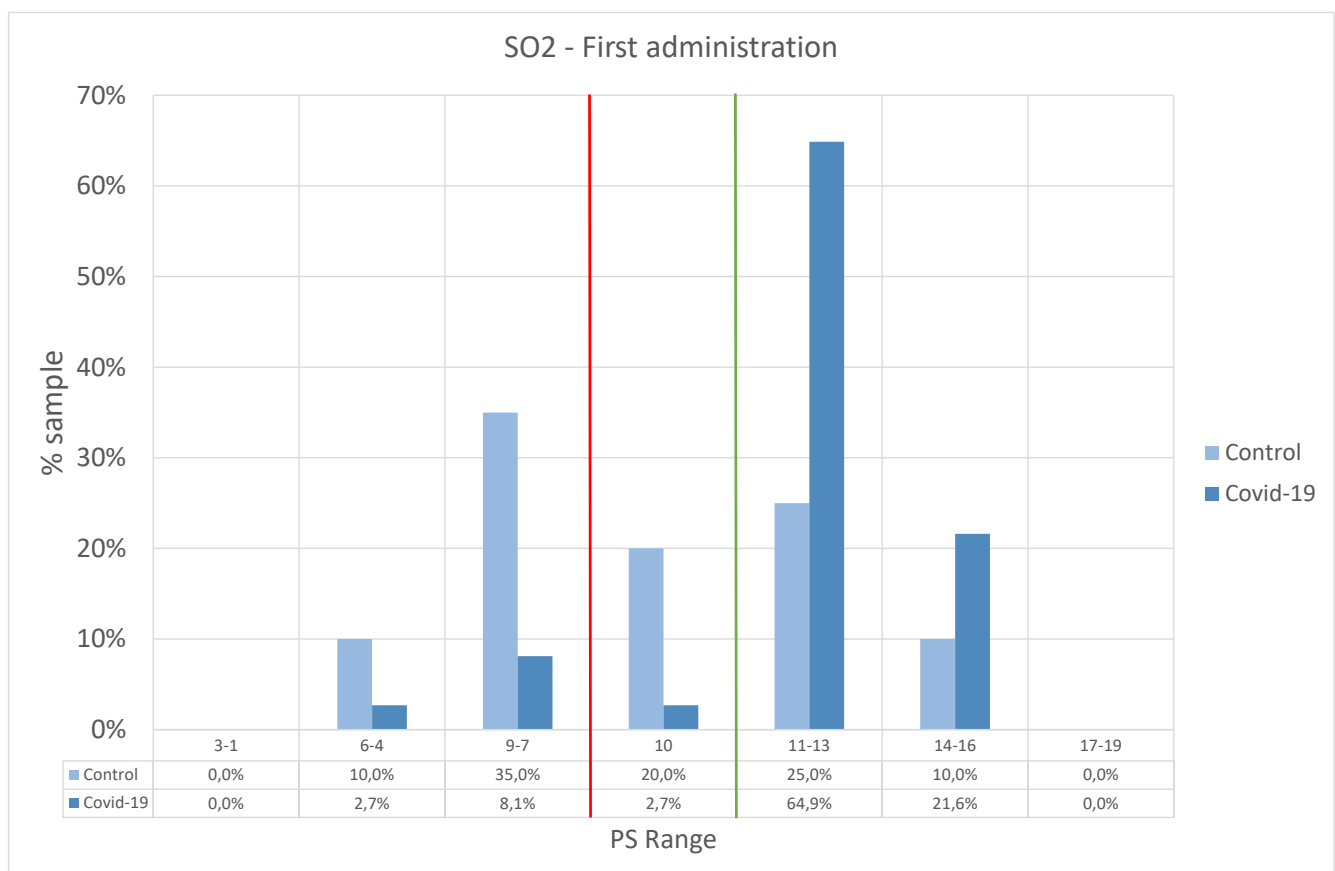

SO2 - First administration

PS Range	3-1	6-4	9-7	10	11-13	14-16	17-19
Control	0,0%	10,0%	35,0%	20,0%	25,0%	10,0%	0,0%
Covid-19	0,0%	2,7%	8,1%	2,7%	64,9%	21,6%	0,0%

Figure 8 S02 Recognition of emotions

As can be seen from Figure 8, over 86% of the sample obtained results well above the average by age. 2.7% confirmed the average, and just over 10% of the sample achieved lower levels. 55% of the control group obtained values between the average and the reference range 14-16, while the remaining 45% was below average.

4. Discussion

As can be concluded from the graphs, in lockdown time the children developed more skills related to S01 TOM (part B) and the recognition of emotions S02. It is as if they had been given considerable stimuli to enhance their skills. The comparison between the results of the S01b test and the item built specifically for the pandemic was also congruent. On the one hand, Part B is about understanding the emotions connected to a social context and recognising the appropriate state of mind linked to the various situations and taking the point of view of others. On the other hand, Part A assesses the ability to understand mental constructs such as beliefs, intentions, deceptions, emotions, imagination and fiction. To summarise, we can assume that the very high values obtained in S01B determine very good capacities of the Theory of Mind, while the lower values of S01A could indicate difficulties in linguistic elaboration. The particularly significant results in S02 indicate excellent abilities in the recognition of emotions.

However, what cannot emerge from the tests are the children's reflections during its administration, particularly with regard to the Covid-19. The difficulties of some children are linked to an abrupt, unmediated and unavoidable contact with the reality of death (Val-de-Grace School) which corresponds to the absence of meaning and significance of the event (Declerq, Lebigot, 2001). Even if there is no direct evidence (the tests were kept anonymous) we could assume that the percentage of children who obtained the lowest scores could coincide with them.

As a weakness, one realizes that the mode of administration of NEPSY-II is totally unusual, yet it is also true that the aim is to investigate the cognitive-psycho-emotional state of children, not to perform a diagnosis. The S01 and S02 tests accurately draw the skills of the children. The form in which they have been proposed has made them a moment of entertainment. Moreover, the mediation of the parents favoured the collaboration of the children because of the unusual setting.

In order to attempt to be precise in the administration, we adopted the technique of remote administration, using the parents as mediators. According to the feedback obtained from the observation card carried out on the parents, it was found that 98% of the sample did not influence the test.

5. Emotional education, meaningful learning, and embodied cognition as an integrative educational intervention

In the light of the data analysis and in anticipation of the children's return to school, there is a strong need to apply a new educational model that is updated to the new context. The social distancing, the need for protective devices, distance learning, have totally changed the classic idea of school. The emotional impact of the old school system is deficient. The need is, therefore, to create an anti-model, which should be dynamic and permeable to emotions and which allows children to express their maximum emotional potential. The main constructs, which will act as guidelines on which the educational work will be set are: *emotional education*, *meaningful learning* and *embodied cognition*.

These are the three areas which have been most affected by the pandemic. The need to attribute personal meanings to events lived directly or indirectly through emotions and experiences give a new dimension to corporeality. Some fundamental points of inspiration are taken from pedagogical activism such as considering the child as the protagonist of the educational process and not as a passive receiver of the adult's action. The importance given to the child's play and action is also taken into

consideration, judged not as critical elements, but, rather, as means of investigation, discovery of reality and learning, but above all, also the idea of a school not based on notionism, but on listening, erected on children's interests, where the teacher guides and facilitates the process of discovery of the pupil, is considered fundamental. Learning will have to pass through practical experience and concepts must be built from action on the world. With non-directive pedagogy we agree on the confidence given to the person's potential to support self-regulation and the free choice of the child in the evolutionary path (Aucuturier, 2014).

According to Greenspan (2010), the breadth of intelligence is determined by the extent to which specific capabilities are applied in different fields. In particular, according to the author, intelligence is about creating ideas from emotional experiences and reflecting on them in a broader context. It requires a systematic understanding of how and why things work and the ability to symbolically express that understanding. It also includes proof of reality. The intelligent person perceives the elements and their relationships, arranges them in innovative combinations to deal with new problems, foresees unusual possibilities, and reduces them in terms that can be understood by others. For Greenspan, therefore, intelligence is based on the ability to connect affections or intentions to an increasing ability to sequentially organize both verbal and spatial behaviours and symbols. The emotional charge to which children have been subjected during this period has led to an increase in emotional and mentalizing skills well above the national average.

Therefore, "understanding" also occurs through sensory stimuli, but it is only by attributing them a content that sensoriality becomes perception (Tagliagambe, 2010). Gallese (2016) maintains that the object does not exist in itself: if we extract it from the relationship, we have with it according to our intentionality. Its meaning arises from the potentiality of the dynamic relationship that we are able to attribute to it. Many of our perceptions have been constructed by others, and we have inherited many of them – just as we borrow many ideas – without realising it, from the culture of the time in which we live. Language itself is the reproduction of what we find at our disposal (Lotto, 2017). Children, in this period of quarantine, have experienced feelings and emotions projected by others, uprooted from the social context and projected into a condition of isolation whose only relationships were parental ones. It is therefore fundamental to subjectively mentalize the object as well as the environment and the event so that the appropriation of the experience can be based on the experiences and sensitivities of each one.

This new condition in which the children found themselves has also brought another problem, namely confinement of the body. Interesting is the perspective of the perception-body-corporeality triad that in a totally new perspective opens new possibilities to the bodily experience. The triad is divided into three levels: the first is the " body-space-innate" which is the one delimited by the boundaries of our skin. The second is the " body-space-semidefinite" understood as a body-object unit (e.g., the telephone is an extension of my voice), the third level is the "body-space-indefinitely-variable" that is constantly changing in time and space (Giachetta, Novi, Raiteri, 2019).

The work of intervention, therefore, will have to be based on the children's corporeity, considering the instrument "body" as an important device for pedagogical analysis as it belongs to the symbolic and real formation of identity. From this point of view also the interaction of the child with the protective devices (for example), does not become the "denial of sensory abilities", but rather the extension of one's own body, a new perspective of perception and integration. Through the body, it is intended to

pay attention to the correct satisfaction of educational needs, which in the conditions of serious crisis, are barely identified. The attention is thus focused on the manifestation of human suffering which must necessarily become the object of educational – and not exclusively psychological – attention (Isidori, 2012; Marino, 2004). The educational intervention that must be proposed will derive from a choice that is based on a deep respect for the child and trust in his or her ability to choose and to be an active subject of his or her own becoming. The child is a unique being, which is told through body and action. Aucouturier (2014) considers action as a mutual tonic-emotional transformation and, in this way, he emphasizes the inseparable link between tonicity and emotions. An emotional state, as a matter of fact, is always expressed through tense or relaxing states. The tonic change is, therefore, always accompanied by an emotional component. The action involves not only an external transformation that involves the body, the movement, and the world, but it also involves an internal transformation. All its functions in action are solicited: the sensory function, the motor functions, the emotional, imaginary and original, cognitive functions. Her whole being works synergistically. In light of this, it is essential that the child, on an emotional level, learns to find greater benefit from proprioceptive and exteroceptive awareness rather than from an "induced sense" of security to which no personal meaning has been given.

Conclusions

This research work, even if only on an indicative level, leads us to the request to revisit educational programs centred on cognitive learning, ignoring the emotional potential that should be abandoned soon. Traditional educational policies, based on the belief that focusing on children's academic attainment is inversely related to children's well-being and mental health, should be reconsidered. (Shoshani, A., Slone, M., 2017)

Children today, more than ever before, have shown that they can learn more effectively if there is a strong emotional correlation. In order to conduct thorough changes in education, we should begin with teacher training. For a "different" school, training should be conducted "differently", with a focus on developing practical pedagogical skills and on human maturation for becoming a teacher. Only with emotionally mature, balanced, creative, and dedicated teachers we can change the school into a better one. (Velea, Farca, 2013).

Teachers are invited to adjust the program, accordingly, keeping in mind its core idea: Any adversity that humans face also brings developmental opportunities. If we have a chance to think over it and discuss it with our peers, we can learn from it and become more complex and adaptable individuals, and find ourselves healthier and stronger than before (Capurso et al., 2020)

If these extremely topical analyses are true, there remains only one way to follow in the emotional education of children and young people, namely, to take targeted care of the relationship between significant adults (Meltzer et al., 2018) and children. In order to solicit personal expressions of emotions in order to attribute meaning, to learn how to moderate feelings that are too intense, to broaden those that are limited, to heal those that are too impregnated with pain, anxiety, radicality, etc., the following are the only ways to be followed in the emotional education of children and young people: to care for the relationship between significant adults (Meltzer et al., 2018) and children.

It would, therefore, be necessary for teachers to take a serious interest regarding the emotional level, preparing specific educational interventions, similar to what happens in school for other aspects of

learning. Systematic planning of the emotional goals that can really be achieved by children would make it possible to monitor their development properly. Through this proposal, didactics should become the means to develop emotional intelligence through body and emotional experience.

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