Impact of emotional intelligence (EI) on social network abuse among adolescents during COVID-19 outbreak in Italy.

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To the Editor,

A period of confinement or quarantine as that derived from the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has implied a radical change in the population's lifestyle disrupting usual daily activities leading an increased prevalence of Health Risk Behaviors (HRBs) i.e., with potentially negative effects on health, such as inadequate physical activity, poor diet in European adults, or an exacerbation of Online Social Networks (OSNs) use particularly among young generation, which may consequently lead to a higher risk of distress. Social media abuse is an emerging psychiatric disorder (*IAD - Internet Addiction Disorder*) caused by a maladaptive use of online platforms and virtual technologies with withdrawal, craving, tolerance, interpersonal and health-related consequences that can affect social interactions, self-confidence and sense of time and space. Adolescence is one of the main transitions in life characterized from biological, social, and psychological changes where social networks are working to satisfy personal needs such as social acceptance and self-esteem. Emotional Intelligence (EI) could improve self-awareness preventing the adverse effects of social media overuse because it refers to a constellation of emotional self-perceptions situated associated with enhanced self-concept, adaptive coping styles, socioemotional competence, lower levels of somatic complaints, anxiety, depression, anger, and disruptive behavior (1). Knowledge about the real impact of social media on adolescents' psychological functioning is still incomplete and quite misleading. The development of self-regulation skills is a slow process and well-being is not always easily achieved. Pandemic had a strong impact on adolescents' psychological wellbeing (2). We aimed to fill the gap in the existing research concerning the moderation role of EI among adolescents during COVID-19 outbreak, which may have determined an abuse of social media. With this purpose, we carried out a web-based survey on Google Modules platform exploring OSNs and distress among individuals aged between 16-18 years attending secondary schools of the northern of Italy.

Participants completed the Bergen Social Media Addiction Scale - BSMAS (3) to evaluate the use of social network and social media reflecting each core aspect of addiction (*Salience*, *Mood modification Tolerance*, *Withdrawal*, *Conflict*, and *Relapse*. To obtain measures of anxiety, depression and stress, the Depression Anxiety Stress Scales (DASS-21) (4) was employed. Finally, the Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-SF) (5) was employed to explore emotional dimensions. It included 15 facets producing four correlated factors, which may further be arranged to determine a global trait EI score: *Well-Being*, *Self-Control*, *Emotionality*, and *Sociability*.

The mean age was of 17 years and 64.6% of respondents were females. In Table 1 means from the BSMAS, DASS-21, and TEI-Que-SF and comparisons by gender for the total scores are included. Paired-samples t-test was used to assess the differences between groups, and multivariate logistic regression was computed to capture explanatory variables. The

Table 1. Mean scores at subscales of the questionnaires and comparisons by gender for the total scores.

	Females	Males	
BSMAS	M ± SD	M ± SD	p
Salience	3.66 ± 1.11	3.25 ± 1.22	
Mood Mod.	3.18 ± 1.23	2.70 ± 1.26	
Tolerance	2.70 ± 1.35	1.99 ± 1.14	
Withdraw	2.13 ± 1.13	1.72 ± 0.94	
Conflict	1.80 ± 1.06	1.51 ± 0.76	
Relapse	2.27 ± 1.27	2.62 ± 1.22	
Mean Total	2.62 ± 0.78	2.21 ± 0.70	< 2.2e-16
DASS-21			
Anxiety	4.03 ± 4.19	3.45 ± 4.12	
Depression	5.25 ± 9.30	5.82 ± 4.64	
Stress	9.30 ± 5.03	6.97 ± 4.57	
Mean Total	6.19 ± 6.17	5.14 ± 4.44	< 2.2e-16
TeiQue-SF			
Well-being	28.42 ± 8.26	30.82 ± 8.03	
Self-control	23.14 ± 6.72	26.95 ± 5.48	
Emotionality	25.53 ± 4.40	25.75 ± 4.05	
Sociability	26.82 ± 6.76	25.44 ± 4.27	
Mean Total	34.05 ± 6.31	36.12 ± 6.07	< 2.2e-16

Note: M - Mean value; SD - Standard deviation; p - Significance level according to the t-test

OSNs abuse among females was significantly higher compared to males [t (225) = 46.56, p = <2.2e-16]. Concerning general distress assessed by the DASS-21, female exhibited significantly higher levels compared to males [t (225) =11.46, p = < 2.2e-16]. Conversely, concerning the TEI-Que-SF, males reported significantly higher scores than females [t (224) = 51.57, p = < 2.2e- 16] displaying higher levels of "Well-being", "Self-control", and "Sociability". Having high stress levels (β = .116, SE = .037, p = 0.002, OR = 1.12) and low EI levels (β = -.014, SE = .007, p = 0.054, OR = 0.99) seems to predict the possibility to incur in a social network addiction (*Pseudo* R^2= 0.15). Having frequent social network usage (β = .123, SE = .037, p = 0.001, OR = 1.31), low levels of general well-being (β = -.577, SE = .137, p = 2.61e-05, OR = .56), and high emotionality (β = .358, SE = .208, p = 0.086,

OR = 1.43) predicted the probability of develop an anxiety disorder (*Pseudo* R^2 = 0.20). Furthermore, a social network abuse associated with low well-being anticipated a higher probability to incur in depression. Lastly, high social network usage (β = .110, SE = .038, p = 0.004, OR = 1.16), low well-being (β = -.244, SE = .039, p = .078, OR = .78), and self-control (β = -.490, SE = .192, p = .010, OR = .61) predicted the likelihood to develop a stress disorder (Pseudo R^2 = 0.18).

Our study is one of the first attempts to examine the relationship between EI levels and social network addiction in the quarantine period. OSNs usage emerged among adolescents as a mitigating factor for social support absence and potentially harmful effects of social alienation. Our results added a gender difference about how students approach social networks: females reported to be engaged on OSNs more consistently than males, probably because girls spend more time than boys in creating self-referred contents to express own identity and to manage positive and negative images of themselves to promote their best self-presentation. Female respondents have higher levels of psychological distress and lower levels of EI than males: this leads to conclude that individuals with higher distress and lower EI, are more prone to regularly use social networks. A high score of "Emotionality" enhanced the probability of developing anxiety disorders with a substantial impact on well-being and social network abuse. Frequent social network usage can rise the probability of developing depressive and stress disorders, causing a significant decline of self-control and well-being (6). EI seems to alleviate the symptoms of both stress and depression, encouraging the possibility of being more self-confident and self-conscious. In our investigation, stress turned out to be the unique psychological predictive variable for frequent social network usage. The relationship between EI and social network usage is negative: an increased EI is related to a decreased social network usage, confirming the role of EI as a good predictor for social networking addiction. Therefore, it is possible to suppose a gender specific trajectory: evidence suggests that most women spend more time on social media compared to men. The lower EI female' scores in our research could unveil a sense of discomfort experienced during this

vulnerable period. Concerning social network use, our findings suggested that it is essential to keep particularly under control adolescents' female habits, because it has implications on their overall psychological well-being. The appropriate use of OSNs requires a culture and awareness of how they should be used properly. Since students who have high levels of anxiety, depression and stress are more at risk of social network abuse, designing and implementing counseling programs to promote mental health is strongly recommended.

Literature has already showed that EI is essential to manage emotions, especially in the approach and closeness to others. The key contribution of this paper is the evaluation of EI as a element able to regulate online interactions reducing dysfunctional behaviors and distress symptoms. Future research could include other personality traits and additional socio-demographic variables, to better focus the adolescent's living environment. In this perspective, can be important bringing EI as content of study at schools and becomes fundamental to support adolescents in their identity development; targeted interventions focused on how increasing self-awareness, self-control of negative feelings and frustration, empathy and open-mindedness to judgments may lead to a lower number of teens taking refuge behind a screen to feel in tune with the whole world, unable to wittingly manage their feelings.

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