Attachment representations and generalized problematic Internet use in a sample of high school students in transition from adolescence to emerging adulthood.

Carolina Facci[a] , Andrea Baroncelli[a] , and Enrica Ciucci[a]

[a] *University of Florence, Department of Education, Languages, Intercultures, Literatures, and Psychology, Via di San salvi,12, 50135, Florence, Italy*

Abstract

The present study was conducted to explore the unique associations of different attachment representations to generalized problematic Internet use (GPIU) within a community sample of middle-school students that are in transition from adolescence to emerging adulthood. 180 youths (72 girls, mean age = 18.29 years, DS = .46 years) took part to the study. In line with expectations from extant literature, dimensions of insecure-anxious attachment were uniquely associated to the total score of GPIU, as well as to its subcomponents (with the exception of negative outcomes). Importantly, there also emerged the unique role of insecure-avoidant attachment, that was positively associated to the total score of GPIU, as well as to its specific subscales related to the preference for online social interaction and the deficient self-regulation in using the Internet. These results consolidate the suggestion that GPIU occurs within a context in which youths perceive the Internet as a medium to regulate stress and anxiety that derives from face-to-face social interactions; moreover, they also suggest that GPIU occur within a context in which youths choose a social approach that is more distancing than traditional face-to-face relationships.

Keywords 1

Attachment Representation; Generalized Problematic Internet Use; Adolescence; Emerging Adulthood; Social Development

1. Introduction

The present study aimed to advance knowledge about socioemotional correlates to generalized problematic Internet use (GPIU), by exploring unique associations between continuous measures of attachment representations and GPIU in a sample of high school students that are in transitions from adolescence to emerging adulthood. As underlined by classical studies, one of the main developmental tasks in this period consists in laying the foundations for the construction of a stable and coherent identity [1]. Several studies have highlighted that the use of the Internet can constitute both a risk and a resource for the process of identity development [2-3]. Specifically, the problematic Internet use (PIU) refers to difficulties in regulating the time spent in online activities, that in turn can lead to maladaptive outcomes in daily life [4]. According to both Davis [5] and Caplan [6], these difficulties can pertain either to a specific problematic Internet use (SPIU), in which one or more content-specific Internet functions are the core problem (e.g., online gambling, shopping, sexual material, etc.), or to a GPIU, in which

individuals present a maladaptive preference for the socio-communicative aspects of the Internet.

As for the specific of GPIU, youths with high levels of internalizing problems (e.g., loneliness, anxiety, depression) are more prone to perceive the use of the Internet as a simple way to regulate their emotional states in social interactions, feeling safe and competent; nevertheless, over time they develop a compulsive attitude toward this medium, damaging residual face-to-face social relationships and reaching low school/work performances [6-10]. Recently, research on socioemotional correlates to GPIU considered areas other than internalizing problems; for instance, it has been suggested that youths with high levels of a callous and unemotional attitude toward others can benefit from social relationships managed online, considering that the interpersonal distance provided by the Internet medium is suitable for manipulate and attack others without wondering about their sufferance [11]. Starting from the above-mentioned results, we aimed to in-depth explore the relational characteristics associated to GPIU in adolescent which are in transition from adolescence to emerging adulthood, assuming that different motivations pertaining social relationships may coexist and lead to the development of GPIU. In this view, we paid attention to the construct of attachment representations. Attachment refers to the search of proximity and security to specific caregivers [12]; over time, attachment relationships define specific mental representations about the Self, the caregivers, and the relationships between the Self and the caregivers (i.e, attachment representations), that have an important influence on future social relationships [13]. Briefly, a "secure" attachment representation implies a positive view of both the Self and others, with a consequent trustworthiness in social relationships; on the contrary, an "insecure" attachment representation derives from negative attachment experiences with social partners, that can result in considering oneself as not worthy of love and care (i.e., "insecure-anxious" attachment representation), or not in need of close relationships (i.e., "insecure-avoidant" attachment representation) [13-14]. Extant research on PIU has found positive correlations with problematic interpersonal relationships and attachment insecurity to both mothers and fathers; specifically, it has been suggested that insecure attachment representations can drive adolescents in developing a PIU as a coping strategy to regulate stress and anxiety in face-to-face social transaction [15-18].

Starting from the above-reported literature, in the present study we aimed to advance the knowledge about attachment representations and GPIU in several ways. First, most of extant results refers to PIU (i.e., without distinguishing between SPIU and GPIU), or to specific social media (e.g., Facebook); in the present study, we focused on the specific construct of GPIU, hypothesizing to confirm the positive association between insecure-anxious attachment and the presence of high levels of GPIU (considering both the total score and all its specific subscales). Moreover, we adopted continuous measures of attachment representations, in order to consider the unique role of secure, insecure-anxious, and insecure-avoidant attachment in the associations to GPIU; in fact, we sought to explore whether the specific insecure-avoidant attachment had a unique role in GPIU. In line with previous results about CU traits [11], we hypothesized that a distancing representation of relationships with others could induce youths to prefer and over-invest in Internet-mediated relationships, and this in turn could lead to GPIU. In addition, while the majority of previous studies considered attachment toward parents or within family context, we chose to consider attachment representations with multiple social partners; this was particularly important due to the specific transition here considered (i.e., from adolescence to emerging adulthood), during which relationships with classmates, friends, and romantic partners assume a great importance.

2. Method
2.1. Participants and procedures

We contacted three scholastic Institutions located in Central Italy to propose a research collaboration in the field of adolescence, psychological development, and the use of new technologies. Institutional Review Boards and School Deans approved all procedures, and written informed consent was requested for each student; specifically, written informed consent was asked to parents of students under the legal adult age in Italy (i.e., 18 years), while it was directly obtained from adult students (i.e., over the age of 18 years). About 800 students were contacted, and about 600 students gave their consent to participate in the research. Trained assistants administered study questionnaires in the classrooms during two school hours. For the purpose of the present study, we selected from our database only adolescents over the age of 18 years; moreover, we applied the following exclusion criteria: inaccuracy in completing questionnaires (i.e., multiple items with no answer, or with all identical answers), psychiatric diagnosis or mental injuries that prevented the understanding of the questionnaires, severe unfamiliarity with Italian language, absence from school during data collection. As a consequence, the final sample of the present study was made up by 180 community sample adolescents (72 girls, mean age = 18.29 years, DS = .46 years); more than 90% of the students were from Italian backgrounds. 8.89% of the students attended Vocational Schools, 44.44% attended Technical Institutes, and 46.67% attended Lyceum High Schools.

2.2. Measures

GPIU. The Generalized Problematic Internet Use Scale 2 (GPIUS2 [6], Italian version by Fioravanti and colleagues [19]) is a 15-item self-report questionnaire that assesses cognition and behaviours related to GPIU. This questionnaire allows both to obtain a total score of GPIU (alpha in the present study = .89), as well as specific scores regarding preference for online social interactions (POSI; 3 items, e.g., "*I prefer communicating with people online rather than face-to-face*", alpha in the present study = .72), the use of the Internet for mood regulation (3 items, e.g., "*I have used the Internet to make myself feel better when I was down*", alpha in the present study = .85), deficient self-regulation in using the Internet (6 items, e.g., "*When I haven't been online for some time, I become preoccupied with the thought of going online*", alpha in the present study = .88), and negative outcomes (3 items, e.g., "*I have missed social engagements or activities because of my Internet use*", alpha in the present study = .75). Students completed the questionnaire using an 8-point Likert-type scale, from 1 (*definitely disagree*) to 8 (*definitely agree*).

Attachment representations. The attachment representations were investigated using the Attachment Style Questionnaire (ASQ [20]; Italian version by Fossati and colleagues [21]). It is 40-item self-report questionnaire that allow to assess five attachment representations: confidence (8 items, e.g., "*I feel confident that other people will be there for me when I need them*", alpha in the present study = .68), discomfort with closeness (10 items, e.g., "*I find it hard to trust other people*", alpha in the present study = .79), relationships as secondary (7 items, e.g., "*To ask for help is to admit that you're a failure*", alpha in the present study = .78), need for approval (7 items, e.g., "*It's important to me that others like me*", alpha in the present study = .69), preoccupation with relationships (8 items, e.g., "*I worry a lot about my relationships*", alpha in the present sample = .77). Participants had to indicate their agreement with each item using a 6-point Likert-type scale, from 1 (*totally disagree*) to 6 (*totally agree*).

2.3. Data Analysis

First of all, we inspected data distribution by examining mean, standard deviation, skewness and kurtosis of each study variable. Subsequently, we realized zero-order correlations:

Kendal's *tau-b* was used for correlations involving "Gender" (i.e., a dichotomous variable), and Pearson's *r* was used for pairs of continuous variables. In order to test the unique role of each attachment representation to the total score of GPIU (and subsequently to each GPIUS subscale) over and above gender, age, and the other measures of attachment representations, main analyses were realized using a linear regression approach.

3. Results

Table 1 illustrates descriptive statistics and zero-order correlations; all variables approached normal distribution (both skewness and kurtosis values were in the range [-2.00; +2.00]), with the exception of the negative outcome subscales form the GPIUS. Since we did not obtain significant improvements from the log-transformation of the scale, we preferred to keep the original scale. Correlation analyses showed that confidence was negatively associated to the variables from the GPIUS (*r*s ranging from -.18, $p < .05$, to -.22, $p < .01$), with the exception of negative outcomes. Moreover, the two scales assessing avoidant attachment representations (i.e., discomfort with closeness and relationships as secondary) were positively related to all the variables from the GPIUS (*r*s ranging from .17, $p < .05$, to .30, $p < .001$). Lastly, the two scales assessing anxious attachment representations (i.e., need for approval and preoccupation with relationships) were positively related to the variables from the GPIUS (*r*s ranging from .21, $p < .01$, to .37, $p < .001$), with the exception of negative outcomes.

Table 2 reports results of linear regressions. Over and above gender and age, total score of GPIU presented unique positive associations to both relationships as secondary ($\beta = .18$, $p < .05$) and preoccupation with relationships ($\beta = .27$, $p < .01$). Considering the specific subscales of the GPIUS, POSI showed unique positive associations to both relationships as secondary ($\beta = .23$, $p < .01$) and need for approval ($\beta = .21$, $p < .05$). Mood regulation presented a unique positive association to preoccupation with relationships ($\beta = .28$, $p < .01$), and deficient self-regulation showed unique positive associations to both relationships as secondary ($\beta = .17$, $p < .05$) and preoccupation with relationships ($\beta = .26$, $p < .01$). Negative outcomes did not show significant associations with attachment representations.

Table 1
Descriptive Statistics and Zero-order Correlations.

	M	SD	Skewness	Kurtosis	1	2	3	4	5	6	7	8	9	10	11	12
1 Gender	-	-	-	-	-											
2 Age	18.29	.46	.91	-1.19	.13	-										
3 ASQ-Confidence	4.09	.70	-.16	-.11	.18*	.07	-									
4 ASQ-Discomfort with Closeness	3.65	.82	.06	-.27	-.16*	.03	-.50***	-								
5 ASQ-Relationships as Secondary	2.27	.84	.86	.94	.22**	-.06	-.30***	.39***	-							
6 ASQ-Need for Approval	3.09	.89	.28	.12	-.14*	-.05	-.34***	.37***	.11	-						
7 ASQ-Preoccupation with Relationships	3.54	.89	-.16	-.49	-.19**	.06	-.27***	.45***	.12	.60***	-					
8 GPIUS-Total Score	2.06	.87	1.12	1.39	.03	-.07	-.21**	.26***	.28***	.34***	.37***	-				
9 GPIUS-POSI	1.94	1.17	1.41	1.57	.03	-.13	-.22**	.19**	.30***	.29***	.21**	-	-			
10 GPIUS-Mood Regulation	2.61	1.67	1.00	.14	.11	-.08	-.18*	.23**	.17*	.30***	.33***	-	.46***	-		
11 GPIUS-Deficient Self Regulation	2.16	1.29	1.38	1.28	-.03	-.04	-.13	.20**	.20**	.29***	.34***	-	.37***	.46***	-	
12 GPIUS-Negative Outcomes	1.46	.87	2.92	11.14	.19**	.05	-.18*	.18**	-.25***	.09	.11	-	.38***	.33***	.50***	-

Notes. * *p* < .05; ** *p* < .01; *** *p* < .001. ASQ: Attachment Style Questionnaire. GPIU: Generalized Problematic Internet Use.

Table 2
Regression Analyses (β scores).

	Gender	Age	ASQ-Confidence	ASQ-Discomfort with Closeness	ASQ-Relationships as Secondary	ASQ-Need for Approval	ASQ-Preoccupation with Relationships	Model	R^2
GPIUS-Total Score	.15*	-.09	-.05	.02	.18*	.16	.27**	$F_{(7,179)}= 7.571$***	.20
GPIUS-POSI	.09	-.12	-.08	-.03	.23**	.21*	.08	$F_{(7,179)}= 5.274$***	.14
GPIUS-Mood Regulation	.28***	-.12	-.08	.07	.01	.13	.28**	$F_{(7,179)}= 6.667$***	.18
GPIUS-Deficient Self Regulation	-.01	-.04	.04	-.02	.17*	.13	.26**	$F_{(7,179)}= 4.547$***	.12
GPIUS-Negative Outcomes	.20*	.04	-.13	.07	.14	.001	.07	$F_{(7,179)}= 3.218$***	.08

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$

4. Discussions

The present study was conducted in order to explore the unique effects of different attachment representations in their association to GPIU within a community sample of middle-school students that are in transition from adolescence to emerging adulthood. In line with previous studies [15-18] and according to our hypotheses, dimensions of insecure-anxious attachment were uniquely associated to GPIU. Specifically, the unique role of preoccupation with relationships - that is defined by desire for intimacy with others along with fear of abandonment [20, 21] - emerged for the GPIU total score, as well as for specific subscales concerning the use of the Internet for mood regulation and the deficient self-regulation in using the Internet. According to existing results [16], we advance that youths with high levels of this attachment representation in their history could choose the Internet medium as a coping strategy to regulate stress and anxiety that derives from face-to-face social interactions. Moreover, the need for approval - that refers to an exacerbated need for acceptance and confirmation from others [20, 21] - was the attachment subscale to play a unique role in the association to the preference for online social interaction: once again, we could hypothesize that youths high in this attachment dimension perceive online social interaction as easier to carry on - and therefore with a higher probability of positive feedback - than offline relationships.

Importantly, we also found that insecure-avoidant attachment plays a unique role in the association to GPIU. Specifically, the attachment dimension connected with considering relationships as secondary - that is similar to the dismissing style proposed by Bartholomew [22], in which the self-sufficient Self denies the need of others - was positively associated both to the total score of GPIU, as well as to its specific dimensions related to the preference for online social interaction and the deficient self-regulation in using the Internet. These results can be read in line with a previous evidence emerged within the field of research on CU traits [11], that suggested the interpersonal distance provided by the Internet medium as a suitable situation in order to manipulate and attack others without wondering about their sufferance; similarly, we can hypothesize that a detached and devaluing representation of relationships with others can favor youths in choosing a type of social approach that is more distancing than the face-to-face one, even if this can lead to lose control about time spent online and being preoccupied with the thought of going online. Nevertheless, the cross sectional nature of our data prevents us from reaching causal conclusion; in fact, we could also hypothesize that a prolonged experience of high levels of GPIU can impact on attachment representations in a critical period for the development of identity such as that represented by the end of adolescence and the transition to adulthood.

These results are affected by some limits. First, we have already mentioned the cross-sectional nature of the study, and only future longitudinal research can confirm and better explain our results. Moreover, all study variables were investigated using self-report questionnaires, and a future replication should include a multi informant approach to prevent the risks related to common shared variance. Further, the sample was quite homogeneous considering participants' cultural background, thus generalization of our results to other contexts has to be tested. Nevertheless, this study enlarged the field of research on GPIU by demonstrating that both insecure-anxious and insecure-avoidant attachment representation can play a role as unique correlates of this phenomenon. These results also suggest broadening the gaze on the role that attachment – defined as a dimensional rather than a categorical construct - can play in the development of the identity of young adults, intercepting the risks and the benefits of the Internet medium in multiple ways.

5. Acknowledgements

6. References

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