

Correspondence: Renan Göksal, Department of Developmental Psychology and Socialization, University of Padua, Via Venezia 8, 35131 Padua, Italy.
E-mail: renan.goksal@unipd.it

Contributions: GM, MP, GDR, conceptualized the study and identified the data collection instruments; UFDA operators, RG, GM, MP, collected the data; SS, RG, designed the study; RG, performed the statistical analyses and wrote the first draft; GM, SS, GDR, MP, supervised and revised the manuscript. All the authors have read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Conflict of interest: the authors declare that they have no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics approval and consent to participate: the study adheres to ethical research standards outlined in the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2010) and the Code of Conduct of Azienda ULSS 6 Euganea. This includes compliance with D.P.R. n. 62 (16 April 2013), as per Article 54 of Legislative Decree no. 165 (30 March 2001), ensuring service quality, employee loyalty, and participant welfare.

This study was approved by the ethics committee of Azienda ULSS 6 Euganea (N. 271 06.04.2023).

Consent for publication: participants actively provided informed consent, complemented by written informed consent from their parents for both assessment and interventions. They were allowed to refuse to use their data for scientific research at any time. This study exclusively utilizes data from patients who did not exercise this opt-out option.

Availability of data and materials: the data supporting this study's findings contain sensitive information and are not publicly available due to the risk of compromising participants' privacy. All other materials/instruments used in the study can be shared upon request. Please address your requests to the corresponding author.

Acknowledgments: we are grateful to all the adolescents and young adults and their caregivers who took part in this study. Special thanks to all the operators of UFDA.

Citation: Göksal, R., Salcuni, S., Marino, G., Paduanello, M., De Renoche, G., (2025). District Functional Unit for Adolescents 2022: a pilot project in Italy to detect mental health strengths and difficulties among youths. *Research in Psychotherapy: Psychopathology, Process and Outcome*, 28(1), 831. doi: 10.4081/ripppo.2025.831

Received: 26 September 2024.

Accepted: 22 January 2025.

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Research in Psychotherapy:

Psychopathology, Process and Outcome 2025; 28:831

doi: 10.4081/ripppo.2025.831

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District Functional Unit for Adolescents 2022: a pilot project in Italy to detect mental health strengths and difficulties among youth

Renan Göksal,¹ Silvia Salcuni,¹ Giulia Marino,² Matteo Paduanello,³ Guido De Renoche⁴

¹Department of Developmental Psychology and Socialization, University of Padua; ²Child Protection and Care Service, Optional Delegated Activities Unit, Alta Padovana District, AULSS 6 Euganea, Padua; ³Family Counseling Unit, Youth Contact - Adolescent Counseling Center, AULSS 6 Euganea, Padua; ⁴Ca' Foncello Hospital, AULSS 2 Marca Trevigiana, Treviso, Italy

ABSTRACT

The COVID-19 pandemic significantly impacted young people's mental health, leading to increased distress and reduced life satisfaction worldwide. Among the worst-hit countries, Italy saw mental health services shift online, prioritizing urgent cases. Consequently, therapy for many individuals was interrupted, leaving young people largely neglected. In response, the Italian government allocated €8 million for youth mental health initiatives during the pandemic, and the Veneto region utilized €2 million to establish the District Functional Unit for Adolescents (UFDA) within its public Child and Adolescent Mental Health Services to provide specialized care for young people. The pilot phase was implemented between April and December 2022. This study reports preliminary findings on UFDA's effectiveness in Padua's Local Health Unit. The main objectives include describing patient characteristics and assessing the intervention outcomes. The study involved 255 youths, representing 71.43% of patients at UFDA (mean: 14.4; range: 12-24 years), and 170 parents. Self- and informant-report versions of the Strengths and Difficulties Questionnaire (SDQ) were administered. A regional questionnaire was used to describe the patient profiles, and the intervention progress record documented anamnestic data and clinical progress of patients. The study revealed positive intervention outcomes despite the limited number of psychotherapy sessions. Results of the SDQ highlighted improvements in all difficulty scales after the intervention. The UFDA pilot project underscores the potential of a preventive, youth-centered approach to address young people's mental health needs. The insights from this study can inform strategies to enhance youth mental health care in post-COVID-19 Italy.

Key words: youth mental health, COVID-19, prevention, mental health services, Strengths and Difficulties Questionnaire.

Introduction

Adolescence, spanning from 10 to 19 years (World Health Organization, 2024), is a transitional phase marked by

autonomy-seeking and identity exploration (Davey *et al.*, 2008; Steinberg *et al.*, 2015). This period is followed by emerging adulthood, a prolonged transition to full adulthood due to extended education and delayed marriage marked by a sense of “being in between” (Arnett, 2014). Both periods are crucial for identity exploration and future trajectory formation, influenced by biological, psychological, and social transformations (Blakemore & Mills, 2014; Ragelienė, 2016). This time offers immense opportunities for growth but also heightened vulnerability due to the reorganization of neural circuits and the emergence of mental disorders, with 48.4% developing before age 18 and 62.5% by 25 (Solmi *et al.*, 2022).

The World Health Organization (2020) declared the COVID-19 crisis a pandemic in January 2020, prompting countries to implement Movement Control Order measures to contain the spread of the virus (Amran, 2022). Although youth were less susceptible to severe physical outcomes, quarantine measures, disruption of social relationships, and uncertainty about the future had a profound psychological impact on youths’ psychological well-being (Chavira *et al.*, 2022; De France *et al.*, 2022; Ezeoke *et al.*, 2022; Li *et al.*, 2021; Magson *et al.*, 2021; Zhou *et al.*, 2020) who had to go through social isolation at a time when the importance of social connections with peers is unparalleled (Blakemore & Mills, 2014). These findings align with trends observed in Italy, where 40% of adolescents reported emotional struggles (Istituto Superiore di Sanità, 2023), alongside increased rates of anxiety, emotional instability, and sleep problems (Barbieri *et al.*, 2022; Bassi *et al.*, 2022; De Girolamo *et al.*, 2020; Gabrielli *et al.*, 2021; Mensi *et al.*, 2021; Oliva *et al.*, 2021; Orgilés *et al.*, 2020, 2022; Petruzzelli *et al.*, 2022). During the pandemic, the Italian national welfare authority shifted mental health services to online emergency assistance to prioritize urgent healthcare services (Caffo *et al.*, 2020; D’Agostino *et al.*, 2020; Pelizza & Pupo, 2020), which led to neglect of youth mental health needs (De Girolamo *et al.*, 2020; Petruzzelli *et al.*, 2022).

In response to these challenges, the Italian government allocated €8 million for youth mental health initiatives during the pandemic. The Veneto region used a fund of €2 million to establish the pilot phase of the District Functional Unit for Adolescents (UFDA) in its catchment area (Allegato B, 2021; Delibera della Giunta Regionale, 2021). UFDA represents an innovative service tailored to the Italian context, building on the principles of integrated youth mental health care observed internationally (Hetrick *et al.*, 2017; McGorry *et al.*, 2022; McGorry *et al.*, 2024). These principles include services with youth-centered approaches, accessibility through walk-in and self-referral services, multidisciplinary teams that address diverse needs (mental health, physical health, and social well-being), and flexible tenure to ensure continued care as needed. UFDA stands out in Italy as a pioneering program offering free, multidisciplinary care for adolescents and emerging adults. It accepts referrals from families, schools, and local health units via a widely promoted call center (CUP-A). It addresses mild-to-moderate distress through a prevention-focused model emphasizing accessibility, early intervention, and collaboration between educators, psychologists, social workers, and neuropsychiatrists (Allegato A, 2021). Unlike traditional intervention-centric approaches, UFDA aims to bridge the transitional gap between Child and Adolescent Mental Health Services and Adult Mental Health Services, a widely recognized challenge in youth mental health care globally (Hetrick *et al.*, 2017; McGorry *et al.*, 2024). Moreover, it seeks to reduce hospitalization rates, prevent relapse, and minimize the length of stay, thus ensuring better outcomes for youth well-being. For eligible cases,

CUP-A assigns a case manager who conducts an evaluation phase with the family and patient (3-4 sessions). After obtaining the informed consent (or parental consent for minors), the case manager activates one of the three intervention paths, guided by the distress level assessed through clinical judgment: 1) gradual discharge with periodic consultations (every three to four weeks) for mild distress, 2) brief focused therapy of 10 sessions for mild to moderate distress, or 3) referral to secondary services for complex cases.

This pilot study aims to describe patient demographics, motivations for seeking help, and the pandemic’s impact on various aspects of life, as well as evaluate the effectiveness of the three intervention paths in improving youth psychological well-being through pre- and post-intervention assessments at the UFDA in Padua’s local health unit (AULSS 6 Euganea) (Allegato A, 2021).

Methods

Procedure

UFDA, serving individuals aged 12 to 24, has specific admission criteria, targeting those in psychological distress or in need of assessment. Exclusion criteria exclude those in current therapy or in psychiatric care with pharmacological treatment, those under social services with conflicted family backgrounds, and those who have residences elsewhere. In alignment with inclusion criteria, the call center operator assigns a case manager responsible for taking charge, coordinating professionals, and planning interventions. Information is gathered through three to four assessment interviews, during which the Italian version of the Strength and Difficulties Questionnaire (Goodman, 1997; Youthmind, n.d.) is administered for screening purposes. A brief *ad hoc* questionnaire mandated by the Veneto region is also completed for an overview of the patient demographics. The evaluative phase concludes with a feedback session, laying the groundwork for the therapeutic agreement.

This study was approved by the ethics committee of Azienda ULSS 6 Euganea (N. 271 06.04.2023).

Participants

Participants for the study were selected from 425 young people who initially sought appointments at UFDA between April and December 2022. This specific time frame was determined by the funding allocated by the Veneto region for the pilot phase of UFDA, which was suspended in 2023 due to a general cut of health resources in the country. Among them, 68 were excluded for not meeting admission criteria, 84 submitted incomplete questionnaires, and 18 questionnaires were lost. The final sample comprised 255 young people with a mean age of 17 years ($SD=3.32$). 182 were female (71%; mean age =17; $SD=3.32$) and 73 were male (29%; mean age =17.45; $SD=3.37$). In the follow-up phase, the SDQ follow-up assessment was completed by 62 of the initial 255 participants, with a response rate of 24%. Additionally, there was a separate group for parents who completed the informant version of the SDQ. Among the 255 young people involved, 113 (44.3%) had at least one parent who completed the initial SDQ, resulting in a total of 170 informant versions of the SDQ, with 106 completed by mothers and 64 by fathers. The data reveals a higher participation rate among mothers, who accounted for approximately 62.4% of the informant responses, compared to fathers contributing 37.6%. In the follow-up phase, out of the initial

sample of 170 parent participants, 27 parents (16%) completed the follow-up version of SDQ. Among these, nine were completed by a single parent, while the remaining nine were completed by both parents.

Measures

The regional questionnaire, mandated by the Veneto region, is designed to collect demographic data, including gender, nationality, and education/occupation. It also investigates the range of difficulties and their impact on life quality, covering aspects such as Internet use, self-harm or suicidal thoughts (“*In the past 6 months, have you ever thought about wanting to die or hurt yourself?*”), loneliness, social interactions, family dynamics, emotional relationships, substance use (“*During the pandemic, did you start or increase the use of substances [cigarettes, alcohol, other substances]? [multiple answers allowed]*”), physical activity, dietary habits, and risky cyber behaviors.

The intervention progress record, an access-restricted spreadsheet, serves as a confidential platform where clinicians log anamnestic data and clinical activities of their patients and monitor their progress. It uses anonymized identification codes to maintain confidentiality. The module tracks variables such as referral type, reasons for seeking help, duration and severity of distress, intervention type determined by distress severity, session attendance, and current intervention status.

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997; Youthmind, n.d.) validated across multiple countries, serves as a cost-effective and efficient tool for screening and measuring outcomes in mental health care and research (Brann *et al.*, 2018). It offers both self- and informant-report versions, with 25 items to be rated on a three-point Likert-type scale. Designed to evaluate emotional and behavioral issues in children and adolescents, the SDQ features four problem scales – emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems – and one strength scale: prosocial behavior scale. Each scale generates scores ranging from 0 to 10, contributing to a total difficulties score (0 to 40). Higher scores indicate more problems or better prosocial behavior. In our study, the Italian translation of the self- and informant-rated versions are utilized, including follow-up versions, to detect changes post-intervention. Scoring procedures are available online (Youthmind, n.d.). The brief nature of the SDQ and its availability in both adolescent and young adult versions allowed consistency across age groups while minimizing respondent burden. This was particularly relevant given the context of the pandemic, as a brief and straightforward measure was preferred to reduce potential stress or isolation associated with the assessment process. However, it is important to note that normative data specific to the age group of our sample is currently lacking. For adolescent normative data, we relied on preliminary findings from the Look@Me project, a study presented at the 9th International Congress of Clinical and Health Psychology in Children and Adolescents (Mancinelli & Salcuni, 2023). This study, which is currently under review in *Scientific Reports*, provides normative data based on a representative sample of 702 Italian adolescents aged 11 to 17 (Mancinelli *et al.*, under review).

Data analyses

The data was analyzed using RStudio for Windows (version R 4.0.3). Descriptive statistics, including percentages, frequencies, quartiles, median, mean, interquartile range, standard de-

viation, skewness, and kurtosis, were calculated to examine data distribution and variability. Pearson’s chi-square test assessed the distribution of age and gender in the sample. The one-sample t-test compared the underage sample to established norms, assuming that the Shapiro-Wilk and Bartlett’s tests were satisfied; otherwise, the Wilcoxon signed-rank test was used. The Wilcoxon rank-sum test was employed to compare self- and informant-report data, while Spearman’s Rho correlation coefficient assessed the degree of correlation between them. For evaluating changes in SDQ scores from pre- to post-intervention, the Wilcoxon signed-rank test was applied across the entire sample, without distinction for gender or age.

Results

Sample characteristics

According to the regional questionnaire (participation rate: 94%), 72% identified as female and 28% as male. 94% were Italians, whereas 6% represented other nationalities. The analysis revealed no significant differences in the sample size of adolescents and young adults ($\chi^2(1)=3.77, p=0.05$), suggesting an even distribution of age groups within the sample. However, gender distribution differed significantly ($\chi^2(1)=46.59, p<0.001$) with a female majority, which was consistent in both age groups ($\chi^2(1)=0.01, p=0.90$).

Educational attainment varied among participants, with 49% enrolled in high school, 21% in middle school, 17% in college, 5% employed, and less than 5% categorized as NEET. Regarding experienced difficulties, emotions were the predominant area of concern (21%), followed by mood-related challenges (19%), family-related issues (14%), and school-related difficulties (12%) in the previous year. The distribution of challenges in areas such as friendships, interpersonal relationships, and behaviors ranged from 10% to less than 5%. Notably, 13% reported difficulty in only one area, 15% in two areas, and the majority (24%) in three or more areas. Participants reported a noticeable decline (85%) in life quality since the onset of the pandemic. In the previous year, internet usage was deemed excessive by 66% of individuals, and 62% disclosed intrusive thoughts related to self-harm or suicide in the past 6 months. Concerning substances, 45% either started or increased substance use during the pandemic, with 80% reporting use of only one substance.

In terms of loneliness and contact with friends in the preceding 6 months, 25% reported an increase in loneliness, 18% experienced reduced contact with only a few friends, and 11% reported neither loneliness nor decreased contact. 51% selected two options. 38% reported a worsening pattern in their emotional relationships. Concerning family dynamics, 38% reported positive relationships, 27% reported negative dynamics, and less than 35% reported relationships as neither positive nor negative. Pertaining to nutrition, 45% consumed more junk food and snacks in the last year. In terms of exercise, 47% experienced a decrease, 21% saw an increase, and 32% reported no change during the pandemic. Involvement in risky cyber behaviors was limited in the previous year, with 88% reporting no engagement, 8% in cyberbullying, and 3% in cybersex, while less than 1% reported involvement in both behaviors.

According to the intervention progress record, nearly half of the referrals (46%) originated from parents, 27% from hospital departments, 5% from schools or social agencies, and 22%

from self-referrals. Among the motives for seeking help were anxiety or panic (30%), identity problems (22%), and relationship problems (14%). The incidence of eating disorders and self-harming behaviors collectively accounted for less than 5%, similar to the prevalence of grief within the sample (5%).

Nearly half of the patients experienced distress for a few months (45%), with the second most prevalent distress duration being one year (25%). Approximately 20% of patients reported distress durations either shorter or longer than a year. Approximately 10% of patients reported experiencing distress for even longer durations. Data on the duration of distress remains unknown for 182 out of 255 patients.

Regarding distress severity, the assessment is conducted relying on the clinical judgment of the case manager. Half of the patients presented slight severity (50%), while almost the other half (43%) exhibited problematic severity. Severe cases were relatively low (7%), as these individuals are typically referred to more specialized services. However, data related to the type of intervention remains undisclosed for 217 out of the total 255 reports, necessitating caution in drawing conclusions.

The number of sessions ranged from a minimum of one to a maximum of 18, falling short of completing two full cycles of psychotherapy. Parents' consultation sessions span from a minimum of 1 and a maximum of 7 sessions. There are 46 missing data for young people's session counts and 58 for parents' session counts. More than half of the interventions (53%) are concluded, 19% voluntarily interrupted the intervention, while 26% were either sent or temporarily suspended due to a temporary UFDA suspension and are awaiting re-engagement. However, only 225 reports are available for this variable, indicating some missing data for the analysis.

A comparative analysis was conducted between the adolescent subgroup (n=143, aged 12-17) from our sample and the findings from the Look@Me project (Mancinelli & Salcuni, 2023), using data from 702 Italian adolescents aged 11 to 17 (Mancinelli *et al.*, under review).

For male adolescents, t-tests indicated higher emotional

symptoms ($t(39)=3.58$, $p<0.001$; 95% CI [3.49, 5.15]), hyperactivity/inattention ($t(39)=3.64$, $p<0.001$; 95% CI [4.34, 5.75]), and lower prosocial behavior ($t(39)=-2.31$, $p=0.03$; 95% CI [6.37, 7.52]) scores. Wilcoxon signed-rank tests revealed increased levels in conduct problems ($V=568$, $p=0.03$; 95% CI [2.49, 3.99]), peer relationship problems ($V=568$, $p=0.03$; 95% CI [2, 3.50]), and total difficulties ($V=722$, $p<0.001$; CI [13, 17.49]). For female adolescents, Wilcoxon Signed-Rank tests showed significantly higher levels of emotional symptoms ($V=4057$, $p<0.001$; 95% CI [5.50, 6.50]), conduct problems ($V=3862$, $p<0.001$; 95% CI [2.50, 3.50]), hyperactivity/inattention ($V=4455$, $p<0.001$; 95% CI [4.99, 5.50]), peer relationship problems ($V=4187$, $p<0.001$; 95% CI [2.50, 3.50]) and lower prosocial behavior ($V=1684$, $p<0.001$; 95% CI [7, 7.99]) scores. Additionally, a t-test for total difficulties highlighted more difficulties in females ($t(101)=-21603$, $p<0.001$; 95% CI [16.59, 18.91]). For the impact score, 60% of males and 73.5% of females reported an abnormal impact level (score ≥ 2). See Table 1 (refer to *Supplementary Figures 1 and 2* for the distribution of scores across different scales).

Currently, there is a lack of established Italian norms for the informant version of the SDQ tailored to the age groups of interest in this study. The study involved a comparative analysis between the self-report data and the informant reports (N=170). Given the sample size, the analysis was not stratified by age group or gender. The Wilcoxon rank-sum test revealed significant findings only for the emotional symptoms scale ($W=17163$, $p=0.002$), the hyperactivity/inattention scale ($W=19622$, $p<0.001$), and the total difficulties score ($W=17643$, $p<0.001$), with young people reporting higher scores compared to their parents. Spearman's rank revealed a weak positive monotonic correlation for the hyperactivity/inattention scale ($\rho=0.30$), prosocial behavior scale ($\rho=0.33$), total difficulties score ($\rho=0.31$), and impact score ($\rho=0.24$). On the other hand, for the emotional symptoms scale ($\rho=0.41$), conduct problems scale ($\rho=0.46$), and peer relationship problems scale ($\rho=0.47$), there was a moderate positive monotonic correlation of scores.

Table 1. Descriptive statistics of SDQ scale scores.

Scales of SDQ	Length	Q1	Q2	Q3	Q4	Mean (SD)	β_2	α_3	$\mu(\sigma)$
Male									
Emotional symptoms	40	2	4	6	10	4.33 (2.61)	-0.87	0.40	2.85 (2.20)
Conduct problems	40	1	3	5	8	3.17 (2.21)	-0.87	0.47	2.35 (1.75)
Hyperactivity/inattention	40	4	5	6	10	5.05 (2.21)	-0.17	0.22	3.78 (2.13)
Peer relationship problems	40	1	3	5	8	3.05 (2.19)	-0.90	0.39	1.64 (1.83)
Prosocial behavior	40	6	7	8	10	6.95 (1.80)	-0.46	-0.32	7.61 (1.82)
Impact score	40	0	2	3.25	7	2.25 (2.07)	-0.80	0.57	-
Total difficulties score	40	11	14	18.5	32	15.6 (6.21)	-0.11	0.78	10.63(5.49)
Female									
Emotional symptoms	102	4	6	8	10	6.18 (2.53)	-1.19	-0.04	4.65 (2.61)
Conduct problems	102	2	3	4	9	3.15 (1.89)	0.34	0.67	2.48 (1.78)
Hyperactivity/ inattention	102	4	5	7	9	5.24 (2.01)	-0.56	-0.31	3.65 (2.21)
Peer relationship problems	102	1.25	3	5	9	3.20 (2.31)	-0.64	-0.48	1.88 (1.89)
Prosocial behavior	102	6	8	9	10	7.42 (2.17)	-0.64	0.48	8.09 (1.69)
Impact score	102	1	3.5	5	9	3.5 (2.38)	-0.77	0.22	-
Total difficulties score	102	14	18	21	32	17.75 (5.92)	-0.31	0.25	12.67 (6.18)

Q1, first quartile; Q2, second quartile (median); Q3, third quartile; Q4, fourth quartile; SD, standard deviation; β_2 , kurtosis; α_3 , skewness; μ , normative mean; σ , normative standard deviation.

Intervention outcomes

One month post-intervention at UFDA, the SDQ follow-up version was completed by 62 of the initial 255 participants (response rate: 24%). The gender distribution across age groups showed no significant difference ($\chi^2(1)=2.8314e-31$, $p=1$), comprising 73% females and 27% males. Given the sample size, the analysis was not stratified by age group or gender. A Wilcoxon signed-rank test indicated significant decreases in scores from pre-treatment to follow-up for several scales: emotional symptoms ($V=1409$, $p<0.001$), conduct problems ($V=1051.5$, $p<0.001$), hyperactivity/inattention ($V=985.5$, $p<0.001$), peer relationship problems ($V=776$, $p<0.001$), total difficulties ($V=1526$, $p<0.001$), and impact score ($V=1167.5$, $p<0.001$). For the prosocial behavior scale, although scores increased, this change was not statistically significant ($V=328$, $p=0.11$) (Figure 1).

Regarding the informant reports, out of the initial sample of 170 informants, 27 (16%) completed the follow-up version of SDQ. Among these, nine were completed by a single parent, while the remaining nine were completed by both parents. Significant decreases were observed in parents' perception of their children's peer relationship problems ($V=222$, $p=0.01$), prosocial behavior ($V=44.5$, $p=0.01$), total difficulties ($V=204$, $p=0.04$), and impact scores ($V=149.5$, $p<0.001$). Conversely, emotional symptoms ($V=146$, $p=0.13$), conduct problems ($V=141.5$, $p=0.16$), and hyperactivity/inattention ($V=90.5$, $p=0.87$) did not show significant changes (Figure 2).

Discussion

The study provides preliminary data on the effectiveness of interventions during the pilot phase of the UFDA service in Padua's LHU (AULSS 6). The first objective was to describe the sample of people who sought help from the UFDA. The sample was predominantly female and varied in educational status, with the majority of students attending high school. These observations align with research showing that adolescent females more frequently seek mental health support (Radez *et al.*, 2021). The regional questionnaire highlighted emotional and mood-related difficulties as top concerns, alongside family and school issues. Consistently, a Substance Abuse and Mental Health Services Administration report notes that about half of adolescents seek mental health services for emotional and mood-related issues, with family and academic problems also being prevalent reasons (Lipari *et al.*, 2016). The questionnaire data revealed that the pandemic significantly impacted life quality, leading to issues like excessive internet use, substance abuse, and intrusive thoughts related to self-harm or suicide, providing valuable insights into the challenges faced by UFDA's clientele. Additionally, while the majority reported no involvement in negative behaviors, feelings of loneliness and reduced contact with friends were prevalent among participants. Literature corroborates our findings, highlighting prevalent feelings of loneliness (Beam & Kim, 2020), increased internet (Lee, 2020) and substance use (Remesan *et al.*, 2023), re-

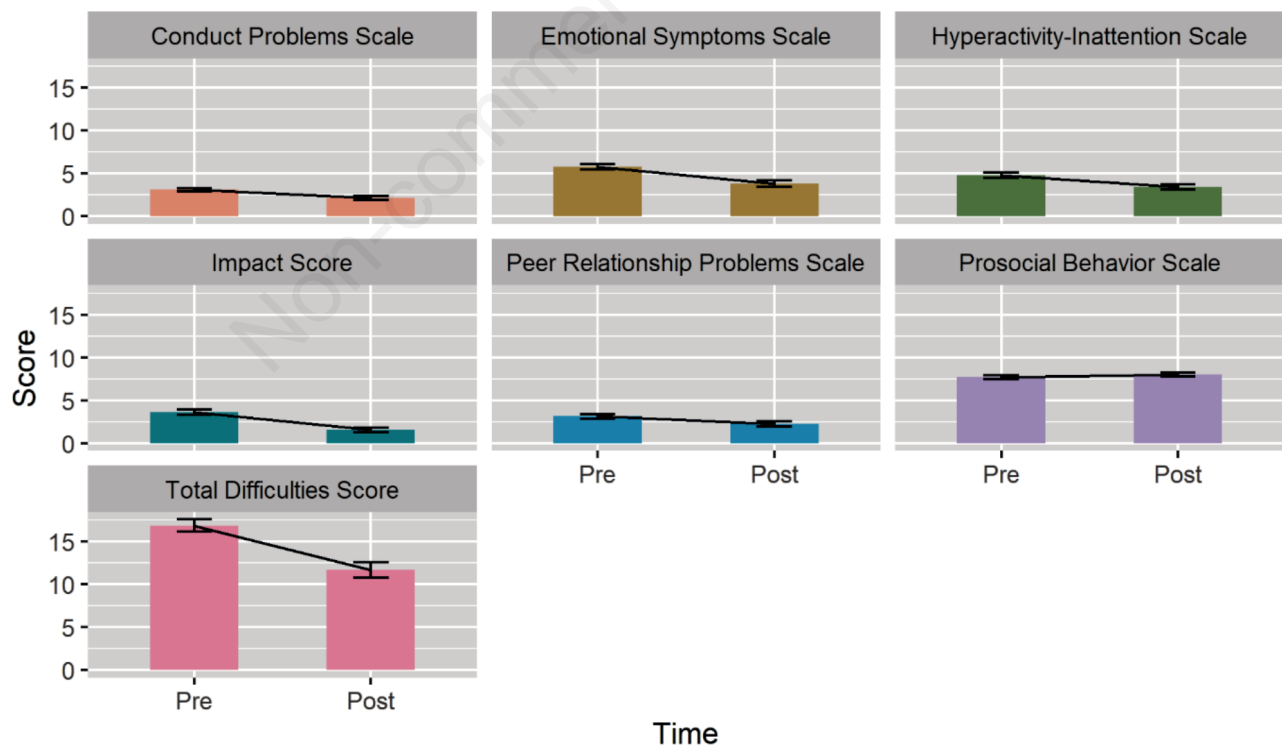


Figure 1. The plot displays the pre-intervention (pre) and post-intervention (post) scores for five scales, along with the impact and total difficulties scores from the self-report version of the SDQ. Each bar represents the mean score, with error bars indicating score variability. The five scales and impact score range from 0 to 10, contributing to a total difficulties score ranging from 0 to 40. Higher scores indicate more serious problems or better prosocial behavior.

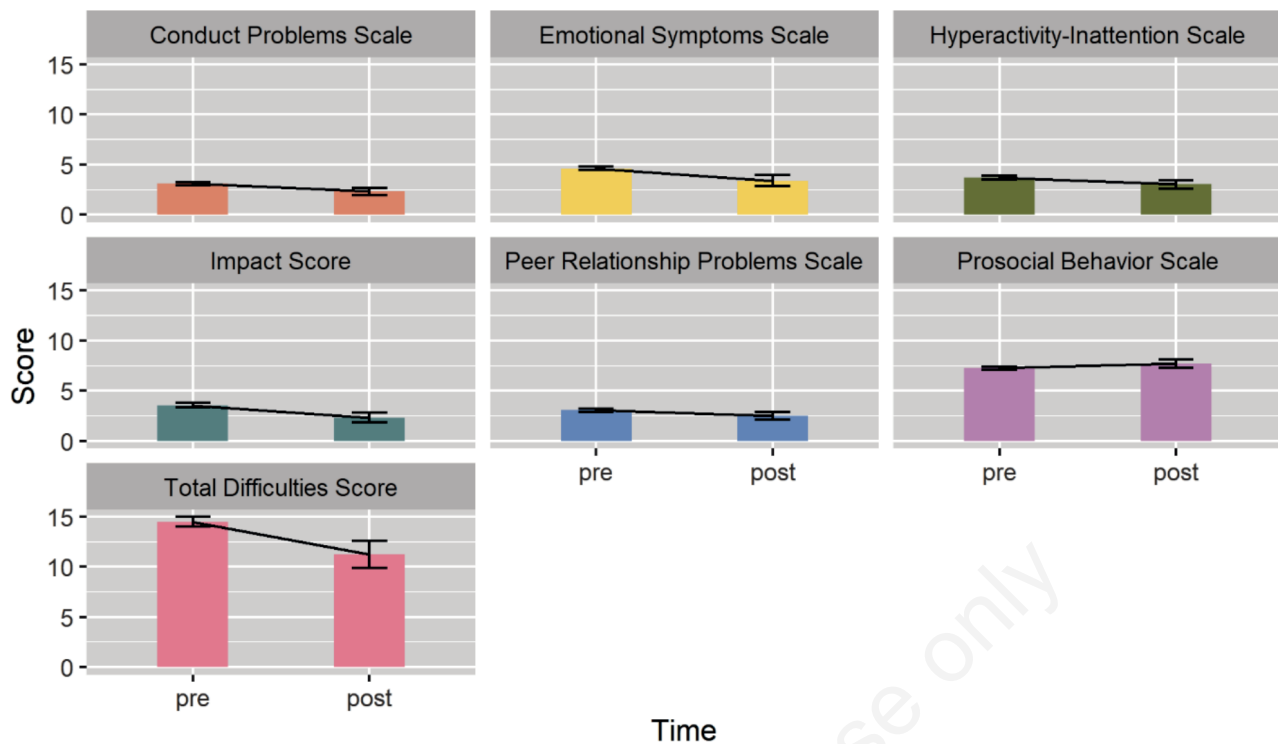


Figure 2. The plot displays the pre-intervention (pre) and post-intervention (post) scores of five scales, along with the impact and total difficulties scores from the informant version of the SDQ. Each bar represents the mean score, with error bars indicating score variability. The five scales and impact score range from 0 to 10, contributing to a total difficulties score ranging from 0 to 40. Higher scores indicate more serious problems or better prosocial behavior.

duced social interactions (Lippke *et al.*, 2021), and lifestyle changes such as altered eating habits and decreased physical activity (Farello *et al.*, 2022).

The second objective focused on evaluating intervention status using qualitative data from the intervention progress record. Parents were the primary referral source, emphasizing their active involvement. Other hospital departments and self-referrals were also featured, aligning with UFDA's accessibility goals. Anxiety, identity issues, and relationship problems were prominent motives for seeking assistance. Distress duration varied, with approximately half facing short-term distress and one year being the second most prevalent duration. Severity levels were equally distributed, with a low prevalence of severe cases, aligning with referral practices to specialized services. Consultation sessions adhered to a brief, focused therapy program, with no cycles exceeding 20 sessions. Importantly, the intervention status data indicated the successful conclusion of most cases. However, voluntary dropouts and temporary suspensions due to UFDA's temporary closure were present.

Analysis of the self-report version of the SDQ completed by adolescents provides insights into the difficulties faced by our sample group and their impact on their daily functioning. When compared to our reference (Mancinelli *et al.*, under review; Mancinelli & Salcuni, 2023) our participants exhibited significantly higher scores in all difficulty scales. Moreover, our sample demonstrated lower scores on the prosocial behavior scale compared to the general population. The impact scores from the questionnaire completed by male adolescents revealed significant effects of their problems on daily functioning, while female ado-

lescents experienced an even more abnormal influence of their difficulties on their lives. These findings underscore the elevated levels of emotional and behavioral problems experienced by our sample upon their arrival at UFDA, emphasizing the necessity for targeted interventions.

Moreover, our study examined the concordance between self-reported and informant-reported SDQ data. The SDQ's multiple-informant method can provide valuable insights into the difference between an individual's perception of their difficulties compared to how these difficulties are perceived by significant others. For instance, as the prevalence of reported issues rises, so does the discordance between self-reported and informant-reported SDQ data (Gray *et al.*, 2021). Understanding these discrepancies is crucial for accurately identifying and addressing the mental health needs of young people, considering that parents often serve as the primary source of referral. The concordance analysis revealed a moderate level of agreement between self-report and parent-report measures across most scales. However, specific areas, including emotional symptoms, hyperactivity/inattention scales, and total difficulties score, displayed noteworthy disparities between informants and self-reports, with correlations remaining moderate to weak. This modest level of agreement aligns with literature, as parents tend to report fewer problems in these areas compared to their children's reports (Booth *et al.*, 2023; De Los Reyes *et al.*, 2013; De Los Reyes *et al.*, 2015; Gray *et al.*, 2021; Kawabe *et al.*, 2021).

In the analysis of SDQ scores pre- and post-intervention, significant positive outcomes were observed. In self-reports, reductions in all difficulty scale scores are observed, except for prosocial behavior scale scores, which showed improvement without reach-

ing statistical significance. Parents reported lower scores in all problematic areas, with statistical significance observed in peer relationship problems, prosocial behavior, total difficulties, and impact scores. Although parents also reported lower scores in emotional symptoms, conduct problems, and hyperactivity/inattention scales after the intervention, these differences were not statistically significant. These results can likely be attributed to the small sample size of the matched self and informant reports at follow-up, which were a total of 21, limiting the generalizability of the findings and any interpretation of the results, limiting the generalizability of the findings and any interpretation of the results.

Several noteworthy limitations warrant consideration in interpreting our study's findings. Firstly, even though this is the first attempt to evaluate the UFDA service, the modest sample size, especially during follow-up, limits the generalizability of our results. This limitation is accentuated by a gender imbalance, with a significant female majority in the sample. The observational nature of the study also restricts our ability to differentiate the impacts of UFDA intervention from those attributable to natural maturation or external factors like the pandemic. The absence of a control group impedes our ability to conclusively ascertain whether the UFDA provides superior mental health care for youth compared to the standard public mental health services. The high dropout rate raises concerns regarding participant engagement and data completeness, introducing attrition bias. Observer biases in human-judged assessments reported in the intervention progress record might have influenced the findings. Additionally, our study exclusively employed the SDQ for screening and follow-up assessments of psychological well-being. While the SDQ is a globally validated and psychometrically robust tool, there is a lack of normative data for the full age range of our sample, and its role as a screening tool does not provide diagnostic information, limiting its utility in clinical decision-making. Its primary focus is on psychological difficulties, with the prosocial behavior scale being the sole indicator of strengths, which might have restricted our understanding of psychological changes, particularly in terms of resilience and positive mental health factors. To enhance data quality and improve future evaluations, we recommend adopting a more comprehensive battery of assessment tools recommended by positional papers and meta-analyses (Bentley *et al.*, 2019; Krause *et al.*, 2022) alternative to self-reporting tools that evaluate various facets of psychological resources and resilience, and a multi-level screening strategy with differentiated additional testing. The subsequent phases of UFDA should include more extensive data, unveil the motivations behind dropouts, and achieve nuanced profiling of patients across severity categories to accurately tailor individualized intervention projects. With more robust methodologies, future research can contribute to the continuous improvement of mental health services for youth in Italy.

Conclusions

UFDA represents a shift from traditional intervention-centric approaches to proactive, early-stage psychosocial support in Italy. This preventive strategy does not only aim to reduce hospitalization and relapse rates but also strives to minimize treatment durations, fostering sustained, long-term mental well-being for youth. Notably, UFDA addresses the continuity of care during the challenging transition from Child and Adolescent Mental Health Services to Adult Mental Health Services, a phase often associated

with high drop-out rates. The pilot phase of UFDA serves as a step toward standardizing youth mental health services at the national level. The assessment of data during this phase is crucial for understanding epidemiological trends and for the continuous evaluation and improvement of the service. Such advancements are critical for the evolution of youth mental health care in Italy, following the intervention models that resonate with the distinctive needs of this population (Hetrick *et al.*, 2017; McGorry *et al.*, 2022; McGorry *et al.*, 2024).

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Online supplementary material:

Supplementary Figure 1. Female SDQ data.

Supplementary Figure 2. Male SDQ data.