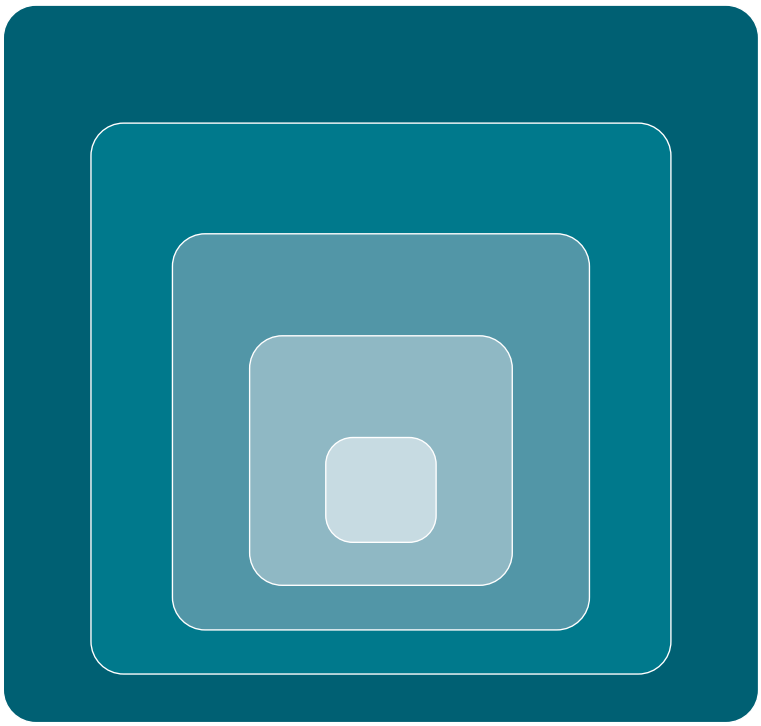
established in 1984

PSYCHOLOGY HUB

n. 3, Vol. XXXVIII, 2021



University Press

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Psychology Hub (2021)
XXXVIII, 3, 5-6
DOI: 10.13133/2724-2943/17663

Special Issue
Effect of Covid-19 pandemic: vulnerability and resources

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This issue of Psychology hub is the result of the collaboration between the Journal and the Italian Association of Psychology (AIP) with a special issue titled "Effect of Covid-19 pandemic: vulnerability and resources". This issue represents a deep reflection about a pandemic that had changed our life, and a collective attempt to learn from it and to find psychological knowledge and tools for dealing with it.

The first paper titled "Temperament profiles to differentiate between stress-resilient and stress-affected children during Covid-19 pandemic", written by Scaini, Caputi, Giani and Forresi, investigates "temperament profiles that might constitute a potential risk factor for the development of psychopathology and low levels of resilience in children experiencing Covid-19 quarantine" and suggests that "resilient children displayed high levels of persistence and reward dependence, and low levels of novelty seeking", while "behavioral difficulties were associated with low levels of persistence and reward dependence, and high levels of novelty seeking. Internalizing symptoms were more likely among children with high harm avoidance and low persistence."

The second paper, titled "Working at home during the Covid-19 pandemic: impact on quality of working and quality of life", written by Zarbo, Rosas, Ferrero and Magnano explores: "(a) the psychological impact of the restrictions on work activity and on the perceived quality of life; (b) the way in which people using their psychological resources, adapted or changed their daily habits and behaviours according to the limitations imposed by the pandemic". Results show the different impact of the restrictions on the quality of life, the quality of work and the perceived work performance according to the different psychological resources deployed by participants and to their perception of social distancing, time at home, and life-work balance". The authors explore also how gender differences affect these dimensions.

The third paper, titled "From the inside. How the feelings of the closeness and the remoteness from others changed during lockdown", written by Pediconi, Brunori and Romani, explores how the perception and processing of the presence of others in adolescents' relational experience has changed and how closeness and remoteness were experienced during the period of limitation of social relations. The results of this study "show that the closest affectional bonds during lockdown were with both family and friends. Pre-adolescents still rely on family ties, while adolescents are working on the construction of the social world outside the home, despite enforced confinement". Moreover, they suggest that "the return to school was strongly oriented by the most significant relationships perceived during lockdown that supported to come back to normality".

The fourth paper, titled "Career planning during the COVID-19 pandemic. Training for strengthening courage and career adaptability and lowering fear levels of COVID-19", written by Zammitti, proposes a training aimed at lowering the levels fear of COVID-19 and raising the levels of courage and career adaptability in adolescents and the data about its efficacy. The results show that "the experimental group, after training, had lowered the levels of fear of COVID-19 and raised personal resource levels, while the control group showed higher levels of fear of COVID-19 in the second administration".

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The fifth paper, titled "Effects of the COVID-19 pandemic in ECEC centers: social and psychological impact on children and teachers", written by Berti, Cigala and Severgnini investigates "the social and psychological impact of the pandemic on children and teachers and the strategies implemented to cope with it in the context of ECEC centers" showing changes in behavior, play and conversations between children, the emergence of concerns in teachers, children's fragilities and resilience, and several strategies implemented to cope with negative effects observed after the lockdown.

Other studies about the psychological effects of pandemics will be included in the next issue of the Journal.

It is worth noting, in our opinion, how these papers show that Italian academic psychology has been able to investigate the consequences of the COVID-19 pandemic and the consequent lockdown on different populations (children, pre-adolescents, adolescents, teachers and adults), from different perspective (developmental psychology, dynamic psychology, work psychology etc.) and with different methods, qualitative and quantitative, experimental, or descriptive. And it is worth stressing also how each of these contributions was inspired by the attempt not only to better understand our present conditions, but also to ameliorate our future. Studying psychology as a mean to understand social reality and as a tool to modify it, represents the main objective of the Association of Italian researchers in this discipline, which has promoted - together with the scientific editors of the Journal - the issues hosting the contributions on this topic.

It is our hope that our readers can find in the content of this issue a source of inspiration for future research studies and interventions.

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Psychology Hub (2021)
XXXVIII, 3, 7-16

Temperament profiles to differentiate between stress-resilient and stress-affected children during Covid-19 pandemic

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Article info

Submitted: 13 October 2021
Accepted: 09 November 2021
DOI: 10.131332724-294317582

Abstract

Covid-19 pandemic has posed unprecedented challenges to individual resilience, especially among children who are the most affected by its psychological consequences. We aim to investigate temperament profiles that might constitute a potential risk factor for the development of psychopathology and low levels of resilience in children experiencing Covid-19 quarantine. Through a snowball sampling from the general population, we recruited parents of 158 Italian children aged 5 to 10 years (48% boys, M = 7.4, SD = 1.8). Parents completed questionnaires to assess their children's temperament, psychopathological symptoms, and resilience, respectively through the Junior Temperament and Character Inventory, the Strengths and Difficulties Questionnaire, and the Child and Youth Resilience Measure. Profile Analysis was employed to outline temperament differences between stress-resilient and stress-affected children. Results evidenced that resilient children displayed high levels of persistence and reward dependence, and low levels of novelty seeking. Behavioral difficulties were associated with low levels of persistence and reward dependence, and high levels of novelty seeking. Internalizing symptoms were more likely among children with high harm avoidance and low persistence. These findings underscore the importance of examining different temperament dimensions and their associations, especially when profiling phenotypes in trying to identify the links among temperament, vulnerability to psychopathology and resilience during stressful periods.

Keywords: Covid-19; resilience; profile analysis; temperament; psychopathology.

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Introduction

The ongoing pandemic caused by Covid-19 is posing unprecedented challenges to health and economic systems worldwide. The World Health Organization reported a growing prevalence rate (10-20%) of psychiatric disorders in childhood and adolescence (WHO, 2020). The current emergency scenario may exacerbate previous psychiatric conditions or trigger inner vulnerabilities which often turn into the precipitation of the subclinical symptomatology (Gobbi et al., 2020; Robillard et al., 2021). Therefore, collecting high-quality data on mental health effects of Covid-19 pandemic across general population and vulnerable groups is crucial to predict the demand for national clinical services and to define appropriate and targeted interventions.

Even though children are often asymptomatic and minimally susceptible to develop severe Covid-19 symptoms, they are expected to pay the highest price of this pandemic (Holmes et al., 2020; Naja et al., 2020; Pedrosa et al., 2020), with long-term consequences that are likely to persist over the years (Al-Rahamneh et al., 2021; Fegert et al., 2020). In a recent study conducted among Italian, Spanish, and Portuguese parents of children aged 3-18 years old, 85.7% of parents reported an increase in their children's irritability, restlessness, and nervousness (Orgilés et al., 2020). Similarly, a sample of Italian children aged 5-17 years old – rated by their parents – showed higher hyperactivity symptoms during quarantine (Cusinato et al., 2020).

To investigate children's specific features related to the developmental impact of adversities, the present study will focus on temperament (Goldsmith et al., 1997), whose link with subsequent onset of psychopathological problems (i.e., externalizing and internalizing disorders) is well established (Caspi & Silva, 1995; Cervin et al., 2020; Foulds et al., 2017; Henry et al., 1996; Muris & Ollendick, 2005; Newman et al., 1997). The theory of biosocial personality introduced by Cloninger (1987), includes four temperament and three character dimensions. Temperament, which describes moderately heritable and stable automatic emotional responses to experiences, includes: i) novelty-seeking: the propensity for approach and exploration; ii) harm avoidance: the propensity to withdraw and worry; iii) reward dependence: the propensity for attachment and dependence; and iv) persistence: the propensity for diligence and perseverance.

Over the years, distinct patterns of temperament proved to be linked to susceptibility to psychopathology. Rubin and colleagues (2017) found that high harm avoidance and low reward dependence were significant predictors of withdrawn behavior among 6–18 year-olds. Similarly, Kim and colleagues (2010) found that internalizing problems were significantly related to high harm avoidance and low reward dependence scores, while externalizing problems were significantly associated with high novelty seeking and harm avoidance scores, and decreased levels of persistence. Melegari and colleagues (2015) reported that ADHD children were characterized by high novelty seeking, low reward dependence, and low persistence, whereas ODD children displayed high persistence and harm avoidance, beyond high novelty seeking shared with ADHD children. These findings show significant associations between temperament and psychopathology, albeit with irregular patterns.

The role of temperament has been also extensively investigated in children exposed to stressful events, with studies highlighting that it may be associated with both resilience and vulnerabilities (Bowen, 2017; Job et al., 2020; Niu et al., 2019; van deer Laan et al., 2010). While most of studies analyzed single stressful events, others examined the impact of chronic or cumulative adverse events, offering interesting suggestions to understand the role of specific temperamental domains in highly stressful situations.

A less studied dimension concerns reward dependence, which resulted to be positively associated to psychological resilience in adults (Simeon et al., 2007), but whose protective role was not confirmed among adolescent victims of sexual violence (Ruchkin et al., 1998). However, more recently some studies found that high sensitivity to reward played a protective role against the development of depression in adolescents following trauma (Dennison et al., 2016). Alternatively, others suggested that disruptions in the reward process may be associated to the development of depression and social difficulties after adversities (Sheridan et al., 2018). It is not clear, however, if this extends to other types of psychopathology (e.g., externalizing problems).

Individual differences in temperament predispose children to specific regulation strategies to cope with stress (Chiung et al., 2015; Thompson et al., 2014; Wodzinski et al., 2018). However, temperament translates into higher levels of resilience also by stimulating different forms of temperament–environment interactions (Wachs, 2006).

In summary, temperament may have a direct effect on psychopathology, over and above other risk factors, may act as a moderator of the impact of stress and adversities on child development, or may even promote resilience (Lengua & Wachs, 2012).

In the present research, we sought to identify which temperamental profiles constitute a potential risk factor for the development of psychopathological symptoms in childhood and low levels of resilience, during quarantine due to Covid-19 in Italy. Due to the increased risk of psychopathological symptoms after Covid-19 restrictions, identifying distinct stress-resilient and stress-affected profiles is fundamental for targeted intervention.

Method

Participants

A sample of 158 Italian parents (148 mothers and 10 fathers, mean age 41 years, *SD* = 5.3 years) was recruited online in the immediate aftermath of the first national lockdown period (June 2020). With regard to parental occupation, 41.8% of the respondents were full-time employees, 32.9% were freelancers, 13.4% were part-time employees, 6.9% were full-time parents, 4.4% were in managerial positions, 0.6% were students. With regard to parental education, 76.2% of the respondents had a University degree, 20% had the equivalent of A-levels, and

3.8% had the equivalent of General Certificates of Secondary Education (GCSEs). In terms of geographical distribution, 86% of the families were from the North of Italy, 8.9% from the Centre, 5.1% from the South. As each parent completed questionnaires for himself/herself as well as for his/her child, we gathered data on 158 children between 5 and 10 years of age (48% boys, mean age = 7.4 years; *SD* = 1.8 years).

Procedure

One parent per family was asked to complete an online survey, after being informed about the study and having received their consent to participate. The survey study was advertised via University communication systems as well as social media. Inclusion criteria were living in Italy and having a child aged between 5 and 10 years of age. Exclusion criteria were not living in Italy and not having a child aged between 5 and 10 years of age.

Measures

Parents were administered an assessment protocol including the following measures.

Demographic information. A series of questions were created ad hoc to gather information on parent and child age and gender, parent education and occupation, region of residence.

The Child and Youth Resilience Measure – Person Most Knowledgeable version CYRM-PMK (Ungar & Liebenberg, 2011). The CYRM-PMK is a parent-report questionnaire measuring resources (individual, relational, communal, and cultural) available to children that may bolster their resilience. It is composed by 17 items with responses on a 3-point Likert scale. High scores indicate high resilience skills. Cronbach's alpha was 0.67 in the present research.

Junior Temperament and Character Inventory (JTCI) (Luby et al., 1999; Italian Version by Andriola et al., 2012). It assesses children's temperament and character. We used only temperament subscales: novelty seeking (NS), harm avoidance (HA), reward dependence (RD), persistence (P). An Italian study evaluated its psychometric properties supporting its use in research and clinical practice (Andriola et al., 2012). Cronbach's alpha of the four subscales ranged between 0.43 and 0.80 in the Italian validation.

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). This questionnaire assesses mental health problems and psychological adjustment in children aged 3 to 16 years. It consists of 25 items on a 3-point Likert scale describing: emotional symptoms, conduct problems, hyperactivity-inattention, peer problems and prosocial behaviour. Higher scores on the prosocial behaviour subscale reflect strengths. Higher scores on the other four subscales reflect difficulties and can be summed to obtain a total difficulties score. Moreover, emotional symptoms and peer problems can be summed to obtain internalizing symptoms score; and conduct problems and hyperactivity-inattention can be summed to obtain externalizing symptoms score. Normative data for the Italian population are available and the Italian version has good psychometric properties, with Cronbach's alpha of the five subscales ranging between 0.73 and 0.89 (Marzocchi et al., 2002).

Results

Preliminary analyses

Table 1 shows descriptive statistics with mean values for each variable included in the study. Independent-samples t-tests showed no significant gender differences in the study variables.

Correlations were run among all the variables considered in the study as a prelude to our model testing. As shown in Table 2, novelty seeking (NS) showed a positive correlation with Strengths and Difficulties Questionnaire (SDQ) total score, SDQ internalizing symptoms and SDQ externalizing symptoms, whereas NS showed a high negative correlation with child resilience. With regard to harm avoidance (HA), significant positive correlations were detected with SDQ total score and SDQ internalizing symptoms. Reward dependence (RD) was negatively correlated with SDQ total score and SDQ internalizing symptoms, and positively correlated only with child resilience. Finally, negative significant correlations were

Tab. 1. Descriptive Statistics and T-tests for Gender Differences in the Study Variables (M = males, F = females)

Variable	M mean (SD)	F mean (SD)	t	df	p	Cohen's d
Child age	7.184 (1.794)	7.585 (1.721)	-1.432	153.857	0.154	-0.228
Parent age	40.421 (6.137)	41.488 (4.417)	-1.246	135.412	0.215	-0.201
Child resilience	29.868 (3.121)	30.000 (2.880)	-0.275	152.277	0.784	-0.044
Total difficulties SDQ	10.355 (6.457)	9.707 (5.581)	0.672	148.771	0.502	0.108
Novelty seeking JTCI	8.197 (3.529)	7.476 (3.875)	1.225	155.954	0.222	0.194
Harm avoidance JTCI	9.013 (4.386)	9.268 (4.470)	-0.362	155.482	0.718	-0.058
Reward dependence JTCI	5.855 (2.146)	6.085 (1.989)	-0.697	152.471	0.487	-0.111
Persistence JTCI	2.566 (1.700)	2.671 (1.722)	-0.385	155.371	0.701	-0.061

Tab. 2. Correlations Among the Study Variables

	2	3	4	5	6	7	8	9	10	11	12	13
1. Total SDQ	.783**	.884**	-.367**	.657**	.630**	.787**	.791**	.544**	.172*	-.242**	-.442**	-.579**
2. Int SDQ	-	.402**	-.216**	.867**	.769**	.400**	.327**	.192*	.395**	-.277**	-.276**	-.547**
3. Ext SDQ		-	-.379**	.316**	.350**	.859**	.918**	.658**	-.043	-.148	-.444**	-.442**
4. Prosocial SDQ			-	-.033	-.363**	-.383**	-.304**	-.328**	.060	.214**	.100	.374**
5. Emotional SDQ				-	.348**	.287**	.279**	.103	.397**	-.157**	-.238**	-.336
6. Peer SDQ					-	.384**	.258**	.228**	.285**	-.318**	-.214**	-.597**
7. Conduct SDQ						-	.587**	.609**	-.045	-.245**	-.283**	-.454**
8. Hyperactivity SDQ							-	.570**	-.033	-.044	-.484**	-.348**
9. NS JTCI								-	-.288*	-.240**	-.455**	-.381**
10. HA JTCI									-	-.079	.018	-.147
11. RD JTCI										-	.024	.311**
12. P JTCI											-	.412**
13. PMK												-

Note. Significance levels * p < .05, ** p < .01; SDQ = Strengths and Difficulties Questionnaire; JTCI = Junior Temperament and Character Inventory; PMK = The Child and Youth Resilience Measure – Person Most Knowledgeable version; Int = Internalizing; Ext = Externalizing; NS = Novelty Seeking; HA = Harm Avoidance; RD = Reward Dependence; P = Persistence.

also found among persistence (P) and the following dimensions of SDQ: total score, internalizing and externalizing symptoms.

Main analyses

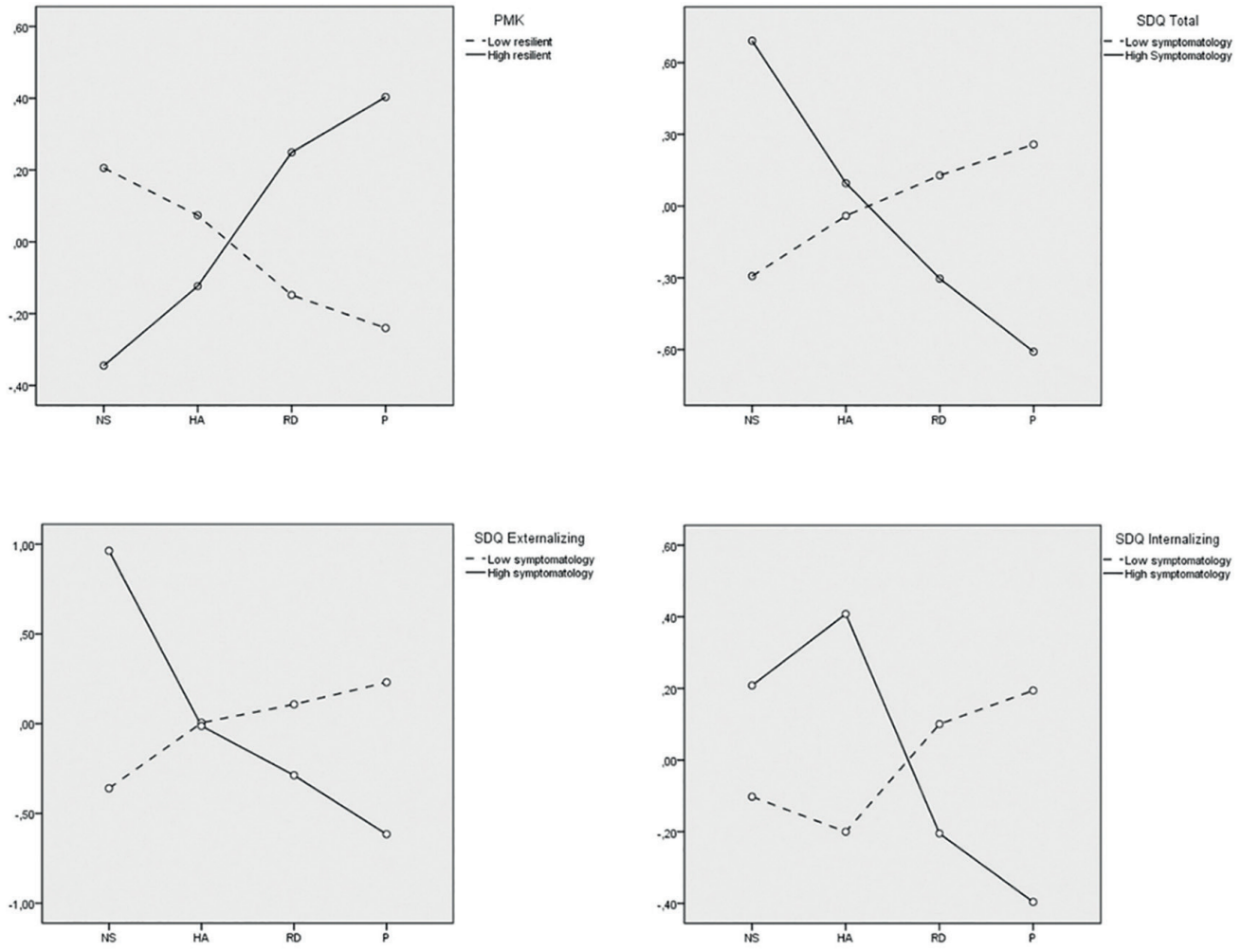
Profile Analysis (PA) was employed to identify whether resilient or non-resilient children show distinct profiles. In our analysis, within-subjects factor is represented by the scores of the JTCI Temperament subscales, whereas levels identified the categories of resilience and symptomatology (0, 1). For SDQ Total scale, and for Externalizing and Internalizing subscales, children were grouped based on their score. The child was classified as 0 (low symptomatology) or 1 (high symptomatology) if the score was below or above the 75° percentile, respectively (Skewness coefficient .894=, Kurtosis coefficient = .792). In the case of PMK questionnaire, high scores (> 75°) indicated high-resilient children (Skewness coefficient -1.100=, Kurtosis coefficient = 1.559) (1). All the variables were z-transformed before performing analyses, and age was included in the models as covariate.

All the models (see Figure 1) showed significant differences in the profiles of high-resilient and low-resilient children (PMK: $F(3) = 9.276$, $p < .001$; SDQ Total: $F(3) = 19.950$, $p < .001$; SDQ Externalizing: $F(3) = 26.061$, $p < .001$; SDQ Internalizing: $F(3) = 11.359$, $p < .001$). Statistically significant differences emerged between high-resilient and low-resilient children in NS (High resilient: $M = 6.64$, $SD = 3.31$, $p = .001$; Low resilient: $M = 8.53$, $SD = 3.78$, $p = .001$), RD (High resilient: $M = 6.46$, $SD = 1.92$, $p = .017$; Low resilient: $M = 5.69$, $SD = 2.09$, $p = .017$) and P (High resilient: $M = 3.31$, $SD = 1.77$, $p < .001$; Low resilient: $M = 2.21$, $SD = 1.53$, $p < .001$), whereas no relevant differences were detected between the two groups in HA (High resilient: $M = 8.63$, $SD = 4.48$, $p = .238$; Low resilient: $M = 9.45$, $SD = 4.37$, $p = .238$). In particular, high-resilient children showed a peculiar temperament profile, characterized by lower NS scores and higher RD and P scores, compared to low-resilient children scores.

Profile analysis also revealed a significant distinct set of temperament profiles associated with SDQ total score. Statistically salient differences emerged in NS (High symptomatology: $M = 10.43$, $SD = 3.84$, $p < .001$; Low symptomatology: $M = 6.72$, $SD = 3.07$, $p < .001$), RD (High symptomatology: $M = 5.34$, $SD = 2.17$, $p = .013$; Low symptomatology: $M = 6.24$, $SD = 1.96$, $p = .013$) and P scores (High symptomatology: $M = 1.60$, $SD = 1.49$, $p < .001$; Low symptomatology: $M = 3.05$, $SD = 1.61$, $p < .001$), but not in HA scores (High symptomatology: $M = 9.57$, $SD = 4.58$, $p = .440$; Low symptomatology: $M = 8.96$, $SD = 4.36$, $p = .440$), between children with high or low symptomatology (classified basing on SDQ total score). In particular, children with a SDQ total score below the 75° percentile exhibited lower levels of NS and HA, and higher levels of both RD and P; whereas children with high symptomatology (SDQ total score above the 75° percentile), displayed higher NS and HA but lower RD and P.

Similarly, a statistically significant interaction effect between temperament and externalizing symptoms of SDQ emerged. Multivariate ANOVA showed that a statistically significant difference exists between children with high or

Fig. 1 Temperament profiles of stress-resilient and stress-affected children



Note. PMK: The Child and Youth Resilience Measure – Person Most Knowledgeable version; SDQ Total: Strengths and Difficulties Questionnaire Total scale; SDQ Externalizing: Strengths and Difficulties Questionnaire Externalizing subscale; SDQ Internalizing: Strengths and Difficulties Questionnaire Internalizing subscale; NS: novelty seeking; HA: harm avoidance; RD: reward dependence; P: persistence.

low symptomatology only in NS (High symptomatology: M = 11.40, SD = 3.29, $p < .001$; Low symptomatology: M = 6.49, SD = 2.90, $p < .001$), RD (High symptomatology: M = 5.37, SD = 2.15, $p = .030$; Low symptomatology: M = 6.20, SD = 1.99, $p = .030$) and P scores (High symptomatology: M = 1.63, SD = 1.41, $p < .001$; Low symptomatology: M = 2.99, SD = 1.66, $p < .001$). Children who scored lower in the externalizing subscale of SDQ revealed the same temperament profile as those who scored lower in the SDQ total score, with lower NS, higher RD and P and same levels of HA (High symptomatology: M = 9.12, SD = 4.71, $p = .924$; Low symptomatology: M = 9.16, SD = 4.33, $p = .924$).

Different temperament traits were related to internalizing symptoms. Children with low internalizing symptoms differed from those with high internalizing symptoms in HA (High symptomatology: M = 10.94, SD = 4.06, $p < .001$; Low symptomatology: M = 8.26, SD = 4.34, $p < .001$) and P (High symptomatology: M = 1.94, SD = 1.45, $p < .001$; Low symptomatology: M = 2.95, SD = 1.73, $p < .001$). No differences were detected in NS (High symptomatology: M = 8.58, SD = 4.19, $p = .066$; Low symptomatology: M = 7.45, SD = 3.43, $p = .066$) and RD (High symptomatology: M = 5.56, SD = 2.08, $p = .072$; Low symptomatology: M = 6.18, SD = 2.03, $p = .072$). In particular, internalizing symptoms were more likely among children with a temperament profile characterized by high propensity for withdrawal/worry and low tendency to perseverance. A relevant interaction effect was encountered also between temperament and SDQ internalizing symptoms.

Discussion

Overall, the present study supports and extends previous findings from research conducted during non-pandemic periods and underscore the importance of examining temperament factors when children are exposed to adverse events.

In the immediate aftermath of the first national lockdown period in Italy resilient children were characterized by high persistence and reward dependence, and low novelty seeking. Conversely, children with behavior problems showed a temperament profile characterized by low persistence and reward dependence, and high novelty seeking. Moreover, children with internalizing symptomatology presented a profile defined by high levels of harm avoidance and low levels of persistence.

Findings concerning the temperamental trait of persistence are in line with the healthy and resilient personality profile reported in previous studies (Eley et al., 2016; Lee et al., 2017), also in samples of children exposed to stressful events (Wachs, 2006). In their longitudinal study, for example, Ruschena and colleagues (2005) found that persistence was significant predictor of resilient outcomes at age 17–18 in children exposed to stressful family transitions like the loss of a parent, being associated with lower levels of behavior/externalizing problems.

An explosive temperament profile with a high novelty seeking tendency, like the one exhibited in our sample by children with behavioral difficulties, is often found together with maladaptive coping styles: these children could react to daily life stress in a socially inappropriate manner, possibly exacerbating behavior problems (Cloninger, 1987; Lee et al., 2014). Our findings are in accordance with those by van deer Laan and colleagues (2010), in which High-Intensity Pleasure, reflecting the pleasure derived from activities involving high intensity or novelty, was associated with increased risk of delinquency in situations of cumulative risks.

Regarding the protective role of reward dependence, the present study shows that being "tender-hearted, loving and warm, sensitive, dedicated, dependent, and sociable" (Cloninger et al., 1994) can make children more resilient to stress. Youth with high levels of reward dependence may be motivated look for more normative rewards and positive interpersonal feedbacks in the environment (i.e., from parents or peers), reducing the tendency to engage in externalizing behaviors in situations of emotional distress. These findings are in line with the results of a recent study by Kasparek and colleagues (2020), exploring motivation for reward and behavioral sensitivity to reward value in children exposed to traumatic events: they suggest that high levels of sensitivity to reward value may moderate the association between adversities and externalizing problems.

The role of low novelty seeking and high reward dependence in stress-resilient children is particularly interesting and not surprising if we consider the specific condition experienced by children during the first lockdown of this pandemic: it is possible, in fact, to speculate that children with a lower need for novel activities and with a higher tendency to rely on parental proximity/closeness, might find it easier to adapt to a situation characterized by the need to stay at home and spend more time with parents.

On the other hand, our findings on children with high internalizing difficulties are consistent with previous studies evidencing the inverse relation between harm avoidance and psychological resilience (Mathiesen & Prior, 2006; Simeon et al., 2007). Children characterized by high levels of harm avoidance are usually very cautious and present feelings of apprehension. These children could be found trapped in self-blaming thoughts causing discomfort and leading to withdraw and worry, which might in turn confirm a negative evaluation of themselves (as well as of the stressful situation they are living) in a reinforcing vicious circle (Rubin et al., 2017). The association between internalizing symptoms and withdrawal is coherent with findings by Feldman and colleagues (2013) in a study on infants and young children exposed to war violence in Israel: a diagnosis of PTSD, in fact, was associated with the temperamental factor of withdrawal and with the use of gaze aversion, no talk and self-soothing strategies to regulate emotions.

Several studies recently focused on the negative impact of the Covid-19 pandemic on the well-being of Italian children and families (Ionio, 2021; Camisasca et al., 2021; Caputi et al., 2021). The present study adds to this literature suggesting that profiling phenotypes might be extremely helpful in having a better comprehension of the factors involved in child adjustment, vulnerability to psychopathology or resilience in the context of adversity.

Clinicians may find it useful to integrate information on children's temperamental characteristics into their case conceptualization, providing more traditional treatments focusing on the response to adverse/traumatic events with a developmentally informed approach. In addition to more complete treatment plans, a focus on temperamental traits could offer interesting hints for prevention efforts.

The significant negative association found between harm avoidance and low persistence traits might help identify children at higher risk for developing internalizing symptomatology, allowing an early intervention to improve their well-being. Children with these dispositional traits should be supported with proper trainings, considering that harm avoidance was identified as a longitudinal predictor of maladaptive emotion regulation in adults (Izadpanah et al., 2016). In addition, as children exposed to stressful events are also more likely to develop behavioral symptoms, an assessment including temperamental traits such as novelty seeking, and reward dependence could be highly informative and increase the range of interventions that might be planned. Finally, the prominent role played by reward dependence in distinguishing between stress-resilient and stress-affected children, especially those presenting externalizing symptomatology, provide interesting suggestions for clinical interventions focused on interpersonal processes. It could be hypothesized that, at least in certain adverse situations, children who successfully cope have a strong disposition to social attachment, look for social approval, and are abler to keep reward expectations in a stressful milieu. As the role of temperamental factors when children are exposed to adversities and traumatic events received a limited attention in previous literature, such finding encourages future studies to further explore these traits and bring additional evidence.

Some limitations in the present study must be acknowledged. The first one concerns the sample size, that is hardly representative of Italian parents of children aged 5-10 years old. Secondly, the composition of the sample in terms of socioeconomic status and the geographical distribution prevents from reporting a clear picture of the situation in Italy after lockdown. Thirdly, the Italian validation of the measure

used in the present research to assess children's resilience is still not available. Furthermore, a multi-informant approach lacks as all the questionnaires were completed by one parent only. Finally, the cross-sectional nature of the first wave of data collection does not allow to run more informative and sophisticated analyses.

Notwithstanding these limitations, the present study extends our knowledge of the association among children's temperament traits, resilience ability and behavior in such an exceptional period. Since temperament is relatively stable over time, a timely identification of behaviors associated with these traits may pave the way for planning early preventive interventions for vulnerable targets.

Future research should adopt longitudinal design and consider the possibility of investigating temperament in conjunction with character, integrating information about personality with genetic, behavioral and neuroimaging data.

Author Contributions
The authors contributed equally to this manuscript.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical approval
Ethics approval was obtained by the Ethics Committee of Sigmund Freud University (Milan, Italy) in accordance with the ethical standards of the Declaration of Helsinki.

Acknowledgments: The authors would like to thank the participants for their time, Gloria Angelini and Alice Barbieri for their help in data collection, Elda Andriola for sharing the Italian version of the Junior Temperament and Character Inventory.

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Psychology Hub (2021)
XXXVIII, 3, 17-26

Working at home during the Covid-19 pandemic: impact on quality of working and quality of life

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Article info

Submitted: 15 October 2021
Accepted: 16 November 2021
DOI: 10.13133/2724-2943/17588

Abstract

The restrictions implemented by governments in order to contain Covid-19 pandemic have forced millions of people around the world to adapt to new demands in their daily lives, work and studies.

Such reformulation of personal, work and social experiences has increased the perception of precariousness and instability, and has questioned the routines and the habits linked to the working and personal behaviours.

The aim of the study was to explore: (a) the psychological impact of the restrictions on work activity and on the perceived quality of life; (b) the way in which people using their psychological resources, adapted or changed their daily habits and behaviours according to the limitations imposed by the pandemic.

The survey used was composed as follows: satisfaction with life scale; flourishing scale; ad hoc questionnaire exploring quality of life and work during the pandemic, and personal resources.

Data were analysed through mixed methods. The results have highlighted the different impact of the restrictions on the quality of life, the quality of work and the perceived work performance according to the different psychological resources deployed by participants and to their perception of social distancing, time at home, and life-work balance. Furthermore, gender differences were explored.

Finally, the study provided useful insights for psychologists and career counselling professionals, who have to face new challenges in supporting their clients even in adverse conditions.

Keywords: Covid -19; smart working; psychological resources; work performance; quality of life.

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Introduction

The diffusion of Covid-19 and the subsequent restrictions imposed by governments to contain the pandemic have forced millions of people around the world to adapt to new, unprecedented demands quickly.The lockdown has led not only to a reconfiguration of daily routines, but also to a shift of social and work interactions to an almost exclusively 'telematic' level impacting on the quality of life of individuals (Epifanio et al., 2021; Italian National Institute of Statistics [ISTAT], 2020) and their mental well-being (Brooks et al., 2020; Pfefferbaum & North, 2020).

Isolation, economic and job uncertainty, and psychosocial risks resulting from Covid-19had severe consequences on the quality of work, increasing workers' stress (Venegas Tresierra & Leyva Pozo, 2020; Phillips, 2020), burnout (Restauri & Sheridan, 2020) and threatening workers' well-being (Phillips, 2020).

On the one hand, the transposition of usual working practices to remote allowed employees to discover that working from home was possible (Baert et al., 2020) and has allowed to maintain the supply of services and the production process; on the other, however, the 'work from home' has been implemented in an emergency way, suddenly and with little planning, hindering workers from adapting and equipping themselves appropriately, especially in times of psychological distress (Toscano & Zappalà, 2020). Therefore, even though the main strength of smart working lies in the possibility of carrying out one's work virtually anywhere, a remote form of work requires flexibility and adaptation according to the technological tools and to the workers' personal resources. Workers have been required to develop new skills, not only related to the massive use of technology, but also to the overall management of time, relationships, space and intra- and extra-work, personal and family balances. Several studies conducted before the pandemic, had already shown that managing the boundaries between work and life space is a potential element of tension in people's lives (Allen & Martin, 2017; Kossek, 2016); moreover, pandemic-related circumstances have forced most workers to reorganize work-life balance, often creating conflicts (Schieman et al., 2021; Phillips, 2020) and more imprecise and blurred boundaries (Anwer, 2020).

In addition, Landivar et al. (2020) pointed out that the 2019 coronavirus crisis was a potential element of gender discrimination in women's labour force participation. The results of their study illustrated that in the US, women, particularly mothers, are more likely than fathers to exit the labour force and become unemployed during the covid-19-related crisis. The closure of schools, in fact, has meant that parents had to take on more childcare responsibilities, even during working hours, which led to changes in working hours and weighed particularly on mothers (Collins et al., 2021; Cooper & Mosseri, 2020).

Considering these challenging conditions, we have decided to explore how individuals have coped with the difficulties linked to lockdown, starting from the psychological resources deployed, with the aim to better understand which elements are crucial to guaranteeing the maintenance of a good quality of life and work, even in adverse conditions.

Aim of the study

The aim of this study was to explore the psychological impact of the restrictions due to the pandemic on working activity, during the initial stage of the Covid-19 outbreak, in an Italian sample. In particular, this study aims to detect whether the changes in working routine had a positive or negative effect on the perceived quality of life.

Method

Participants

Data were collected from April 6th to May25th, 2020, during the lockdown due to the Covid-19 pandemic, through an online survey. The participants expressed their consent to the participation in the study and were free to abandon it at any time.

The participants were recruited with a convenience sampling. The respondents were 278 Italian adults (M = 74, F = 204), coming from different Italian regions, obliged to work at home due to the lockdown; they were aged between 18 and 65 years (M = 43.12; SD = 9.59). Most of them had a university degree (215, 77.3%); the remaining part had a high school degree (61, 22%) and junior high school degree (2, .7%). More than a half (58.1%) had children. The working activities are distributed as represented in Table 1.

Tab. 1. Distribution of the participants by professional activities.

Professional activity	Frequency	Percentage
Employee	80	28.8
Education	48	17.3
Psycho-social	49	17.6
Freelancer	17	6.1
Commercial	29	10.4
Other	55	19.8
Total	278	100.0

Instruments

Data were collected using an ad hoc survey, exploring the following aspects: socio-demographic information (gender, age, instruction, current location, and employment status); perception of the quality of life during the lockdown; perception of the working performance during the lockdown; skills and competences developed due to the smart work. Moreover, two validated scales were included: the Satisfaction with Life Scale (Diener et al.,1995), that is the most used measure of the quality of life, composed of five items with

a 7-point Likert scale (Cronbach's alpha = .87; sample item: "In most ways my life is close to my ideal"); the Flourishing Scale (Diener et al., 2010), that is a brief measure of the meaningfulness of life; it is composed of eight items with a 7-point Likert scale (Cronbach's alpha = .87; sample item: "I am a good person and live a good life").

Due to the purpose of the current study, being a worker was the only inclusion criterion. Participants completed the questionnaires through an online survey platform (Google Forms). It took approximately 15 min to complete. To prevent double compilation, the respondents were asked to provide an individual code composed of the first three letters of the last name and the first three letters of the first name that, matched with other demographic information, permitted to check any eventual duplicate.

Data analyses

Data analysis was conducted through mixed procedures. First, we have analysed the texts of the answers given to the open questions through the assumptions of linguistic pragmatic, a particular sector of sociolinguistics, which deals with the text, with the "speech acts" that communicants exchange with each other (Austin, 1962; Searle et al., 1980). In answering the questions that investigate significant aspects of one's life, the use of different types of speech acts is related to the individual meanings and feelings related to the question. This type of analysis was conducted by two of the researchers that are experts in psycholinguistics. The coherence index (number of agreeing codes/total codes) between the two judges was 0.99 on their initial coding. Where differences emerged, an agreement was reached after a discussion between the two judges. Second, we have conducted a qualitative analysis of the content of the answers to the open questions, related to relevant categories and themes (Hsieh & Shannon, 2005). This type of analysis uses an inductive approach, based on data, that allows to draw conclusions without having any starting hypotheses (Hsieh & Shannon, 2005). This procedure is consistent with the Grounded Theory Methods (GTM), making the theory emerge from the data (Glaser & Strauss, 2017). The categorization was made by two of the authors; the coherence index between the two judges was 0.98 on their initial coding. Where differences emerged, an agreement was reached after a discussion between the two judges. Third, the relationships between some of the items have been explored through a correspondence analysis, a statistical technique aimed at examining the relationship between categorical variables, computing correspondences for two-way or multiway tables of categorical variables. Tables are decomposed into row and column coordinates, which are displayed in a graph; categories that are similar appear close to each other in the graphs (Greenacre, 1984). Descriptive analysis, contingency tables with Pearson's Chi-square, t test for independent samples for gender comparison, and Spearman's rho to analyse the correlations for ordinal variables were also computed. SPSS version 25 statistical package was used for performing the analyses.

Results

Quantitative analysis of the answers to the closed questions

The first part of the survey regarded the adjustment of the participants to the changes required by working at home. The respondents expressed their agreement to some questions – reported in Table 2 – using one of the options presented.

Tab. 2. Distribution of the participants by closed items

Do you have a personal device, with which only you work?	**Frequency**	**Percentage**
Yes	251	90.3
No	27	9.7
Total	278	100.0
Have you already used smart work before?	**Frequency**	**Percentage**
Never	138	49.6
Sometimes	113	40.6
Always	27	9.7
Total	278	100.0
You adapted to the new way of working in …	**Frequency**	**Percentage**
Less than 1 week	218	78.4
More than 1 week	38	13.7
More than 2 weeks	12	4.3
Not yet	10	3.6
Total	278	100.0

As reported in Table 2, even though the most part of the participant (49.6%) had never used working at home before the lockdown, the adaption to the new organization of working was quick (92,1% of the respondents employed less than two weeks; among them, the 78.4% felt to effectively manage the different way of working in less than one week). Probably, the possibility to use a personal device to work could be considered a facilitating factor. However, exploring the relationship between working performance and the times of adaptation to the new ways of working, we found a significant negative correlation (rho = -.26, $p < .001$), indicating that the more time was employed to adapt to new working conditions, the worse the performance is perceived.

Regarding these two items, gender differences were explored: the results indicated no differences between men and women in previous experiences in smart working (Chi-square = 1.88; df = 2; p = 0.39) and in the adaptation of the new organization of working (Chi-square = 4.42; df = 3; p = 0.22). Moreover, the SWLS (M_{men} = 24.26, SD_{men} = 5.16; M_{women} = 24.22, SD_{women} = 5.36; t = .06; p = 0.96) and Flourishing (M_{men} = 43.09, SD_{men} = 7.25; M_{women} = 44.50, SD_{women} = 6.53; t = -1.46; p = 0.15) scores were not significantly different in the two subgroups.

Regarding the self-perception about the quality of working performance during the lockdown period, and the subsequent social restrictions and smart work, the most part of the participants perceived their working performance as stable or worse (73.8%);

no gender differences were found at this item (Chi-square = .52; df = 2; p = 0.77); the most part of them (60.1%) is convinced that some of the solutions applied to face with the social restrictions imposed by the pandemic could be extended in the future, changing the way in which the work organization is managed.

Regarding the self-perception about the quality of life during the lockdown period, the most part of the participants perceived their quality of life as stable or worse (76.3%); this perception did not significantly differ among men and women (Chi-square = 3.76; df = 2; p = 0.15). Relating the perception to the quality of life during the pandemic to the life satisfaction and meaningfulness of life – that can be considered as indicators of subjective well-being (Ryan & Deci, 2000) – through the Spearman's rho correlation coefficient, we found no significant relationships (SWLS: rho = 0.03, p = 0.67; Flourishing: rho = 0.07, p = 0.26), indicating that regardless the general subjective well-being, the specific circumstances had a negative effect on the perception of well-being during to the isolation period. The same results are confirmed analysing the correlations separately in men and women. Moreover, the perception of quality of life during the pandemic period is positively and significantly related to the perception of working performance (rho = .25, p < .001), and negatively to the time employed to adapt to working through the technological devices (rho = -.20, p = .001). Both men and women showed the same results.

Qualitative and quantitative analysis of the answers to the open questions

The analysis of the open-ended responses was conducted in two steps: the first was focused on the form in which the participants gave their answers, the second was focused on the content of the answers.

First step

We analysed the two blocks or units of the answers given to two open questions: (1) Indicate three new things, related to your work, that you do today and that you did not do before; (2) What skills and resources of which you were not aware did you 'discover' during this period of isolation? The questions were designed to solicit the production of answers related to the participants' representations of the elements of novelty associated with work and the skills and personal resources discovered during the period of health emergency. With respect to the form used by the participants in the two selected text units, three different types of answers can be identified: lists, complex answers, and minimal answers.

Type 1. The *lists* (numbered, with hyphens, with commas/dots and commas, with full stops, without punctuation) are the most numerous in both text units. Among the various syntactic forms that could be chosen, the lists are generally neutral, and the use of lists is related to a merely descriptive text, without any evaluation (Weber, 1974); on the contrary, our respondents, using the lists, take a position of value. For example:

"I work on a small monitor in place of two big monitors, 2. I do not manage paper anymore, 3. I no longer have telephone contacts, only emails"

In this response, the time seems to be divided in a 'before' and an 'after', and the after has a negative connotation.

"I don't look at the agenda. I don't look at timetables. I have no breaks"

In this response, the repeated use of negation indicated that the present is worse than the past.

Type 2. The *complex answers* report inner reflections on a problem; they contain more than was required. This type of answer indicates self-reflection, it is a discourse that the respondents make with themselves. For example:

"Give frontal lessons, monologues with no impact on students because communicating on the platform creates confusion, and they prefer to keep quiet by switching off the microphone. Also, there is no overall eye contact among the whole class".

The analysis of this answer suggests that there are two opposite parts: me (the respondent) *vs.* them (the students); probably the answer overcame the intentions of the respondent but seems to be a reliable representation of a new experience related to the working activity, that has been lived worse than the past ones.

Type 3. The *minimal or "flash" answers* (one word, two words, one sentence) are superficial answers, indicating the lack of investigation or reflection, and often the lack of contextualization. For example:

"Nothing"
"The calm"

Second step

We analysed the content of the answers to the open questions identifying the following categories, as reported in Table 3.

Tab. 3. Categorization of the open items

Motivations for a worse or better quality of life	Frequency	Percentage
More time/tranquillity; less work/stress	43	15.5
Less time/tranquillity; more work/stress	25	9.0
Stay at home/with family	12	4.3
Social distancing/restrictions	58	20.9
Positive-negative imbalance	71	25.5
Other	20	7.2
N.r.	49	17.6
Total	278	100.0
In which way your work could change in the future?	**Frequency**	**Percentage**
Improvement smart work	61	21.9
Greater or better use of technology	35	12.6
Better time management	14	5.0
Change in social relationships	10	3.6
Other	42	15.1
N.r.	116	41.7
Total	162	100.0

What skills and resources you were not aware of did you 'discover' during this time of isolation?	Frequency	Percentage
Psychological resources	57	20.5
Organizational-behavioural strategies	51	18.3
Technological skills	47	16.9
Other	123	44.2
Total	278	100.0

Gender differences were explored in these three open items, showing the following results: no significant differences were found in the responses to the item "In which way your work could change in the future? (Chi-square = 3.70; df = 4; p = 0.45) and to the item "What skills and resources you were not aware of did you 'discover' during this time of isolation?" (Chi-square = 5.60; df = 3; p = 0.13); significant gender differences are shown in the responses to the item "Motivations for a worse or better quality of life" (Chi-square = 12.96; df = 5; p = 0.02); the most significant results are regarding the differences in the second category of responses "less time/tranquillity; more work/stress": with respect to the men, the women significantly perceived to have less time and more work and stress (13.77% *vs.* 3.23%); furthermore, men have the perception of a different work-life balance due to the life conditions during the pandemic, with respect to the women (41.94% *vs.* 26.94%).

Then, we have analysed semantic organizations between the responses to couples of items, with the aim to explore any eventual semantic association among them. More specifically, we have verified the association between the perception of quality of life during the lockdown and the related motivations, also comparing men and women. Correspondence analysis was used; in the men's subgroup, it was based on n = 62 categorized sentences. The model has an inertia (i.e., distance from centroids of the dimensions) = 1.86, chi-square = 115.09 (df = 10, p < .001). The plot of the scores in two dimensions, with symmetrical normalization, is reported in Figure 1a.

The correspondence analysis in the women's subgroup was based on n = 165 categorized sentences; the model has an inertia = 1.73, chi-square = 285.91 (df = 10, p < .001). The plot of the scores in two dimensions, with symmetrical normalization, is reported in Figure 1b.

So, as we can observe in Figure 1a and 1b, a perception of a worse quality of life is associated with the social distancing, the restrictions in personal freedom, as well as the work loading perceived as more stressful. On the contrary, a better perception of the quality of life is associated with the possibility to stay at home and have more time that can be dedicated to the family, and to work in a less stressful way. Finally, the perception of an equal quality of life, respect to the 'normal' way of living is associated with a perception of imbalance between positive and negative aspects of the lockdown. Even though the semantic associations are similar in the graphics of the two subgroups, the position in the space is very different: in fact, whilst men tend to refer more frequently a positive experience related to the pandemic situation (high position in the graphic), in women's graphic, the high position is occupied by the negative experience related to the pandemic situation and its related motivations.

Subsequently, we have verified the association between the perception of quality of life during the lockdown and the resources developed, comparing men and women. The models tested on separate subgroups were not statistically significant. On the contrary, the correspondence analysis on the whole group of respondents, based on n = 276 categorized sentences was significant. The model has an inertia = 0.051, chi-square = 14.200 (df = 6, p = .027). The plot of the scores in two

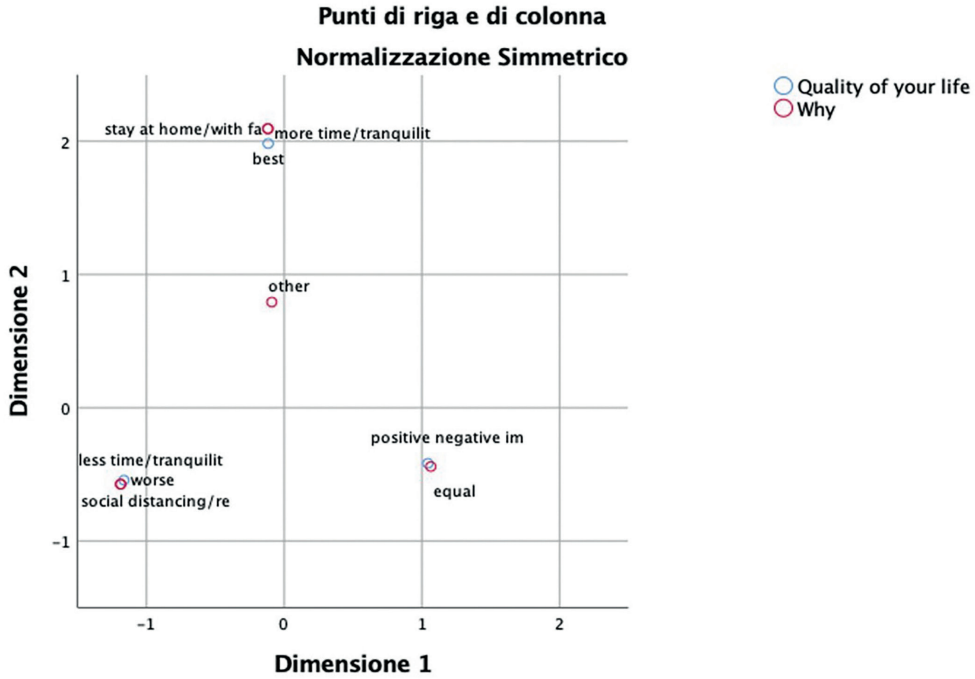


Fig. 1a. Results of correspondence analysis of quality of life and motivations, men's subgroup

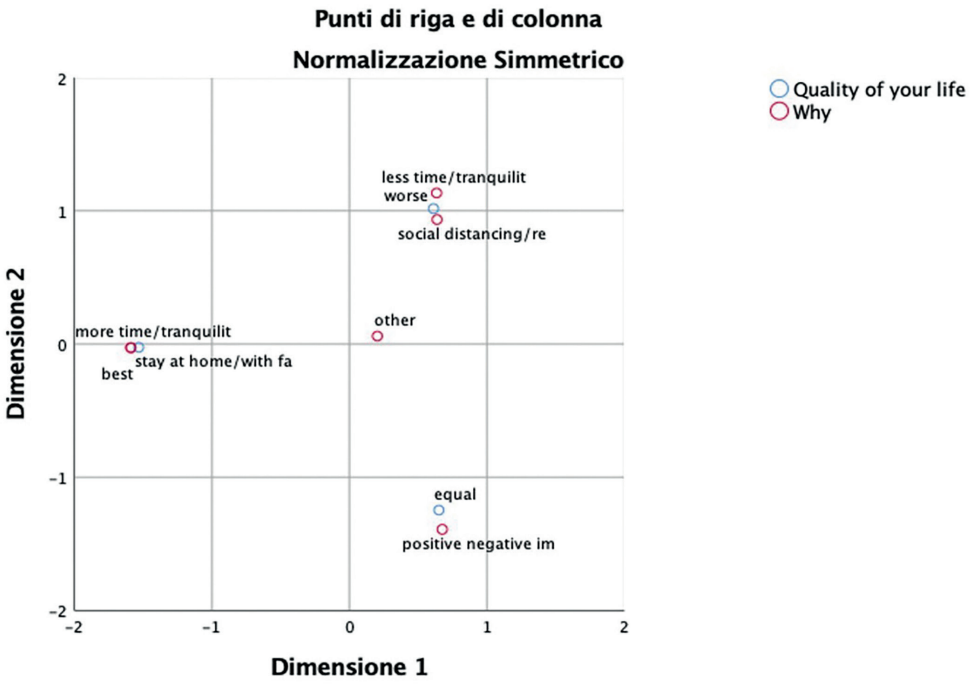


Fig. 1b. Results of correspondence analysis of quality of life and motivations, women's subgroup

dimensions, with symmetrical normalization, is reported in Figure 2.

Figure 2 shows that a best perception of quality of life is associated to the development of psychological resources to deal with the uncertainty related to the restrictions; on the other hand, a worse perception of the quality of life is related to any specific competence or resource, or with the development of competence or resources not specifically related to the management of the critical situation (e.g., cooking). The development of technological skills has permitted our respondent to maintain the *status quo*.

A further correspondence analysis explored the association between the perception of quality of working performance during the lockdown and the resources developed. Correspondence analysis was based on n = 276 categorized sentences. The model (inertia = 0.043, chi-square = 11.84, df = 6, p = .07) was not significant, neither in the whole group of respondents, nor in the subgroups of men and women.

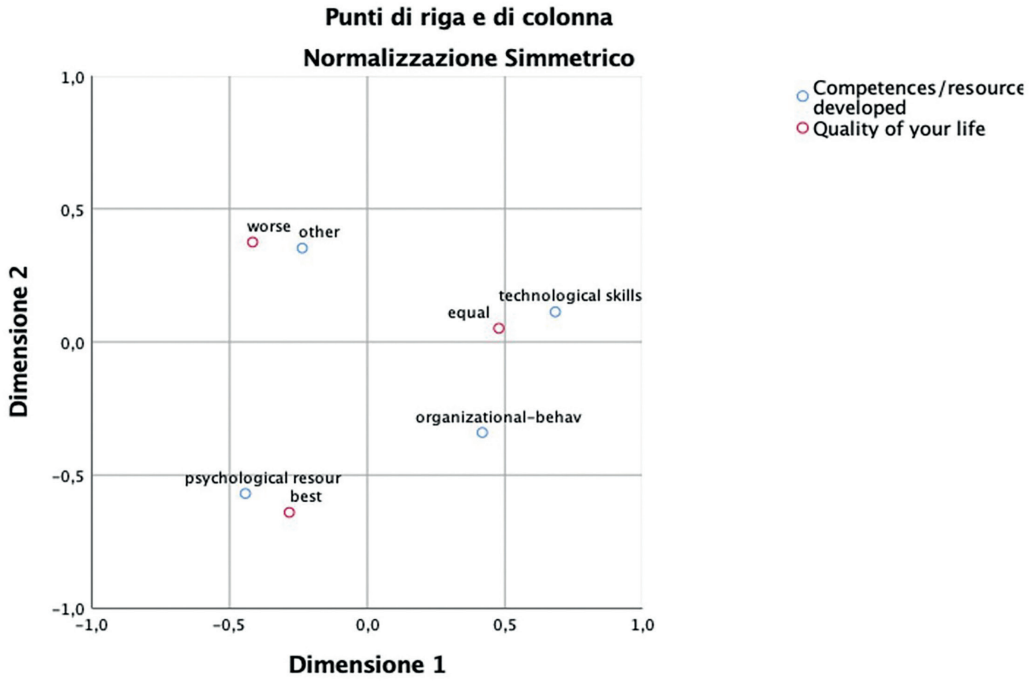


Fig. 2. Results of correspondence analysis of quality of life and competences and resources developed

Discussion

The present study aimed to detect the impact of the changes in working routines during the restrictions imposed by the pandemic on the quality of life of a group of workers. The results show that, even though the majority of the respondents have adapted quickly to new ways of working, they experience a worse quality of their working performance and a worse quality of life in general, independently from their general subjective well-being. Through the analysis of the form of the answers provided to the open questions, we have identified some vocabularies (words or typical language habits or idioms) that can be considered as barriers to the action, as they are a source of worry and anxiety. In fact, the position taken by the respondent on the linguistic plan (e.g., *before was better, now is worse*) is associated with a cognitive representation of the present; the dealing with a problematic present is possible only after having developed the awareness about it.

Furthermore, the analysis of the content of the same answers allowed to identify the categories of motivations that led to experience a better or a worse quality of life; the categories negatively characterized are, i.e., less time and more work, social restrictions, negative work-life imbalance; the categories positively characterized are, i.e., more time and less work, stay at home, positive work-life balance.

The gender differences explored showed some interesting results: although no significant differences were found with regard to life satisfaction and subjective well-being, women perceived - differently from men - that they have worse overall quality of life because of less time, more work and more stress; moreover, men have the perception of a different work-life balance respect to the past, due to the life conditions during the pandemic, with respect to the women. Furthermore, men and women differ in the amount of positive or negative experience and their related quality of life: in fact, though the semantic associations between worse quality of life and social distancing, restrictions, and more stressful work loading, on one hand, and better quality of life with staying at home having more time for the family, and with working in a less stressful way, on the other, are similar for men and women, the position of these association in the space is very different, pointing out that men refer more positive experiences related to the pandemic situation while women report more negative ones.

The gender differences that emerged in our study are presumably linked to the way in which childcare, homeschooling and increased housework have been allocated in the intra-family space during the pandemic, depending on smart working and the demands of employers. It has been shown that these responsibilities, which were traditionally placed more on women, increased during the pandemic period to fall on mothers rather than fathers (Collins et al., 2021; Qian & Fuller, 2020). Another probable reason for the gender differences could be found in the different intensity or frequency of negative feelings felt towards the pandemic situation by women and men. For example, recent studies have shown that women report more high levels of threat and fear of Covid -19 than men (Nino et al., 2021; Sánchez-Teruel et al., 2021). Moreover, the increased fear of Covid-19 could play an important role between people's negative affects and their wellbeing (Zammitti, et al., 2021), being associated with the onset of PTSD symptoms during the pandemic (Di Crosta et al., 2020) and affecting people's quality of life (Ashraf et al., 2021).

Finally, the most represented skills and resources that the respondents are aware to have developed during the isolation are the psychological resources and the organizational-behavioural strategies. The first ones allowed our participants to deal effectively with the uncertainty and to experience a better quality of life.

Therefore, the different ways in which individuals have reacted to the pandemic by deploying their psychological resources can be a key factor in determining a more or less positive perception of their quality of life. Research in this direction has shown, for example, how being resilient and looking at challenges as opportunities for growth is linked to well-being under Covid-19 (Yamaguchi et al., 2020). Shek (2021) suggests that maintaining hope is an important factor in adversity in general as in the pandemic. Other studies have shown that higher levels of emotional intelligence correspond to greater social support seeking and lower levels of occupational stress during the pandemic (Valenti et al., 2021). In addition, resilience, hope, transcendence, and positive thinking seem to act as protective factors against chronic stress during the pandemic (Braun-Lewensohn et al., 2021).

Conclusions

The health emergency, together with the consequent situation of uncertainty in the various areas of life, has led to significant changes in lifestyle and in work for many individuals: a re-balancing of times and working spaces and, sometimes, a redefinition of career path, and an increasing restlessness (Woolston, 2020). In a very recent article, Akkermans et al. (2020) have argued that the Covid-19 pandemic can be considered a career shock that will have a major impact on people's work and careers. A career shock is "a disruptive and extraordinary event that is, at least to some degree, caused by factors outside the focal individual's control and that triggers a deliberate thought process concerning one's career" (Akkermans et al., 2018, p. 4). Specifically, the authors argued that the positive or negative direction of the impact will depend on the dynamic interplay between contextual and individual factors, differing for people across career and life stages. Subsequently, career counsellors are called to face new challenges in supporting their clients, helping them to undertake a sense making process; this means that a disruptive and extraordinary event is not necessarily a career shock in itself (Akkermans et al., 2020). Career counselling, moreover, can restrain the negative short-term consequences, transforming them into positive long-term effects and vice versa.

For these reasons, the career counselling contribution could be aimed: (a) to support workers in a new meaning-making process about their professional future, especially in the present times, as the emergency and its repercussions are not over (and probably will not be over for a long time yet); (b)to stimulate the deployment of positive resources to

manage a "new normality" (Šapal et al., 2021); (c) to make people reflecting on the personal and structural factors that hinder the person-work relationship (Blustein et al., 2020); (d) to help workers to connect personal life with work in a time perspective (Sarchielli, 2020).

Moreover, the advent of the pandemic has highlighted and exacerbated previous inequalities in the workforce, has weighed more heavily on the most vulnerable groups of workers and on women, and has brought into sharp relief the extent to which, even today, there are substantial differences in access to technology or the availability of technological tools.

For these reasons, it is important that post-pandemic career counsellors focus their efforts more on promoting practices that take into account the social context by becoming advocates for the most vulnerable (Drosos et al., 2021), aiming at the reduction of the inequalities in the society (Hooley & Sultana, 2016), and "engaging this time of crisis as an opportunity to help shape a world where decent, supportive, and dignified work is possible for all who want it"(Autin et al., 2020, p.492).

The results of the present study should be read considering its limitations: the small number of participants, the convenience sampling, the lack of a second administration after the pandemic, to evaluate the impact of the social restrictions and the work at home on the quality of life in a medium and long term.

Author Contributions
The authors contributed equally to this manuscript.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical approval
The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of Kore University of Enna (UKE-IRBPSY-06.20.04).

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Psychology Hub (2021)
XXXVIII, 3, 27-36

From the inside. How the feelings of the closeness and the remoteness from others changed during lockdown

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Article info

Submitted: 15 October 2021
Accepted: 17 November 2021
DOI: 10.13133/2724-2943/17595

«It is only when alone (that is to say, in the presence of someone) that the infant can discover his own personal life. The pathological alternative is a false life built on reactions to external stimuli.» (Winnicott, 1958, p.418)

Abstract

The study aims to explore the adolescents' affective dimension during lockdown, in particular how the perception and processing of the presence of others in adolescents' relational experience has changed and how their closeness and remoteness was experienced during the period of limitation of social relations. If lockdown forced young people to share spaces and times with family members, we asked if this forced stringency has favoured psychic closeness at home, or rather if it contributed to create new forms of remoteness, changing the perceptions of significant others. Moreover, the study intends to probe how and to what extent the health emergency impacted on school experience of young people. The participants were 113 middle and high school students aged between 11 and 18 years. Adolescents completed an ad hoc questionnaire to investigate their feelings of closeness and remoteness during lockdown and their experience to come back to school. Our results show that the closest affectional bonds during lockdown were with both family and friends. Pre-adolescents still rely on family ties, while adolescents are working on the construction of the social world outside the home, despite enforced confinement. To confirm the importance of the emotional experience lived through during lockdown, we observed that the return to school was strongly oriented by the most significant relationships perceived during lockdown that supported to come back to normality.

Keywords: adolescents; COVID-19; feelings of others; closeness/remoteness; experience of school.

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The impact of Covid-19 pandemic on adolescents' experience: family, school, and friends.

On 11 March 2020, the World Health Organization (WHO) declared the global pandemic due to the Covid-19 virus and consequently Italy, like many other countries, decreed a general lockdown leading to the closure of companies, public places, and schools. Prolonged physical isolation and the interruption of social life linked to school were and still are a reason for grave concern, generating numerous studies of the effects on the physical health and psychological well-being of young people (Chambonniere et al., 2021; Minozzi et al., 2021; Orgilés et al., 2021; Racine et al., 2020). As also Capurso and colleagues (2020) report, Compas (1987) had already highlighted how the way in which children and adolescents react to stressful events depends on various factors such as: the level of exposure, age, sex, psychological functioning and the influence of the adults closest to them. Shaffer & Kipp (2013) also highlighted how children are used to rely on adults and other "influential" figures who take care of their basic needs, those same adults whom the virus forced to cope with the difficult emergency between domestic closeness and social distancing once outside the home (Chu et al., 2021; Cimino et al., 2021; Westrupp et al., 2021). A recent study (Bülow et al., 2020) showed how the daily routine of families with teenagers changed during lockdown and how the imposition of new rules that forced them to forego seeing friends was experienced by most of the adolescents as legitimate, a legitimacy that they were able to justify with the need to contain the spread of the virus. In this sense, the article proposed by The Lancet Child & Adolescent Health (2020) also highlighted the other side of the pandemic: if on the one hand it was an opportunity for young people to develop and refine their resilience and adaptability, on the other hand, it has also allowed them - according to the criterion of "protection of the most vulnerable" - to appreciate more the value of social responsibility and self-sacrifice. Despite this, Minozzi and colleagues (2021) reported in their recent systematic review of the literature that for adolescents, rather than for adults, the closure of schools and social distancing entailed great difficulties and sacrifices, especially in light of the fact that it is precisely during adolescence that a sense of self is built through social relations with peers as they seek their own independence from the family. School closures was associated with significant lifestyle changes in all the students, regardless of age and gender, with consequent repercussions on mental and physical health in older children and adolescents (Esposito et al., 2021; Rundle et al., 2020). With the unexpected interruption of school, in fact, young people lacked the privileged place for the construction of social skills and relationships with peers (Lerner & Steinberg, 2009; Weeks & Asher, 2012); the impossibility of putting themselves to the test outside their own family has deprived them of the possibility of making that typical adolescent affective shift: from family as a source of safety and protection to peers as a source of social and emotional support (Moretti & Peled, 2004; Yang et al., 2020). Of the school experience, only Distance Learning remains, a teaching and study methodology perceived by adolescents as qualitatively distant from the experiences they had during face-to-face teaching (Izzo & Ciurnelli, 2020; Yates et al., 2021).

The effects of the Covid-19 pandemic continue to be felt even after returning to school: although the children have shown a good capacity for resilience by accepting the new school reality governed by measures to contain the virus, insecurity and nervousness accompany the return to in-presence schooling (Branquinho et al., 2021). In addition to the more direct effects of forced isolation and quarantine, loneliness as an unintended consequence of the containment measures of the virus appears to have been particularly problematic for young people. The impossibility of seeing their peers in person can in fact generate loneliness and bewilderment leading to even depressive and anxious affective responses in the most serious cases (Loades et al., 2020; Marques de Miranda et al., 2020; Minozzi et al., 2021). Good relationships with peers are, in fact, an important protective factor against the risk of feelings of social disconnection (Parent et al., 2021); in this case the network has been a useful resource for adolescents to cope with feelings of isolation due to the restrictions (Boursier et al., 2021; Cauberghe et al., 2021), but its use has not always proved adaptive: in some cases, lockdown has rather favored the compulsive use of the Internet and its functions, exacerbating the feelings of loneliness and avoidance with a negative impact on the psycho-social sphere (Dong et al., 2020; Fernandes et al., 2020). In their recent study, Musso and Cassibba (2020) highlighted how, during the Italian lockdown period, 35% of adolescents experienced feelings of anxiety and unease, 32% felt low levels of optimism and 50% had low expectations for the future. Can we then, to use the words of Aime and colligue (2020) speak of a «theft of the future» committed to the new generations? Of course, as Nocentini (2021) point out, younger generations may be less aware of the implications of such a crisis and, enjoying family protection and resilience mechanisms, they may be more effective trying to make the best of the stressful impact of the pandemic. If young people are credited with good resilience skills, other essential dimensions must also be recognized such as planning and control, social competence in the use of resources and backing but also self-efficacy and hope and trust in the future (Peirone, 2020).

Method

Aims

Based on what has been said so far, the present research study aims to explore how adolescents' feelings have changed during the lockdown. In particular, it intends to probe how the perception and processing of the presence of others in their relational experience has changed and how their closeness and distance was experienced during the period of limitation of social relations imposed by the pandemic. Through a qualitative methodology, the experiences of adolescents relating to their affective relationships with family and friends, during the confinement to which they were forced as a containment measure of COVID 19 were analyzed.

Lockdown imposed a forced closeness within the home on the young people: they were forced to share spaces and times with the people closest to them. We can ask ourselves if this forced stringency has favored psychic closeness, if it has

increased relationships within families, if it has strengthened relationships within the home. Or rather it may have contributed to exacerbate or reveal frictions and conflicts.

At the same time, this confinement prevented the adolescents from being with their friends, relatives and acquaintances. We can ask ourselves if other people further away, those who lived outside the home, have really remained at a distance even in psychic terms or have they not gained psychic ground where the virus drastically took it away from them in "flesh and blood".

In this way we probe the affective dimension of the lockdown and in particular that one linked to the presence of others, their closeness and their distance, others in the family and those outside the family. We also ask ourselves if and how the lockdown changed the affective dynamics of otherness, typical of the period of adolescence, when, others who live outside the home, first and foremost friends, are put into the foreground, while those of the family seem to be relegated to second place.

Did adolescents know and were they able to maintain this reversal of affective priorities during the confinement imposed by the pandemic or did they have to fall back on the family not having friends available? Does this possible withdrawal resemble an emotional regression or did it offer the opportunity for an unexpected reconciliation?

We also wondered how and to what extent the health emergency from Covid -19 impacted on school experience. In particular, has distance learning succeeded in being a valid, although partial, substitute for the days spent in class? Did the feeling towards school, which collected up the previous in-presence experiences, influence the experiences related to distance learning? What affective connotation accompanied the return to school, shaped and regulated by the new containment measures? Did returning to in-presence schooling have the same affective resonance in adolescents as pre-adolescents?

Participants

The research involved 113 lower secondary school and upper secondary school students from central Italy in order to compare the experiences of pre-adolescents (11-13 years; 25 females and 18 males) and those of adolescents (14-18; 30 females and 40 males). The entire sample is made up of 55 girls and 58 boys with an average age of 14.02 years and s.d. 2.303.

The data were collected in-presence both in the lower secondary school (April 2021) and in the upper secondary school (May 2021). The anonymous questionnaire was dispensed during school hours by two school psychologists after obtaining informed consent from parents.

Instruments

In line with the qualitative analysis conducted by other studies relating to the pandemic on the experiences of young people (Branquinho et al., 2021; Fisher et al., 2021; Montanari, 2021; Scott et al., 2021; Yates et al., 2021), an ad hoc questionnaire was used to investigate, in the first part, the feelings of closeness and distance of adolescents in the moment of lockdown, through 4 open questions (With whom did you go through the lockdown period? Who did you perceive as closest? From whom did you feel the most distant? Who did you lose sight of?), while the second part concerns the young people's experience of school through the completion of sentences relating to:

- school moments (entrance, oral testing, recreation);
- school figures (relationship with classmates and teachers);
- emotional experience of returning to school;
- experience of distance learning;
- planning for the future.

Data collected in the second part of the questionnaire were used for a comparative analysis with the feelings of affective closeness and remoteness.

All responses were classified as "very positive", "positive", "neutral", "very negative" or "negative" by two independent observers-raters. Any disagreements regarding attribution were discussed until a consensus was achieved. The raters were psychologists: one of them was a female clinic psychologist and one was a male developmental psychologist; their average-age was 38,5; their professional experience post-degree about psychological research was respectively five years and twenty years.

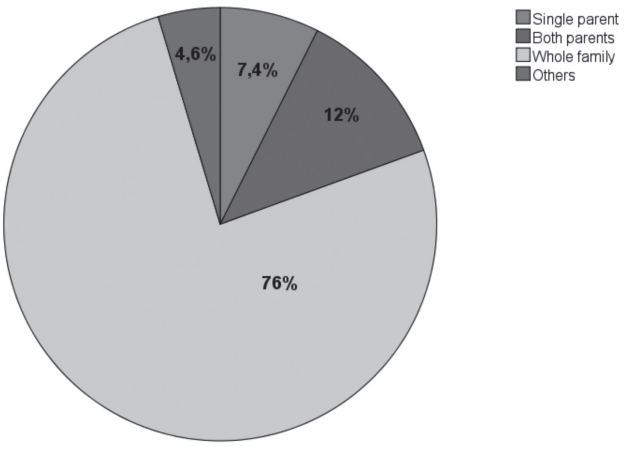
Data analysis

Psychometric analyses were conducted through the IBM SPSS Statistics statistical software version 25.0. In the present study the following statistical operations were performed: frequencies, Chi^2, Anova, Pearson correlations.

Data and Results

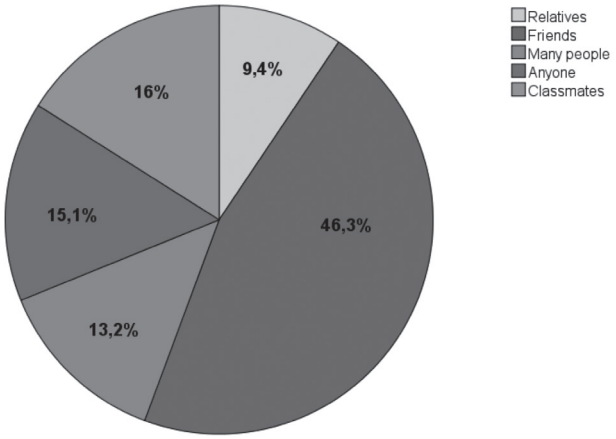
Our results showed that almost all adolescents and pre-adolescents spent lockdown with their family members (Fig. 1): 76% spent it in the company of the whole family made up of parents and siblings, 12% with their parents alone, 7.4% with one of their two parents, while only a small percentage of the children (4.6%) said they shared this period with people outside the family. Friends make up the group of people that adolescents and pre-adolescents lost sight of most (46.3%) followed by classmates (16%).

Fig. 1. With whom



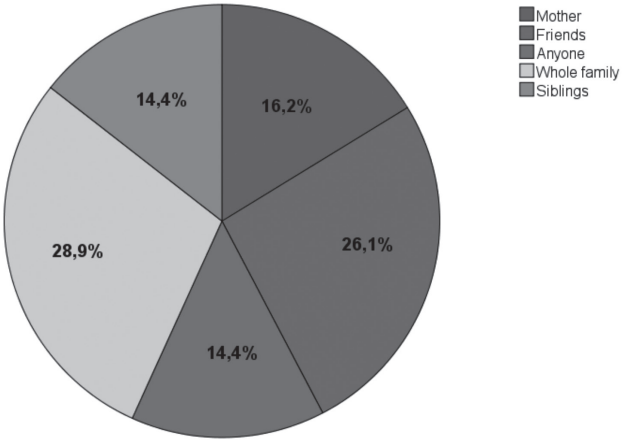
Only 9.4% of kinship relationships were penalized (Fig 2). 13.2% claim they have lost relationships with more people in their life, without specifying who they are. We can read this lack of specification as a resistance to recognize which relationships have been most penalized by the pandemic restrictions. Data relating to a modest percentage of young people (15.1%) also deserve attention, for they declare that the period of restriction does not seem to have influenced their social contacts. If we put together who limit themselves to declare that they have lost sight of many people and of those who claim not to have lost anyone, we can observe that almost a third of the sample (28.3%) responds to the affective impact of the lockdown by not configuring it in detail.

Fig. 2. Lost from sight



Among the relationships perceived as being the closest (Fig. 3), those with family members stand out (28.9%) to which, the addition of both siblings (14.4%) and the maternal figure (16.2%) results in their being the family members who occupied an important position during the lockdown period, while the grandparents are the most remote (Fig. 4). Immediately after the family, friends (26.1%) were indicated for their proximity. Only the 14% declared they felt that nobody had been affectionately close to them.

Fig. 3. Closeness



The experiences relating to the dimension of friendship show important percentages both in terms of closeness and remoteness: if for 26.1% of the children the mandatory restriction of being obliged to stay at home favored a sense of psychic proximity towards friends (Fig. 3), for 29.9% (Fig. 4), the latter were instead perceived as the most distant figures, confirming that friendships suffered the hardest blow during quarantine.

A more specific consideration can be reserved for classmates, who appear only among the lost figures (16%) or among people perceived as being more distant (9.6%), while they have never been mentioned among the figures perceived as closer, indicating that the lockdown heavily affected the school experience.

Among family relationships, grandparents (22.1%) were perceived to be the most distant, corresponding to the impossibility of visiting them imposed by the restrictions. But how can the statement of children who declare the distance from one of their parents (11.5%) or siblings (7.7%) be read? A feeling of distance was felt despite the forced proximity.

The results also show the presence of significant differences in the perception of psychic closeness (Fig. 5) and remoteness (Fig 6) between middle school pre-adolescents and high school adolescents during lockdown. If for pre-adolescents the other felt as being closest was undoubtedly one of the family members, in particular the maternal figure (28.6%) or fraternal (31%), for the high school teens the feeling of closeness towards

Fig. 4. Remoteness

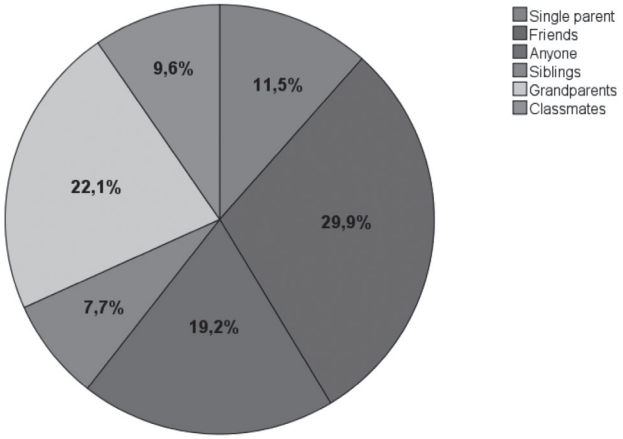
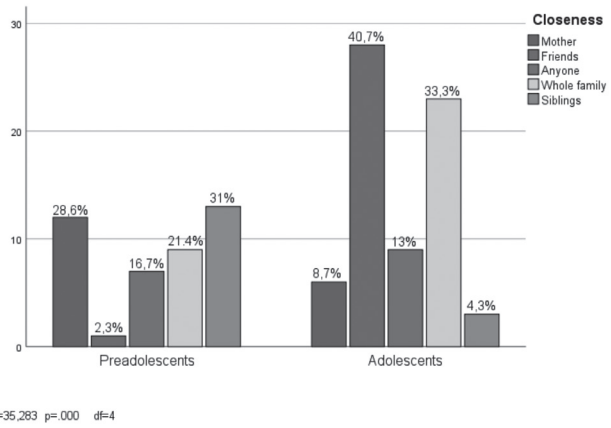


Fig. 5. Age * Closeness



$\chi 2=35.283$ p=.000 df=4

Fig. 6. Age * Remoteness

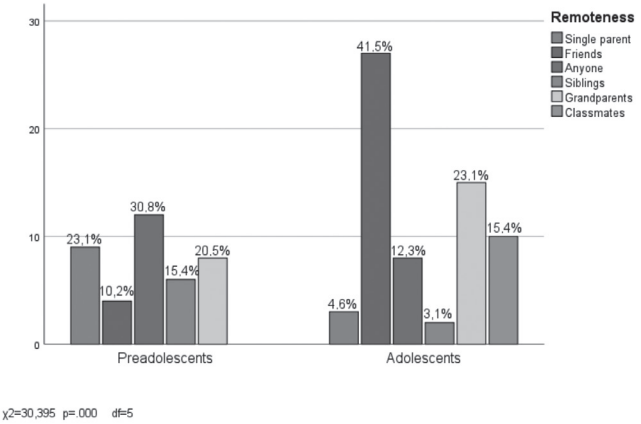
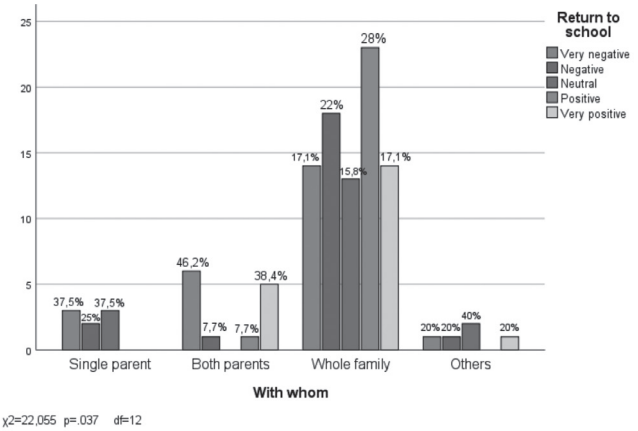


Fig. 7. With whom * Return to school



family members was matched by that experienced towards friends (40.7%). If the common experience for both groups was the perceived distance from the grandparents (20.5% for pre-adolescents, 23.1% for adolescents), adolescents, unlike the younger children, say that their affective dimension of distance is mostly occupied by friends and school ties (Scott *et al*., 2021).

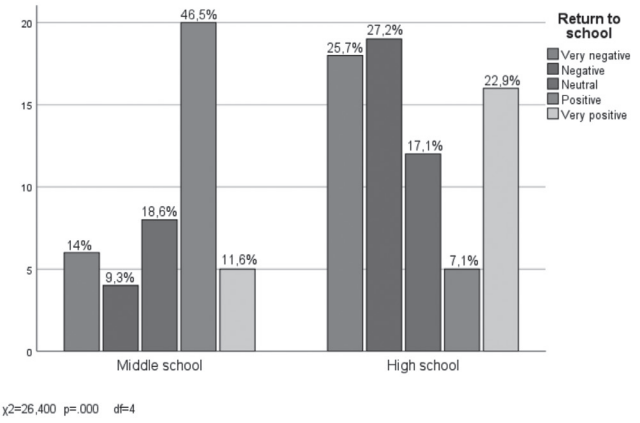
We wondered if the emotional experiences during lockdown influenced the teens' feelings about going back to school (Fig.7). In the table we observe feelings related to the return to school regarding the people with whom the lockdown period was shared. Those who experienced confinement in the company of parents, brothers and sisters experienced a positive (17.1%) or very positive (28%) return to school, confirming the family as a factor of resilience even in the COVID-19 emergency. On the contrary, those who experienced lockdown with only one parent found it very difficult to return to school, experiencing very negative (37.5%), negative (25%) or neutral (37.5%) feelings. Even the only child who shared lockdown with both parents seems to have struggled to return to school. Most of them experienced very negative (46.2%) or negative (7.7%) feelings.

Here are some adjectives that adolescents and pre-adolescents used to describe their return to school that reveal their feelings, both positive (the return to school was: exciting; motivating; quite challenging) and negative (it was: muddle-headed; eventful; useless; strange; unsettling; heavy going; difficult; quite complicated; very traumatic). Their phrases reveal also their ambivalence in dealing with the return to school: "It was very traumatic, it quite shook me up"; "The difference with and without the pandemic was immediately felt and many things changed, especially the relationship with school"; "It was quite challenging with all the new rules and it was difficult to get used to the pace of being in presence"; "it was harder than previous years"; "It was different from what I expected"; "It was motivating but it didn't last long".

As far as the return to school is concerned, our results highlight significant differences between adolescents and pre-adolescents (Fig.8): while on the one hand most of the middle school students experienced the return to school as a positive moment, barely touched by the lockdown experience, on the other hand high school students describe the lockdown as a delicate moment, finding themselves divided between intense positive experiences, full of enthusiasm, and deeply negative experiences, crossed by feelings of strangeness and distrust. Middle school children were enthusiastic about going back to school, reaffirming the centrality of the school experience in the social life of pre-adolescents. The high school teens instead projected their tendency towards affective polarization on back to school: if we add up the very negative feelings and the negative ones, we find that 52.9% perceived the return to school negatively against the 30% of positive and very positive feelings.

In general, our results didn't show any significant differences based on gender.

Fig. 8. School attended * Return to school



Discussion

Our results showed that most adolescents and pre-adolescents of our sample spent lockdown with their family members as we expected. Observing instead who was lost from sight during lockdown is possible to point out a percentage of young people declaring that the period of restriction does not seem to have influenced their social contacts. Here we could read a certain tendency towards affective neutralization that struggles to take note of the turmoil brought about by lockdown in the relational field. If we put together the tendency towards the generalization of those who limit themselves to declaring that they have lost sight of many people and of those who claim not to have not lost anyone – and in doing so avoid considering how their relational life has been modified by restrictions - we

can observe that almost a third of the sample responds to the affective impact of the lockdown by not configuring it in detail.

The place of closest proximity is therefore disputed by family and friends (Field et al., 1995). Among family members the role of siblings appears to have been particularly salient during the COVID-19 pandemic. We can think that for many adolescents, siblings served as the only "peers" consistently present in-person in their daily lives, and they would be able to help each other cope with stress from the pandemic (Campione-Barr et al., 2021). A significant dispute that could show the attempt of these young people to broaden their relational horizon beyond the home, even during the period that the pandemic compelled them to an enforced confinement within the family. If adolescence indeed represents the stage of gradual independence from the family and the establishment of new emotional support and social development through peer interactions, according to Ellis & Zarbatany (2017), the enlargement attempt we are observing could be read as resilience in maintaining the relational needs typical of adolescence beyond the family. This enlargement is, however, balanced by the massive perception of the closeness of the family, which is gladly given a place of honor, with a predilection for siblings and for the mother figure. This closeness could be interpreted as a containment of the conflictual forces that typically affect the original emotional relationships during the period of adolescence (Holmbeck et al., 1995; Michael & Ben-Zur, 2007; Paikoff et al., 1993; Paikoff & Brooks-Gunn, 1991; Smetana, 1989). We prefer not to ignore a little percentage that declares they felt that nobody had been affectionately close to them, it could refer to a certain tendency to neutralize the affective impact of the lockdown, as already observed about who was lost from sight during lockdown.

According to other research studies (Daniunaite et al., 2021; Loades et al., 2020; Rogers et al., 2021) our results show that friendships suffered the hardest blow during quarantine and that lockdown heavily affected the school experience (Esposito et al., 2021; Klootwijk et al., 2021; Sabato et al., 2021; Scott et al., 2021)

Among family relationships, grandparents were perceived to be the most distant, corresponding to the impossibility of visiting them imposed by the restrictions. But about remoteness the more interesting results were obtained by children who declare the distance from one of their parents or siblings. Here we found feelings of distance experienced despite the forced proximity. We could interpret these feelings as the apparently weak signal of the latent conflict that teens were actually forced to live with their family members with whom they shared spaces and times (Chung et al., 2020; Orgilés et al., 2020; Romero et al., 2020; Romm et al., 2021; Roos et al., 2021; Westrupp et al., 2021). This may have been the field of conflict that teens were forced to rework during lockdown: *too close to agree, too close to share*.

Forced proximity has therefore not strengthened family relationships tout court, nor has it exacerbated conflicts in a clear way. Rather, the very close sharing has called into play the work related to the affective elaboration of relationships and their emotional meaning: the construction of affective closeness does not rely on the mere sharing of times and rooms (Aljunaidy & Adi, 2021). On the one hand, according to Prime (2020) and Cimino (2021), the COVID-19 pandemic could have influenced children's affective environment by cascading effects based on parents' stress and worries associated with the consequences of restrictions in their social and work life. On the other hand, the enforced lockdown was a delicate moment that forged affective relationships even inside the home, indicating that to accept the other is a competence that does not rely on proximity or living under the same roof as such - for months we shared times and spaces with family members -, but it requires sharing the thoughts of the other and the esteem for the affective construction of the difference that the other always represents, even the most significant one, even the one with whom we have lived side by side all day for two long months (Chu et al., 2021; Laible et al., 2000; Liang et al., 2021)

Even the emotional experiences during lockdown show the characteristic differences between pre-adolescence and adolescence: pre-adolescents still rely on family ties, cultivating specific bonds of attachment with the mother figure and with siblings, while adolescents are working on the construction of the social world outside the home, despite enforced confinement (Ellis & Zarbatany, 2017; Noller, 2005; Paikoff et al., 1993).

An aspect relating to the feelings of closeness experienced by adolescents deserves special reflection. Individual attachment figures such as the mother and siblings do not seem to maintain high investments, while the family as a whole maintains its centrality, although the affective primacy is taken by friendships. Adolescents maintain bonds with a complex object called "family", which is perceived in terms of emotional proximity. A "compacting" that could be read as an indication of a latent conflict, shown through weak signals, with parental and fraternal figures. The attachment figures seem to dissolve into a general entity called "family", perceived as a coalition to be contrasted with another coalition, that of "friends". friends and family tout court compete for the affective attention of adolescents (Bülow et al., 2020; Li et al., 2021; Racine et al., 2020).

We can wonder how these young people were able to foster the perception of closeness with friends while they were confined at home: while it was impossible to meet people in person, online exchanges supported the perception of closeness. The online /offline dialectic has been resolved entirely in favor of cyber-relationships that have allowed teens to continue living and perceiving social relationships beyond the family circle (Cauberghe et al., 2021; Fernandes et al., 2020; Stockdale & Coyne, 2020). Adolescents found themselves constricted between the distance from significant others and the reduction of social life because of people lost from sight. A difficult period that was explored also from research studies about dreams during the lockdown. Their results show that if adults' dreams point out both pleasant memories linked to experiences forbidden during lockdown (i.e., traveling, meeting friends), adolescents' dreams are focused on relationships with others, with specific relation to home confinement, the school, friends and family members in danger (Sommantico et al., 2021).

Our results show feelings related to the return to school related to the people with whom the lockdown period was shared. Those who experienced confinement in the company of family members the return to school was

positive, confirming the family as a factor of resilience even in the COVID-19 emergency (Cimino et al., 2021). On the contrary, those who experienced lockdown with only one parent found it very difficult to return to school. A fact that could be read as a resistance of these teens to come out of a kind of regressive affective shell, a tête-à-tête that confinement may have fueled. For these teens, the return to school seems to have represented the breaking of a symbiosis which, however, denounces regressive impulses that risk slowing down the conquest of emotional independence. Even the only child who shared lockdown with both parents seems to have struggled to return to school. Even the only child therefore seems to have compensated the narrowness of confinement with a surplus of attachment to parental figures, suffering a backlash of shyness when it was possible to return to extended social relations. For the only child and for those living in a single-parent family it was therefore not easy to return to normality, confirming that the impact of the pandemic has left significant marks in the processing of affections and not only because of the practical constraints it introduced into family life.

The different attitudes about return to school between preadolescent and adolescents show what role the school experience plays among the pre-teens: middle school teens experience a profound extension of social and emotional relationships thanks to school. For pre-adolescents, friends outside the home coincide with schoolmates, confirming the centrality of the educational institution in fostering their growing up. Adolescents, on the other hand, cultivate friendships outside the home in different environments, and school is only one of the social and emotional contexts in which adolescents explore. School, therefore, becomes a field for adolescents to test their emotional experience and success where school is concerned. Thus going back to school for the older ones means going back to facing new questions, adults and professors who ask them for new learnings and peers who call them for new interchanges (Scott et al., 2021).

The affective dynamics that we have detected can be traced back to the psychodynamic terms with which Winnicott describes the ability to be alone as a sign of affective maturity. "*The basis of the capacity to be alone is the experience of being alone in the presence of someone*." (Winnicott, 1958, p. 417 our emphasis). Lockdown imposed a forced closeness within the home on the children; at the same time, the confinement kept the children away from friends, relatives, and acquaintances. On the one hand, our results show that the forced stringency with family members did not accentuate the conflict with parental figures typical of the adolescent period. Rather, the students in our sample seem to have maintained the aspiration to an expansion of affective investments in friends despite the impossibility of spending time with them in presence. Indeed, they recognized that the closest affectional bonds during lockdown were with both family and friends. The pre-adolescents relied mainly on family ties, cultivating specific bonds of attachment with the mother figure and with their siblings, while the adolescents continued to work on the construction of the social world outside the home, thanks to the usage of technological devices, despite the forced confinement. According to Winnicott (1958), affective maturity can take the form of the ability to be alone in the company of reliable significant others. Where the children were able to rely on supportive significant others at home, they were able to experience the capacity to maintain their own autonomy and their own subjectivation even in conditions of very close proximity. In this sense, the period of emergency also represented an opportunity to strengthen what Winnicott calls ego-relatedness, which happens when «the relationship between two people, one of whom at any rate is alone; perhaps both are alone, yet the presence of each is important to the other» (Winnicott, 1958, p.418).

Conclusions

The present research explored how pre-adolescent and adolescent feelings changed during lockdown. In particular, we noted how the perception and elaboration of the presence of others in their relational experience changed and how their closeness and remoteness was experienced, despite the social restrictions caused by the pandemic. For these purposes, the experiences of pre-adolescents and adolescents, related to their family and friend relationships in the period March-May 2020, the experiences related to distance learning and their return to school in September 2020 were analyzed.

Our results show that our sample of students during lockdown did not live in solitude, but had the opportunity to have an unprecedented experience of their affective competence. An experience that, on the one hand, strengthened the relational preferences typical of the adolescent transition, and on the other hand tested the supportive strength of family and friend relationships.

The closeness to loved ones is therefore distributed between family and friends, confirming the affective dynamics of otherness typical of the period of adolescence which tend to favor friendships, in an attempt to put family members in second place. The feelings of closeness, therefore, seem to document a continuity of the experience that has not been turned upside down by the pandemic. A continuity that could also be read as the emotional resilience of young people in coping with the emergency.

On one hand, the children in our sample, despite not being able to socialize with their friends face-to-face, have worked to cultivate friendships without giving in to a regressive withdrawal towards family members. On the other hand, it was precisely the relationships at home that were affected by the remoteness of affectional bonds interpreting a sort of emotional paradox that we could summarize as follows: *too close to share*. Physical proximity was not automatically transformed into psychic proximity but provided the opportunity to interpret both directions of emotional processing: a possible terrain of closeness or, on the contrary, a time for conflictual distance.

To confirm the importance of the emotional experience lived through during lockdown, we observed that for the majority, the return to school was strongly oriented by the most significant relationships that supported the return to normality. However, there was no lack of regressive temptations for the only child and for children who experienced the lockdown with only one parent. Two relational circumstances that risked

transforming closeness into adhesiveness, producing a sort of resistance to returning to social life in presence.

Limitations and future research

This study has several limitations. One of these is the small sample sizes; a bigger sample would allow for a more sophisticated statistical analysis. The second limitation regards the fact that the participants were recruited through convenient non-random sampling. Thus, generalizations cannot be made about the whole population. In addition, the number of lower and upper secondary school is not equally distributed. It would be interesting in future research to conduct an exploratory factorial analysis of the answers to the questionnaire to identify the factors that constitute the affective school experience of young people. Moreover, to analyse the emotional aspects could contribute to current research (Tambelli et al., 2021) about a possible model of the pandemic on PTSD symptomatology COVID-19 related.

Author Contributions
The authors contributed equally to this manuscript.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

Funding
The authors received no financial support for the research, authorship, and/or publication of this article.

Ethical approval
All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Psychology Hub (2021)
XXXVIII, 3, 37-46

Career planning during the COVID-19 pandemic. Training for strengthening courage and career adaptability and lowering fear levels of COVID-19

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Article info

Submitted: 14 October 2021
Accepted: 20 November 2021
DOI: 10.13133/2724-2943/17586

Abstract

Career development starts from childhood and during adolescence professional planning becomes a very important activity that is influenced by internal and external factors: the COVID-19 pandemic can be one of these factors. To overcome the fear that may arise about the current situation and to be able to plan their future considering recent changes in the world of work, adolescents need positive resources such as courage, defined as the tendency to act despite fear, and career adaptability, the ability to adapt to changes in the world of work. With the aim of lowering the levels fear of COVID-19 and raising the levels of courage and career adaptability, a training was developed that involved 63 adolescents (experimental group); another 62 adolescents (control group) were involved in pre- and post-training measurements. The results showed that the experimental group, after training, had lowered the levels of fear of COVID-19 and raised personal resource levels, while the control group showed higher levels of fear of COVID-19 in the second administration. This means that guidance practices can have an impact on the emotional experience of young people in the period of the pandemic and support them in planning their future

Keywords: career planning; fear of COVID-19; courage; career adaptability; career education.

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Introduction

Career development is a lifelong process influenced by both internal and external factors of the individual (Bohlmann et al., 2018; Ferrari et al., 2015; Savickas & Porfeli, 2012; Marcionetti & Rossier, 2016); this means that even the things that happen in the surrounding environment can have an impact on career planning (Bynner, 2012).

On March 11, 2020, the World Health Organization officially announced the COVID-19 pandemic (World Health Organization [WHO], 2020), which has blocked public life and dealt a severe blow to the global economy (Bakker & Wagner, 2020). Recently, the International Labor Organization (ILO) estimated the unemployment rate to rise to record highs (International Labour Organization [ILO], 2020).

The future has become unpredictable, and this post-COVID-19 unpredictability opens the way to a condition within which it becomes difficult to make choices and plan one's career path. People during a pandemic show fear and anxiety (Taylor, 2019). Fear is part of those emotions that influence thinking and behavior (Cherry, 2019); Research by Mahmud et al. (2020) showed that fear of COVID-19 affects career decisions. All this is particularly true for the new generation that is going through this historical moment, and which has been defined as the "lockdown generation" (Goyal et al., 2020; International Labour Organization [ILO], 2020; Killgore et al., 2020), subjected to a heavy psychological burden. But it is equally true for the younger generations who, although not yet directly involved in the professional world, are negatively affected by the effects of the pandemic (Commodari & La Rosa, 2020).

A feature of adolescence is the emotionality that comes from the physical and chemical changes typical of this period (Bailen et al., 2019) and adolescents rely heavily on their peer group for emotional and social development (Ellis & Zarbatany, 2017). However, the pandemic has forced governments to take restrictive measures that have resulted in all people spending a lot of time in their homes, including teenagers who have experienced an online school mode, physically separated from their peers. It is in this situation that they have shown a reduction in mental health, with symptoms of anxiety and depression (Hawke et al. 2020; Chen et al. 2020), concerned about the impact of the pandemic on their education (Ellis et al. 2020). For this reason, psychologists during the period of the pandemic wondered how to support young people, supporting the importance of personal resources to face the future (Karataş et al., 2021).

Among the positive resources useful in dealing with fear is courage, described as a dimension capable of allowing individuals to act despite fear (Norton & Weiss, 2009). Courage, in fact, helps people to resist external problems and to maintain the desire to do things (Magnano et al., 2019). Furthermore, it plays the role of a protective factor in dealing with risky and stressful conditions (Magnano et al., 2017) and in career choices and career path planning despite current fears (Watson, 2003). Courage mediates the relationship between fear of COVID-19 and pessimism towards one's own professional achievement (Zammitti et al., 2021a) and is positively correlated with career adaptability (Magnano et al., 2021).

This last dimension is deeply linked to change and represents the ability to adapt to changes in the world of work (Savickas, 1997), but also indicates the availability of resources that allow people to cope with the difficulties that may be encountered in professional development, including transitions and traumatic events (Savickas & Porfeli, 2012); is of particular importance during a crisis such as the COVID-19 pandemic as it can help people see the possibilities of unexpected changes, invest in those changes, and recover from unpredictable outcomes (Rudolph et al., 2017). It can also help people respond to change in a calm and composed way (Tripathy, 2020) and stimulate more possibilities in a complicated situation (Ginevra et al., 2018).

Aim of the study

COVID-19 event influences the inclusion of young people in the world of work (Wanberg et al., 2020), contributing to creating greater difficulties in identifying future goals as it is concentrated on managing the present situation (Bianchi, 2020). Starting from this perspective, with the present study, a training was created with the aim of promoting personal resources of courage and career adaptability and lowering fear levels of COVID-19.

Specifically, it was hypothesized that the students participating in the intervention will show an increase in courage and career adaptability and lower levels of fear of COVID-19, after the training; it was also expected that these levels were different, in the post-test, compared to the control group and that the latter did not show any significant difference between the two pre- and post-test protocol compilations.

Method

Design, Participants and Procedure

This study involved 125 adolescents (64 males and 61 females) aged between 11 to 14 years (M = 12.46; sd = .60), divided into an experimental group (N = 63) and a control group (N = 62). The participants in the experimental group were involved in six career education meetings during which activities were proposed for the reduction of the levels of fear of COVID-19 and the enhancement of courage and career adaptability.

Two schools were contacted and invited to participate in the experiment. Both have declared themselves available, involving 3 classes each. The classes involved were those that the following year would have had to make the choice with respect to the high school to attend; it seemed appropriate to involve these classes to stimulate reflections on the choices in advance, and not in the vicinity of the choice itself. In a completely random way, the classes were selected to be part of the control group or the experimental group. The pupils were informed of the trial and received an invitation to participate completely voluntarily in the research and after having obtained parental consent. The inclusion criteria were to be available to actively participate in the research and to have signed parental consent.

Both in the case of students involved as an experimental group and in the case of students involved as a control group, the parents received an invitation to let their children participate in the research. The parents signed their consent to participate in

the program (in the case of the experimental group) or to only administer the research protocol (in the case of the control group). All parents signed their consent to the child's participation, so no students were excluded. The entire course was conducted in the classroom, during school hours, by a career counsellor. The students were divided into groups of 20-22 adolescents each. The data was collected in the period between February and May 2021.

Life Design Approach

The training was designed with reference to the Life Design approach (Savickas et al., 2009) which was born as a response to the changes and challenges of the 21st century and considers the individual active in building his own career (Masdonati & Dauwalder, 2010). Individuals, in fact, do not passively undergo transformations, but try to react to face the context they will have to face (Almudever et al., 1999). This approach emphasizes the strong relationship between the various ambient of life; in fact, career development comes from the interaction between a person and their environment. Consequently, all areas of life relevant to people must be considered in career construction (Nota & Rossier, 2015; Savickas et al., 2009). This translates into particular attention to qualitative activities that allow to assigning to the subjects an active role during the information collection and analysis process, and work very well within groups and emphasize the global study of the person (Soresi & Nota, 2010).

The Life Design approach, therefore, becomes an accompaniment in the co-construction of the best path for the construction of the individual's life, without neglecting the development and strengthening of some important personal resources (Masdonati, 2007). The effectiveness of this approach in triggering reflections has been demonstrated with both adults (Cardoso, Silva, Gonçalves & Duarte, 2014) and adolescents (Cardoso et al., 2016).

Training

Participants in the experimental group were involved in six meetings lasting two hours each. Each meeting was held on a weekly basis and during the first and last meeting the previously described evaluation protocol was administered. The meetings, summarized in Table 1, were as follows:

First meeting. During the first meeting all participants, including the career counsellor, introduced themselves. Then students filled out the assessment protocol and watched videos about the change. Together with the counsellor, students reflected on the changes resulting from the pandemic and reported in writing the emotions that trigger these changes and how they can affect their choices. Career counselor stimulated reflection on the fear emotion, which emerged during the confrontation, proposing a less negative view.

Second meeting. Taking up the theme of emotions, students read and compiled a stimulus-story adapted from the stories of "The right choice? Mine!" (Magnano, 2011). However, the story has been modified to reflect the fear of COVID-19 and have a less negative view of it, as a core emotion that allows people to reflect and deal with a problematic situation. In support of this, a video on basic emotions was used. In both cases the students were invited to discuss their ideas in group.

Third meeting. Based on the answers received in the previous meeting, fear was linked to the concept of courage. Students reflected on the fact that courage is the tendency to act despite fear, then they identified their model of courage. Each participant was asked to think of three people who, despite fear, acted to achieve their goals. Of these people, participants were asked to identify one and answer stimulating questions to encourage confrontation with themselves: What can you learn from this person? Do you resemble them in things? What can you do to look more like her? This activity was also effective in other training (Zammitti et al., 2020).

Fourth meeting. Another stimulus-story was proposed in this meeting, together with the viewing of some videos on courage and the importance of reflecting on one's future. The videos invited participants to believe in themselves in planning the future and the reflections were reported in writing and then orally, during a group presentation.

Fifth meeting. During the fifth meeting, to stimulate career adaptability, participants carried out activities in groups: using the profession cards of the 3IP (Iconographic Professional Interests Inventory, Boerchi & Magnano, 2015), participants were asked to think about the professions of the future after the pandemic: how will they change? Will there be new professions? What positive aspects are there in these changes? During the restitution, participants reflected on the possibility of caring positively about their future.

Sixth meeting. Participants were asked to read and answer the questions of a third stimulus-story on professional design and watch other videos on change and the future. These activities summarized what had been discussed in previous meetings. At the end of the meeting, after a final return, the research protocol was again administered.

Tab. 1. **Contents of the training**

Meeting	Dimensions	Activity
1	Knowledge	Presentation and administration of the evaluation protocol (T1)
	Fears of COVID-19	Watching videos and written reflections
2	Fears of COVID-19	Stimulus-story and group reflections
		Watching video and group reflections
3	Courage	Brainstorming on the definition of courage
		Courage model
4	Courage, Career adaptability	Stimulus-story and group reflections
		Watching videos and written reflections
5	Career adaptability	Professions of the future
		Discussion on concern for the future
6	Fear, courage, and career adaptability	Stimulus-story and videos
	Closing	Closing and administration of the evaluation protocol (T2)

Measures

Before and after the intervention, the groups compiled a protocol containing the following measures. Reliability was considered acceptable if Cronbach's alpha value was as low as 0.60, as indicated by the literature (Taber, 2018).

Biographical Data. They were required to indicate their age and gender.

Fear of COVID-19. These are three items that were initially used to assess fear of SARS (Wu et al., 2009) but which were also suitable for assessing fear of coronavirus (Zammitti et al., 2021b). The scale assesses negative concerns about COVID-19. Through a 5-point Likert scale, from 1 (not at all) to 5 (a lot), the participant must indicate how much they feel a certain way about COVID-19. An example item is: "Thinking about COVID-19 makes me feel anxious". Cronbach's alpha for the study sample was 0.84 at pre-test and 0.89 at post-test.

Courage. Six items of the Italian version of the Measure of Courage were used (Norton & Weiss, 2009; Ginevra et al., 2020); the scale is composed of items rated on a 7-point Likert scale from 1 (never) to 7 (always). The participant is asked to indicate how well each statement fits themselves. An example item is "Even if something scares me, I will not back down". Cronbach's alpha of the study sample was 0.84 at pre-test and 0.69 at post-test.

Career Adapt-Abilities. The Italian version of the Career Adapt-Abilities Scale (Soresi et al., 2012) was used. The scale consists of 24 items on a 5-point Likert scale from 1 (not strong) to 5 (strongest); the participant is asked how much he feels capable of doing that thing expressed in each of the statements. The scale measures a total point of career adaptability and simple item is "Preparing for the future". The Cronbach alpha indices of the study sample were respectively 0.90 at pre-test and 0.96 at post-test.

Data Analysis

Data analysis was conducted using SPSS 25.0 statistical analysis software. Before evaluating the effectiveness of the training, it was verified whether there were any differences between the control group and the experimental group at the time of the first administration of the research protocol (T1), relative to gender, age and the variables evaluated; no significant differences emerged between the two groups for *gender* ($X^2(1) = .652$, $p = 0.419$), *age* ($t(123) = -1.561$, $p = 0.121$), *fear of COVID-19* ($t(123) = 1.115$, $p = 0.267$), *career adaptability* ($t(123) = 1.233$, $p = 0.220$) and *courage* ($t(123) = 0.124$, $p = 0.902$).

To verify the research hypotheses, the following methods were used: to evaluate the effectiveness of the training, the differences between the pre-test (T1) and post-test (T2) phases within the experimental and control group were calculated, using independent sample *t*-test (Kirkwood & Sterne, 2010); moreover, we verified at post-test (T2) if there were any differences between the experimental and the control sample, using the paired-sample *t*-test (Peck, Olsen & Devore, 2015). As an additional metric of effect-size, Cohen's d was also analysed. Cohen's d effect size is one of the most popular indices in psychology. For the interpretation, the following general guidelines are often used: small (< 0.2), medium (< 0.5) and large (< 0.8) effect (Cohen, 2013; Magnusson, 2021).

Results

The independent sample *t*-test showed significant differences between pre-test and post-test in the experimental group, regarding these dimensions: *fear of COVID-19* ($t(62) = 6.198$, $p = 0.000$), *career adaptability* ($t(62) = -4.977$, $p = 0.000$) and *courage* ($t(62) = -2.857$, $p = 0.006$). In the control group there was only one difference between the first administration (T1) and the second (T2), relative to the dimension *fear of COVID-19* ($t(61) = -3.606$, $p = 0.001$).

As for the differences found in the experimental group, it is possible to interpret the effects as medium in the case of *career adaptability* (difference between means = 0.26, Cohen's $d = 0.41$) and *courage* (difference between means = 0.35, Cohen's $d = 0.28$), and as large in the case of *fear of COVID-19* (difference between means = 0.58, Cohen's $d = 0.57$). In the case of the control group, the effect on *fear of COVID-19* is medium (difference between means = 0.42, Cohen's $d = 0.40$); the latter group shows insignificant, and therefore irrelevant, effects in the dimensions of *career adaptability* (difference between means = 0.07, Cohen's $d = 0.11$) and *courage* (difference between means = 0.10, Cohen's $d = 0.06$). Table 2 and Figure 1 summarizes these results.

Tab. 2. Means and standard deviations of the experimental and control group at pre- and post-test

	Experimental group						Control group					
	Pre (T1)		Post (T2)				Pre (T1)		Post (T2)			
Measure	M	SD	M	SD	p	Cohen's D	M	SD	M	SD	p	Cohen's D
Fear of COVID-19	2.84	1.05	2.26	0.97	.000	0.57	2.63	1.03	3.05	1.05	.001	0.40
Career adaptability	3.75	0.58	4.01	0.67	.000	0.41	3.63	0.49	3.56	0.68	.441	0.11
Courage	4.89	1.22	5.24	1.22	.006	0.28	4.86	1.37	4.76	1.78	.662	0.06

Fig. 1. Differences between training group and control group at pre- and post-test

Fig. 1a. Fear of COVID-19

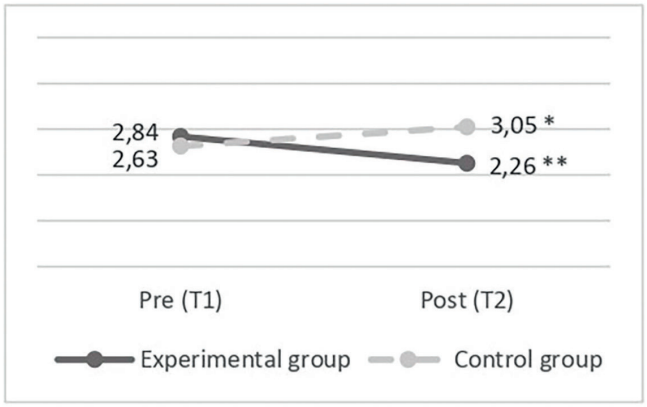


Fig. 1b. Career adaptability

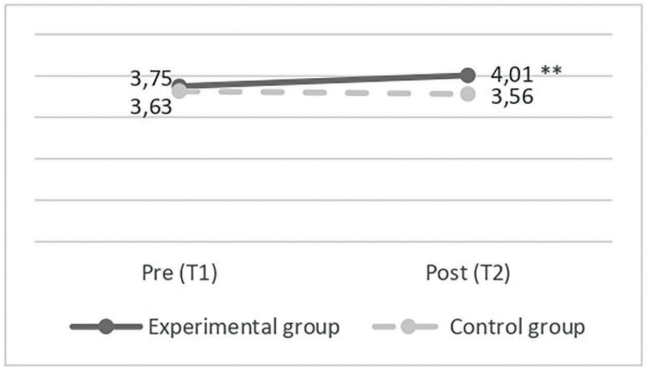
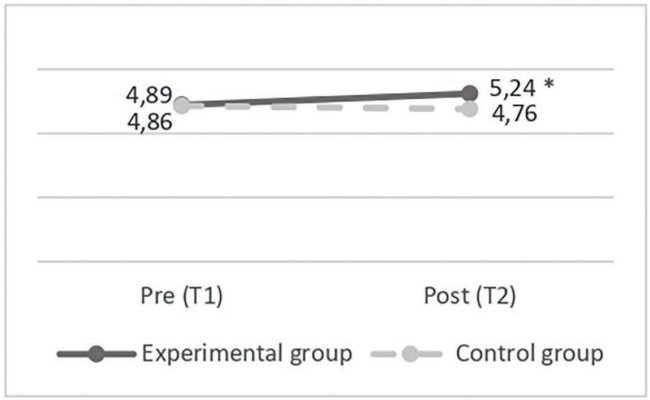


Fig. 1c. Courage



Note. **indicates significance less than .000; * indicates significance less than .05

Regarding the differences between the experimental group and the control group in the second administration (T2), paired-sample *t*-test revealed that there were significant differences regarding the following dimensions: *fear of COVID-19* ($t(123) = -4.341$, $p = 0.000$) and *career adaptability* ($t(123) = 3.715$, $p = 0.000$). No significant differences emerged regarding the dimension of *courage* ($t(123) = 1.778$, $p = 0.078$). Table 3 summarizes these results.

Tab. 3. Differences between experimental and control group in the post-test

	Experimental group		Control group		
Measure	M	SD	M	SD	p
Fear of COVID-19	2.26	1.02	3.05	1.05	.000
Career adaptability	4.01	0.67	3.56	0.68	.000
Courage	5.25	1.22	4.76	1.78	.078

Discussion

Professional planning is an activity full of anxieties, especially during adolescence, an age in which it becomes one of the main problems experienced (Erikson, 1968); planning a career in an age of change and during a pandemic can be an even more complex task. Fear of COVID-19 can generate anxiety about future careers and negatively impact well-being (Mahmud et al., 2021; Zammitti et al., 2021b).

On the one hand, courage can help people to act despite fear and, on the other hand, career adaptability can support young people to cope with the changes of this historical moment. The aim of this project, consistent with the advice that derives from the literature in times of pandemic (Karataş et al., 2021), was to improve the personal resources of courage and career adaptability in a group of adolescents and, at the same time, lower levels of fear of COVID-19.

The results showed that the training had good results; the adolescents involved in the training, in fact, had the opportunity to reflect on the fear of COVID-19, lower its levels and improve some resources that will help them to face the difficult times they will have to face after the pandemic. This is consistent with the starting hypotheses.

Contrary to what was expected, in the control group there was a significant change related to the fear of COVID-19. The increase in fear of COVID-19 in the control group could be explained by the fact that during the period in which the data were collected, schools often faced difficult situations, alternating periods of distance teaching with periods of face-to-face teaching, based on the trend of infections and the presence or absence of COVID-19 positive peers within the class. This may have contributed to increased levels of fear of COVID-19.

Career adaptability and courage are constructs that can also be traced in other orientation experiences, often associated with other dimensions. For example, Santisi et al. (2021), developed a training to enhance career adaptability, optimism, and hope in a sample of, obtain good results. Similarly, Ginevra and Nota (2018) structured training in ten units, obtaining the enhancement of some career adaptability resources in a sample of adolescents. Similar experiences have also been reported with students of other school levels: Santilli et al. (2020) developed training for high school students, enhancing career adaptability; Koen et al. (2012) achieved improvements in career adaptability levels in a group of university students; Zammitti et al. (2021c) created an online training to improve

career adaptability and other resources such as courage, optimism, hope, risk intelligence, and self-efficacy. All these studies contribute to demonstrating that career adaptability is a malleable construct, a skill that can be learned, as it was theorized by Savickas (1997, 2005) and that this can also be applied to courage understood as the intention to act despite the fear (Norton & Weiss, 2009).

An innovative element of this training is to have included a specific emotional aspect of the pandemic period: the fear of COVID-19. Generally, trainings that consider emotions aim to improve emotional intelligence (Pourmohamadreza-Tajrishi et al., 2013; Adibsereshki et al., 2016; Motamedi et al., 2017), proposing among the various activities also paths of emotion recognition. Fear is an emotion that can have adaptive outcomes in some circumstances, but some consequences can be maladaptive; is one of those emotions extensively studied during the pandemic period and much research has linked fear and decision-making problems related to career choices (Betz & Serling, 1993; Staley et al., 1997). Therefore, it was decided to consider this important aspect. The study showed that even in this case it is an aspect that adolescents can learn to manage and control, drawing only adaptive consequences.

Some limitations must be taken into consideration: the project did not involve important figures who can provide relevant support to adolescents, the parents. They should be supported and able to support their children. Indeed, during the pandemic, parents were faced with fears and uncertainties about their future and the future of their family, often experiencing a collision between their role and expectations and responsibilities (Coyne et al., 2020). This places parents within a category that needs support. But parents must also be able to support their children; parental support is negatively associated with anxiety and depression (Worley & Mucci-Ferris, 2021).

The Project is set in southern Italy, while future research should include programs involving students of different ages and from different regions. Furthermore, it must be remembered that the evaluation of the effectiveness of the intervention must not be limited to recording only the changes that occur immediately after the training, but should include follow-up phases, for example 6 or 9 months after the training, also providing for the use of qualitative measures that evaluate the impact of the training on career choices.

Implications for the Practice

During the crisis, all governments were committed to defining ways to allow the country to recover; this has meant making challenging decisions on multiple levels, including education. In Italy, as a result of the pandemic, the government has allocated funds to provide psychological support to students in schools. Mental health professionals should actively participate in the processes of promoting personal well-being; mental health does not only involve the treatment of disorders, but also includes the possibility of promoting the development of positive resources and the ability to manage one's emotions (Kobau et al., 2011).

Psychologists can work using training to enhance the positive resources of young people and allow them to face the uncertain future that awaits them.

We must not forget that in the post-COVID-19 society career counseling must deal with more force and energy on the impact of the crisis on individuals and their professional planning.

Conclusions

The training demonstrates that it is possible to equip adolescents with useful resources to cope with career planning, even in a period of crisis. As pointed out by Steinberg (2015), the adolescent brain is characterized by plasticity, and this means that it can be modified by experience. Consequently, there is a need to respond to the pandemic crisis by trying to strengthen the resources of individuals to help them rework the current situation and allow the construction of the future.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical approval
All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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UNIVERSITÀ EDITRICE

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Psychology Hub (2021)
XXXVIII, 3, 47-60

Effects of the COVID-19 pandemic in ECEC centers: social and psychological impact on children and teachers

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Article info

Submitted: 15 October 2021
Accepted: 23 November 2021
DOI: 10.13133/2724-2943/17594

Abstract

Early Childhood Education and Care (ECEC) centers are extremely significant contexts for understanding the effects of COVID-19 pandemic, and teachers are privileged interlocutors to detect changes in children's behavioral manifestations. Starting from these premises, the present study aimed to investigate the social and psychological impact of the pandemic on children and teachers and the strategies implemented to cope with it in the context of ECEC centers. 161 teachers completed an online survey which investigated four main themes: 1) impact of pandemic on children; 2) impact of pandemic on teachers; 3) children's vulnerabilities and resources; 4) strategies implemented to cope with the impact of pandemic. Qualitative content analysis allowed to identify representative categories for each open-ended question and statistical frequency showed the distribution of the categories within each variable. The results show changes in behavior, play and conversations between children, let teachers' concerns emerge, highlight children's fragilities and resilience, and allow to identify the main strategies implemented to cope with negative effects observed after the lockdown. The study provides an interesting overview of the impact of the pandemic, which allows researchers and professionals to focus on aspects relevant to the design and implementation of interventions with both children and teachers.

Keywords: Early Childhood Education and Care; Covid-19; pandemic; children; teachers.

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Introduction

The Covid-19 pandemic has caused significant changes in people's lives, from a health, economic and social point of view. As the first years of life, from birth to school age, are crucial for human development, the youngest are exposed to the greatest risks due to the pandemic. Indeed, young children have experienced increased instability and insecurity, increased stress on the part of caregivers, in addition to significant changes in daily routines in both the family and educational settings (Bartlett et al., 2020; OECD 2020; Yoshikawa et al., 2020)

Research has started to investigate the negative socio-psychological impact of the pandemic on children and adolescents: in particular, some recent rapid reviews have found concerns related to socio-emotional behavior, anxiety and stress (Brooks et al., 2020; Loades et al., 2020). However, just a few studies have investigated the impact of the pandemic in the preschool age; such studies have reported post-traumatic stress disorder, attachment problems and a sense of grief among the main effects on children, also underling how such problems may have a long-term impact (Pascal & Bertram., 2020). Moreover, preschoolers show tiredness, sadness, irritation, frustration and anger in relation to the pandemic (Malta Campos & Vieira, 2021).

The early childhood education and care (ECEC) centers are extremely significant contexts for understanding children's behavioral manifestations due to the COVID-19 pandemic (Masten & Motti-Stefanidi, 2020; O'Keeffe & McNally, 2020). ECEC centers also play a critical role in contrasting the negative impact of pandemic on children; through the educational activities proposed by teachers, children indeed have the opportunity to re-elaborate their emotional experience in order to face current threats and enhance resilience (Masten, 2019; UNESCO 2021b; Ungar et al., 2019). For the same reason, educational contexts are included among the three fundamental components of the pandemic-resilient society, alongside the economy and health care (Fay et al., 2020).

In particular, teachers are the privileged interlocutors when it comes to observing the effects of the lockdown on children, as they have the opportunity to observe children for a long time while engaged in different activities and can compare children's behavior before the lockdown and after the reopening of schools. In particular, they have expressed concerns in relation to a loss of both learning and socio-emotional development in children, due to school closures (Bao et al., 2020; Donnelly & Patrinos, 2021; OECD, 2020; Buheji et al., 2020; Giannini et al., 2020, UNESCO, 2021b).

Some studies have already underlined how teachers recognized some negative consequences for the young children who could not spend time with school friends during periods of home isolation. In particular, changes have been observed in children's behavior, play and conversations. Concerning behavior, research indicates increased levels of social isolation, loneliness and anxiety, propensity to cry and to destroy objects, regressions in language development (Davies et al., 2021; Toseeb et al., 2020; Brooks et al., 2020; Kim et al., 2020; Loades et al., 2020;). As for play, children showed more intensity and depth and a propensity to stay in small groups rather than big groups, the introduction of the theme "virus" in the pretend play, for example through the representation of masks, illness and death (Pascal & Bertram, 2021). In relation to conversations, the main themes seem to concern getting ill, calls to respect the anti-Covid hygiene rules and regrets at not to be allowed to hang out with friends (Malta Campos & Vieira, 2021). Another interesting emerging data refers to the "Covid silence" effect: despite the requests of the operators, children do not want to dwell on their experiences regarding Covid but would rather play and discuss something else (Pascal & Bertram, 2021).

A recent scoping review (Lateef et al., 2021) indicates that psychosocial consequences of pandemics on children are understudied, highlighting the need for more research in the field. Graber et al. (2020) also underlined how few studies have investigated changes in children's play in a restrictive environment. Furthermore, among the studies published so far on the themes, only a few have been conducted in Italy (Bondioli & Savio, 2021; Mantovani et al., 2021) and these studies have focused mainly on pedagogical aspects or else investigated experiences of children and families during the lockdown, not in ECEC center contexts. Starting from all these premises, our study aimed to explore what changes have taken place in children's behaviors, play and conversations after the restart of school in Italian ECEC centers, by asking teachers a series of open questions in order to let their point of view emerge.

Study aims

Starting from the aforementioned premises, the present study aimed to explore the effects of the COVID-19 pandemic in ECEC centers by investigating the social and psychological impact on children and teachers.

We have chosen to investigate these issues in the contexts of ECEC centers, as they are a very significant environment both to observe the changes in children after school closures and to offset the negative impact of the pandemic. We conducted such investigations via the perception of teachers as privileged observers and experts in children's development in everyday life.

Four main aims were defined: 1) to explore the impact of the pandemic on children; 2) to explore the impact of pandemic on teachers; 3) to explore children's vulnerabilities and resources; 4) to explore which strategies have been implemented in ECEC centers to cope with the impact of the pandemic. Given the exploratory nature of the study and the lack of publications on the topic, we had no specific hypotheses about the nature of these effects.

For each aim, some critical aspects on which to focus were identified. As for the first aim, the impact of the pandemic on children was explored through the analysis of three different expressive channels: behavior, conversations, play. Such a choice was made in relation to the level of development of preschool children, with respect to their preferential modes of expression typical of age, and in line with the activities usually proposed in educational contexts. As for the second aim, the impact of the pandemic on teachers was explored by noting their main concerns and their point of view on the use of the mask. As for the third aim, the identification of the resources and children's vulnerability was explored through the teachers' perception in the educational context. Finally, as for the fourth aim, we

analyzed which coping strategies had been implemented by the ECEC system to face the impact of pandemic, declining the analysis at two different levels: 1) in relation to children (what particular activities and projects have been proposed to children at the restart of school after the lockdown; 2) in relation to teachers (what specific training support aids been prepared for teachers)".

Method

Sample

The sample was recruited through the distribution of an online questionnaire, disseminated to teachers via email by the pedagogical coordinators of the provinces of Bologna, Ferrara, Ravenna and Parma, in the Emilia Romagna region, Northern Italy. As the teachers were contacted directly by the coordinators, it was not necessary to define inclusion and exclusion criteria. The recruited teachers worked in both public and private ECEC centers which are accessed by a heterogeneous population of children aged between 3 and 6, quite representative of the general population of that age in the Emilia Romagna region. The sample included 161 teachers, 2 males and 159 females; the most represented age was between 41 and 50 years old (43.5%) and the majority of the participants had been teachers for over 10 years (73.3%). The personal data of participants are reported in Table 1.

Tab. 1. Personal data of participants

Data	Variable	Percentages
Gender	Male	1.2%
	Female	98.8%
Age (years old)	18-30	3.1%
	31-40	19.3%
	41-50	43.5%
	Over 50	34.1%
Working Age (years)	Less than 1	3.7%
	1-5	9.9%
	6-10	13.1%
	Over 10	73.3%

Procedures and measures

Prior to the data collection, participants' informed consent was acquired, following the ethical guidelines defined by the American Psychological Association. The authorisation and approval of the provincial coordinators of the ECEC centers was also provided. After that, an online questionnaire was administered, using Qualtrics software. The contents of the questionnaire were defined in two phases: a first draft was defined on the basis of the international literature available on the topic, then the final draft was refined on the basis of some interviews with internal coordinators of the ECEC centers, who were also teachers, to adapt the questions to the specific Italian context. The final contents of the questionnaire are reported in Appendix 1.

Besides the personal data of the participants (gender, age, working age) the questionnaire consisted in 27 questions, divided in four sections linked to the four aims of the study:

a) social and psychological impact of pandemic on children (8 questions);
b) social and psychological impact of pandemic on teachers (3 questions);
c) children's vulnerabilities and resources (8 questions);
d) strategies to cope with the impact of pandemic (8 questions)

The questionnaire included both closed-ended and open-ended questions. The choice of including open-ended questions was due to the explorative nature of the study, as the research on the topic is rather scarce.

Tab. 2. Areas and themes to explore

Areas	Specific themes	Closed-ended	Open-ended
Social and psychological impact of pandemic on children	Behavior	1	1
	Play	2	2
	Conversations	1	1
Social and psychological impact of pandemic on teachers	Concerns		1
	Use of masks	1	1
Children's vulnerabilities and resources	Vulnerabilities	5	1
	Resources	1	1
Strategies to cope with the impact of pandemic	Activities proposed to children	2	1
	Trainings for teachers	3	1
	Proposals for the future		1

Data analysis

As a first step, qualitative content analyses were conducted to identify representative categories for each open-ended question and define a coding grid (Appendix 2). The procedure consisted of five phases:

1) Identification of the categories by two raters (r1 and r2)
2) Definition of the coding grid (r1 and r2)
3) Coding training for a third rater (r3) who did not participate in the definition of the coding grid
4) Coding of the open-ended answers by two raters (r2 and r3)
5) Assessment of categorical inter-rater reliability (Cohen's kappa)

Categorical inter-rater reliability, assessed for each variable by calculating Cohen's kappa coefficient (k), revealed good to excellent inter-rater agreement for all the categories (K-score range: 0.60-1).

As a second step, frequency analyses were conducted to assess the distribution of each category and of each answer to the closed-ended questions.

Results

The frequencies of all the categories within each section are reported in Appendix 2. The main results for each section are described below.

Impact on children

As for children's behavior, the majority of the participants (61.5%) reported observing some changes during the pandemic; in particular, there emerged an increase in difficulties in emotional regulation (60%) and a corresponding decrease in adaptive emotional regulation behaviors (35%), a decrease in acquired autonomy (30%), a greater demand for attention from adults (25.5%,), difficulties in managing peer relationships (24%,), insecurity (19%), search for physical contact with an adult (15%), hyperactivity and inattention (15%) and the manifestations of fears related to diseases (14%).

As for children's play, 41.3% of the teachers noticed the appearance of Covid-related issues in children's play, in particular pretend play with specific themes related to Covid (70%) and with issues related to hospital and diseases in

Tab. 3. Impact on children

Themes	Categories	Example	Frequency
Behavior	Difficulties in emotional regulation	Anxiety, fears, anger, nervousness	60.0%
	Decrease in adaptive emotional regulation behaviors	Less tranquility, less tolerance to frustration	35.0%
	Decrease in acquired autonomies	Regressions as putting hands and objects in the mouth, do not putting on shoes alone, enuresis	30.0%
	Request for attention	Search for adults, whims	25.5%
	Difficulties in peer relationships	Acute self-centeredness in one-to-one relationships, difficulties in interactions	24.0%
	Insecurity	Greater difficulty in detaching oneself from the parent	19.0%
	Search for physical contact with adults	Excessive attachment even with teachers, they seek physical contact	15.0%
	Hyperactivity and inattention	Hyperactivity, inattention	15.0%
	Fears related to disease	Caution in following the rules of hygiene, fear in contact with children or teachers of other classes	14.0%
Play	Covid-related themes in pretend play	Disinfecting games with a magic gel	70.0%
	Disease-related themes in pretend play	Doctor's game	34.0%
	Distrust of others	Solitary play has increased, difficulty respecting rules in a group	25.0%
	Greater demand of adults' presence	Increased demand for the presence of adults	22.5%
	Greater need for physical activity	They prefer outdoor games in the school garden, they are more physical in their games	21.0%
	More solitary play	They stay alone while playing	17.0%
	Less sharing	They don't share their games with others	17.0%
	Lower tolerance towards frustrations	They want to decide what to do, they do not accept defeat	12.5%
Conversation	Rules of Covid protocol	We must wear a mask because there is Covid, we must wash our hands well so there are no germs and bacteria	43.0%
	Consequences of the virus and its dangerousness	The virus makes people sick, Covid kills, we cannot kiss	22.0%
	Limitations in relationships	I cannot have a birthday party but I would like do it so much, you cannot come to my house because there is Covid	18.0%
	Family experience	My grandfather got the vaccine yesterday, he was not very well	18.0%

general (34%). 21% of participants reported other changes in play behavior; among such changes, the data show a greater distrust of others (25%) and a greater demand for the adult (22.5%), a greater need for physical activity (21%) and solitary play (17%), less sharing (17%) and a lower tolerance of frustration (12.5%).

As for conversations between children, 78% of participants noticed issues related to Covid and the pandemic, with the recurrence of themes related to the rules of the Covid protocol (43%), the consequences of the virus and its dangerousness (22%), limitations in relationships (18%), family experiences (18%).

Impact on teachers

As for teacher's concerns, the main ones are related to the deprivation of sociality for children (48%), difficulties in the relationship between teachers and children (23%), children's emotional fragility (20%), delays in the development of certain skills (17%), deprivation of the experience of community and school life (14.5%).

As for the use of the mask, 73% of participants reported that it influenced their relationship with children, due to limitations in expressiveness (66%), general difficulties in understanding messages (41.5%), difficulties in breathing or speaking (20%), difficulties in communicating empathy (12%). They also noticed a delay in the development of verbal language in children (10%) and an increase in the ability to "read one's eyes" (10%).

Vulnerabilities and resources

As for children's vulnerabilities, most teachers noticed in children an increase in emotional fragility (70%), closeness to the adult (68%) and distance from peers (29%) was noted. 85% of teachers reported having had some children in class with direct family experience of Covid; in these children they noticed greater insecurities (21%), greater manifestations of anxiety and fear (21%), greater difficulty in detaching themselves from parents (17%) and a greater sensitivity to issues related to the pandemic (17%), compared to others.

As for children's resources, 59% of teachers noticed the implementation of specific resources, such as compliance with new rules (53%), adaptation (30%), greater desire to talk about their experience in children who had a direct family experience with Covid (29%), responsibility in respect to others (13%), patience (9%), the desire to play outdoors (9%), and creativity in inventing new games with less material (8%).

Coping strategies

As for the activities proposed to children to cope with the impact of the pandemic, 31% of teachers provided different strategies or specific activities to cope with the impact of the pandemic, such as reading and circle time on emotions (36%), sharing experiences (19%), some specific games (15%), various pictorial and manipulative activities (14%), some activities related to personal care (10%), the creation of group stories (8.5%) and psychomotor activities (8.5%).

As for the trainings for teachers, 50% of teachers had the opportunity to participate in ad hoc training courses that they considered useful. The topics of the training were mostly aspects related to children's psychology (58%), inherent in the psychology of teachers (16%), aspects of peer socialization (14%), support for families (14%) and the theme of death and loss (14%).

Tab. 4. Impact on teachers

Themes	Categories	Quotes	Frequencies
Concerns	Sociality for children	Lack of socialization for children during the lockdown, isolation,	48.0%
	Difficulties in the relationship between teachers and children	Trying to maintain contact, fear of losing the emotional bond with them	23.0%
	Emotional fragility of children	Repercussions of isolation on their well-being, sadness, that they felt alone, angry, and afraid	20.0%
	Delays in the development of certain skills	Not being able to consolidate a training path of growth, regressions	17.0%
	Deprivation of the experience of community and school life	Loss of routine, deprivation of the experience of school life	14.5%
Use of masks	Limitation of expressiveness	Lack of facial mimicry, difficulties in communicating and understanding emotions	66.0%
	General difficulties in understanding messages	The voice is lost a lot and children struggle to follow, difficulty interpreting non-verbal expressions	41.5%
	Difficulties in breathing or speaking	I need to raise the tone of my voice, difficulty in singing songs	20.0%
	Difficulties in communicating empathy	The relationship is more detached, children do not see me smiling, worried, angry	12.0%
	Delay in the development of verbal language	Not being able to show the lip, often phonetically similar letters appear the same and consequently children do not always repeat correctly	10.0%
	Increase in the ability to "read the eyes"	We look more into each other's eyes	10.0%

Tab. 5. Vulnerabilities and resources

Themes	Categories	Quotes	Frequencies
Vulnerabilities	Emotional fragility	Nervousness, aggression, sadness, loneliness, anxiety	70.0%
	Closeness to adults	Search for physical contact with adults, search for the presence of the adult even during play	68.0%
	Distance from peers	Increased solitary play, greater self-centeredness	29.0%
	Insecurities*	Greater difficulties of acclimatization and relational, seek more reassurance and emotional reinforcement	21.0%
	Anxiety and fear*	Increased anxiety, more fears	21.0%
	Difficulties in leaving parents*	Greater attachment to the family, once welcomed in the section they let themselves be consoled but need well-thought-out words	17.0%
	Sensitivity to issues related to pandemic*	Greater sensitivity and fears about the virus	17.0%
Resources	Compliance with new rules	Compliance with safety regulations: hand washing, disinfecting, keeping a safe distance	53.0%
	Adaptation	Great spirit of adaptation to situations, acceptance of changes	30.0%
	Greater desire to talk about their experience*	More desire to talk about Covid experiences, need to talk about their experience with teachers and peers	29.0%
	Respect for others	They are very respectful of others	13.0%
	Patience	They show great patience	9.0%
	Desire to play outdoors	They ask to play outdoors more because they know that outside they can play with greater tranquility	9.0%
	Ability to create new games with less material	Play with little, invent new games with fewer materials	8.0%

Note. *Increase in children who had a direct family experience of Covid, compared to the others

Tab. 6. Coping strategies

Themes	Categories	Quotes	Frequencies
Activities for children	Reading and circle time on emotions	Reading books on emotions, conversations related to emotions, narration, direct evocation in circle time, emotional workshops on fear and one's own feelings	36%
	Sharing experiences	Increase in moments of sharing on the carpet in a circle.	19%
	Specific games	Creation of stories about Covid, activities that support and facilitate distancing, use of surgical masks to play	15%
	Pictorial and manipulative activities	We draw Covid, graphic activities on wrong and correct behaviors.	14%
	Activities related to personal care	Hand-washing game	10%
	The creation of group stories	We invented a song and a story all together.	8.5%
	Psychomotor activities	Psychomotor workshops on emotions, outdoor motor play	8.5%
Trainings for teachers	Psychology of children	Management of emotions, moments of distress and anger, management of moments of crisis	58%
	Teacher psychology	How to reintegrate into the relationship with children with safety measures, reflect on one's own emotionality	16%
	Peer socialization	How to help children's socializations, how to program the division into bubbles of children	14%
	Support for families	How to relate to families in this situation, how to support parents	14%
	Death and loss	Insights on themes related to death and loss and how to talk about them with children	14%

Discussion

The framework of the results showed the interesting aspects of the impact of the pandemic on children, derived from the spontaneous observations of teachers in the natural context of the ECEC centers. These complex results, on the one hand, help to fill the literature gap on the impact of the pandemic in preschool age, and on the other, allow us to identify some emerging themes that can guide educational actions for children and training courses in teacher support.

An initial important result indicated that most teachers recognized changes in children's behavior at the reopening of school after lockdown. One of the most frequently observed changes was a greater difficulty in emotional regulation, in particular related to irritability, fear and the inability to tolerate frustration, especially during peer play. Moreover, a lower percentage of teachers also highlighted greater attention difficulty and hyperactivity, aspects that are also linked to emotional dysregulation (Burnett et al, 2020; Zuberer et al., 2018). In addition to integrating evidence with other studies on the topic (Kairupan et al., 2021), our data allow for a greater understanding of children's difficulties in self-regulation, letting emerge such difficulty both in relationships with peers and adults. As for their peers, it was found especially referring to the resolution of conflicts and the ability to tolerate frustration during play. As for the adults, it was found especially in relation to separation from parents upon arriving at the ECEC center (Cigala et al., 2013; Venturelli & Cigala, 2016) and to a greater demand for teachers' presence during the day. As the first years of life are crucial for the development of emotional regulation (Carrol, 2019), and considering that such an ability is predictive of good adaptation to contexts also in later stages of life (Robson et al., 2020; Skibbe et al., 2019), these data appear to be very significant and need to be adequately embraced by education professionals.

The explanations of this fragility may be different. Since, in the early years of life, emotional regulation skills are learned from relationships with significant adult figures (Pallini et al., 2018) one of the explanations should be related to adults' lesser emotional disposition to welcome children's emotions, recognize them and regulate them: the literature indeed indicates that the pandemic has generated a lot of uncertainty, greater anxiety and a sense of precariousness in adult figures who have an educational role (Jones & Kessler, 2020). In relation to this result, it should be also observed that, according to teachers' perception, children seem to show a greater need for relationships and closeness with the adult, highlighting a decrease in many of the autonomies already acquired such as conflict resolution and group play. Considering Fonagy's perspective (Fonagy et al., 1991; 1997), we could hypothesize that the Reflective-Self functioning of the adult, which allows a child to develop the ability to regulate their emotions, has diminished in this period due to greater insecurity and anxiety. Another explanation could be related to fewer opportunities of peer-relationships during lockdown: as shown by recent research (Cordovil et al., 2021; Saltali, 2021), the pandemic caused an increase in the sense of precariousness and a deprivation of extrafamilial socialization experiences. Children may have had fewer opportunities to develop the understanding of emotion and self-regulation through peer-relationships.

In relation to changes in play, only a few teachers (21%) have highlighted general changes post-lockdown, reporting on three main aspects in particular. First, a greater distrust/detachment manifested in more solitary play and less sharing with peers. Second, a greater demand for adult participation during peer play. Third, a greater demand for physical play that involves the body in motor activities. More teachers (41.3%) observed the appearance of pandemic-related elements in children's pretend play, both related to specific aspects of Covid-19 or to general disease and hospitalization. These data confirm the relevance of pretend play in preschool age as a means of expression, communication and processing of affectively meaningful experiences for children (Galyer & Evans, 2001; Lillard, 2013), and in particular, its importance as a fundamental tool to elaborate fears in the context of illness and to support mind-mindedness (Erikson, 1964; Meins et al., 2013).

In relation to the conversations, most teachers reported the presence of themes related to the pandemic in children's speech and narratives. In particular, two levels of content are highlighted: one related to knowledge and the other to experiences. At the knowledge level, conversations referred to protocols and measures taken to counter the spread of the virus, to the consequences of the virus and its dangerousness, such as the possibility to get ill or to infect others. At the level of experiences, children's conversations referred to the limitations that Covid imposed on them, especially concerning activities, such as the possibility to share materials and to stay close, and family experiences, such as the possibility to meet their grandparents or to celebrate birthdays with parents.

Although these data would seem to be in contrast with the "Covid silence" reported in the literature (Pascal & Bertram, 2021), they are not. It is interesting to note that Covid silence was found in adult-led conversations, while we investigated a different form of conversation, the spontaneous dialogues between children, finding that such conversations include Covid-related ones. Moreover, it should be observed that we conducted our study a few months after the reopening of schools and it could be possible that a time was necessary for children to "be able to say" and "be able to share" what they experienced and felt.

The results of the study also allow us to focus on some aspects of vulnerability of children as well as on the resources that they had implement in the educational context. Concerning their vulnerabilities, the findings are consistent with data on changes in children's behavior; in particular, 70% of teachers recognized an increase in children's emotional fragility and a greater need for the physical presence of the adult. A smaller number of teachers also reported a greater distance among peers. The identification of these specific vulnerabilities, that to our knowledge were not found in previous studies, allows us to increase the adults' awareness about children's post-pandemic experience and, starting from such an awareness, it may contribute to orienting future educational actions.

In particular, for a greater understanding of the situation, these vulnerabilities should not be considered independently, but as interdependent and connected. As previously mentioned, children's ability to regulate their emotions is connected to the possibility that they have in everyday life to experience the containment of such emotions, especially at this age. The

need for the presence of an adult, which became stronger for children after the pandemic, should be considered a sort of "signaling mechanism": the search for an adult who welcomes and recognizes their emotions. While for older children this containment might be found also in their peer relationships , in preschool age the adult still plays a highly critical role in the process of emotional regulation. In this perspective, the possibility of strengthening the bond of trust with significant adults becomes fundamental to explore the environment and the relationship with peers.

One of the major contributions of the study is to have identified the resources that children have implemented in the educational contexts after lockdown, that is from the teachers' point of view. Most teachers observed a great ability to cope with the new context, in particular showing compliance with the rules imposed by the protocols, adaptation to the new situation, and also the implementation of behaviors that presuppose the taking of responsibility and attention to others, such as being respectful and taking care of others. Although reported with less frequency, another important resource has been children's creativity, like the ability to invent new possibilities of play using a smaller number of materials, because many had been eliminated by the protocols.

The study also contributes to deepening the knowledge about children who have had direct experiences in the family of Covid infection. The vast majority of teachers (85%) reported having had at least one child in class with such an experience. Nevertheless, to our knowledge, this topic has not been yet explored in the studies on preschoolers. According to teachers' perceptions, these children have some specific vulnerabilities, as compared with others: what emerged is a greater insecurity, a greater behavioral manifestation of anxiety and fear, greater sensitivity to issues related to Covid and also greater difficulties in separating from parents upon the arrival at the ECEC center. In these children, the teachers also recognized a greater disposition to tell about their experiences: such an aspect represents a resource since, as various research studies have highlighted, sharing can be an effective opportunity to process and contain the emotions and thoughts related to traumatic events (Bateman & Danby, 2013; Brown, 2011; Scaletti & Hocking, 2010).

The impact of the pandemic on education professionals, investigated both in relation to the main concerns of teachers for children and to the experience of using the face mask, allows other interesting data to emerge. Teachers declared concerns mainly in relation to the impact of Covid and school closures on children's socio-affective development, referring in particular to the limitations of peer socialization, difficulties in the relationship between teachers and children and children's greater emotional fragility. Fewer concerns emerged for children's learning in terms of a slowdown in the development of cognitive skills. The latter finding seems to be in contrast with other recent studies that point to the loss of learning and opportunities for growth and development as major concerns about the adverse consequences of the pandemic on education. (Niemi et al., 2020; Onyema et al., 2020; UNESCO, 2021a). The contrasting findings may be due to the fact that such studies evaluate the impact of the pandemic on development at more advanced ages, when the cognitive aspects take on greater importance both for the families and for the educational institution. Our exploration of early life educational contexts revealed that teachers' main concerns were instead related to relational and emotional aspects more than cognitive ones. Nevertheless, it should be interesting to deepen such aspects, as the first years of life are crucial for children's cognitive development.

The results of the present study also enrich the literature concerning the use of the face mask, with a focus on its impact on preschool teachers. Although recent research has already studied the correlation between the use of the mask and teachers' anxiety in school age (Li et al., 2021; Spitzer, 2020), little is known about the effect of wearing masks in preschool. About 70% of Italian participant teachers reported that the use of the mask influenced their relationship with children. More specifically, it emerged that in most cases the mask represented for teachers a limitation of expressiveness in their communication with children, also negatively affecting the full understanding of verbal messages. An interesting fact is that, although teachers expressed concerns about the use of the mask in relation to a decrease in the communication of empathy, they also recognized that children have become better at "eye reading", refining the ability to grasp emotions and non-verbal messages starting from the adult's look. It would be interesting to deepen these results in future studies, as the ability to grasp mental states from eye-gaze in early childhood is still being discussed. Although children's ability to distinguish emotional expressions through the upper part of the face is recognized, literature still does not support a causal connection between face-reading and mind-reading in early childhood (Pellicano & Rhodes, 2003).

Other important findings have emerged in relation to the strategies that have been implemented by the ECEC educational systems in the post-pandemic period to allow children to process their experiences related to Covid. About a third of the participants teachers (31%) reported having implemented specific strategies or activities aimed at helping children to cope with the impact of pandemic; such strategies referred mainly to readings and conversations about emotions, some specific games to increase awareness and responsibility (e.g.: play on distance, play with face masks), some manipulative activities, proposals for psychomotricity and even the creation of ad hoc stories in groups.

Regarding the training supports designed and proposed by the ECEC system for professionals, the data showed that only half of the teachers participated in specific training sessions and that they found them useful for their practice. It is interesting to note that most training sessions were focused on the needs of children and their development, while only 16% were centered on taking charge of the experiences and emotions of the teachers. These data allow us to reflect on the role of training for ECEC professionals and on the vision underpinning the training. If teachers should contain children's experience, thoughts and emotions, it might be asserted that it would be useful for them to have the tools to manage their own experience, thoughts and emotions as well in such a challenging and new context. As one teacher put it: "children's emotions echo our own". The needs of children highlight the need of an adult who knows how to help them to regulate their

feelings: to do so, the main way is to lend support to the adult to also recognize their emotions and fears, insecurities with respect to taking charge of children and their emotional states. In this vision, trainings that support emotional awareness and emotional regulation for both children and teachers should be appropriate to face the effects of the pandemic (Berti & Cigala, 2020; Matiz et al., 2020).

Strengths and Limitations

Although this preliminary study provides interesting findings about the social and psychological impact of pandemic on children and teachers in Italian ECEC centers, the results should be considered in the light of certain limitations. First of all, the sample was small and representative of a limited population in Northern Italy; second, the study takes into account the point of view of teachers, considering them privileged observers of children's behavior, but it would be interesting and useful to integrate their perspective with that of the parents and also to conduct direct observation of children in the educational setting, to implement multi-informant research. Despite the above-mentioned limitations, the study does have many strengths. At a methodological level, the coding process of the open-ended questions of the questionnaire included three raters and one of them did not participate in the definition of the coding grid and was blind to the hypotheses of the research, ensuring greater stringency in the coding phase. At a content level, to our knowledge, the present study is the first to deepen some specific aspects about the impact of the pandemic observed in Italian ECEC centers, such as the resources put in place by children in the educational context, the teachers' experience about the use of a face mask and the strategies implemented to cope with the impact of the pandemic.

The present study could offer interesting points of reflection for future research, in order to further explore and deepen some emerging aspects, and for both practice and training to be implemented in the educational contexts, in order to cope with the negative impact of the pandemic and to support children who experienced the effects of the pandemic on their growth.

Author Contributions
The authors contributed equally to this manuscript.

Compliance with Ethical Standards
Conflict of interest
The authors declare that they have no competing interests.

Funding
The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethical approval
All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Appendix 1.

Contents of the questionnaire and distribution of frequencies for each closed-ended question

Section A	**Social and psychological impact of pandemic on children**		
Question code	**Question**	**Answer options**	
A1 General Behavior	Have you noticed particular behaviors during pandemic in children in the school context (behaviors that have appeared or increased or decreased)?	No Yes, some Yes, many	36.0% 61.5% 2.5%
A2	Which ones?	Open-ended	[see table 3]
A3 General Play	Have there been any changes in the way children play during the pandemic?	No Yes	79.0% 21.0%
A4	Which ones?	Open-ended	[see table 3]
A5 Pandemic-related play	Have you noticed the recurrence of issues related to Covid-19 and aspects related to the pandemic in children's play?	No, never Yes, sometimes Yes, often	58.7% 28.0% 13.3%
A6	Which ones?	Open-ended	[see table 3]
A7 Pandemic-related conversations	In conversations between children, have you ever heard comments and conversations from children about Covid-19, or about aspects related to the pandemic?	No, never Yes, sometimes Yes, often	22.4% 46.9% 30.8%
A8	Which ones?	Open-ended	[see table 3]
Section B	**Social and psychological impact of pandemic on teachers**		
Question code	**Question**	**Answer options**	
B1 Concerns	What are the biggest concerns you have and/or had as a teacher for your children in relation to pandemic?	Open-ended	[see table 4]
B2 Mask	Do you think the use of face masks for children in any way influences the relationship with teachers and/or between peers?	Not at all Yes, a little Yes, quite a bit Yes, a lot	29.1% 35.8% 21.9% 13.2%
B3	Which kind of influence did you notice?	Open-ended	[see table 4]
Section C	**Children's vulnerabilities and resources**		
Question code	**Question**	**Answer options**	
C1 Emotional fragility	Have you noticed increased emotional fragility in children after the re-opening of the school?	Not at all Yes, in some children Yes, in many children I don't know	24.7% 45.3% 26.0% 4.0%
C2 Closeness to adults	Have you noticed a greater demand for contact and closeness to teachers during pandemic?	Not at all Yes, in some children Yes, in many children I don't know	29.3% 32.0% 37.3% 1.3%
C3 Distance from peers	Have you noticed a tendency of children to stay more distant from peers during pandemic?	Not at all Yes, in some children Yes, in many children I don't know	69.3% 20.0% 10.0% 0.7%
C4 Direct experience	Are there children of your class who have had a direct experience with Covid-19 (family members or close friends...)?	No Yes, some Yes, many	14.9% 77.0% 8.1%
C5 Differences	Have you noticed any difference between these children and others in terms of behavior, emotions or conversations?	No Yes	80.2% 19.8%
C6	Which ones?	Open-ended	[see table 5]
C7 Resources	Do you think children have implemented specific resources (strategies, behavior skills …) to deal with pandemic?	No Yes I don't know	11.4% 57.9% 30.7%

C8	Which ones?	Open-ended	[see table 5]
Section D	**Strategies to cope with the impact of pandemic**		
Question code	**Question**	**Answer options**	
D1 Activities for children	Have you thought and proposed to children specific activities on issues and/or particular emotions and behaviors of children related to Covid-19?	No Yes	53.5% 46.5%
D2	Which ones?	Open-ended	[see table 6]
D3 Activities effectiveness	Do you think these activities have been effective?	Not at all Yes, a little Yes, quite a bit Yes, a lot	4.6% 13.8% 30.8% 26.2%
D4 Trainings for teachers	Have you had the opportunity to participate in specific trainings related to pandemic?	No Yes	50.7% 49.3%
D5 Trainings effectiveness	Do you find them useful?	No Yes	2.9% 97.1%
D6 Aspects to deepen in trainings	Do you feel the need to deepen in other training sessions some aspects in particular that can help you in this period?	No Yes	49.3% 50.7%
D7	Which ones?	Open-ended	[see table 6]
D8 Proposals for future	What else do you think could be done and/or would you like to do to support children in this period?	Open-ended	[see table 6]

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