Defence mechanisms and attachment styles in paranoid ideation evaluated in a sample of non-clinical young adults

I meccanismi di difesa e gli stili di attaccamento nell'ideazione paranoide valutati in un campione non clinico di giovani adulti

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SUMMARY. Objective. The aim of this investigation was to evaluate defence mechanisms and attachment styles in paranoid ideation through a cross-sectional design with sequential recruitment of subjects. **Methods.** Five hundred and fifty non-clinical subjects were recruited from university students. A psychometric protocol comprising paranoid ideation scale of Symptoms Check List (SCL-90-R-Par) to identify paranoid ideation, Defence Style Questionnaire (DSQ-40) to evaluate defence mechanisms, and Relationship Questionnaire (RQ) to measure attachment styles was then administered. **Results.** We found a significant predictive value of immature defence mechanisms (β=0.48; p<0.0001) and preoccupied attachment style (β=0.25; p<0.0001) in the paranoid ideation. Moreover, subjects reporting a preoccupied or fearful attachment style showed higher levels of paranoia. **Conclusions**. This study revealed that paranoid ideation is mainly characterised by immature defence mechanisms. A clear insecure attachment style associated with paranoia was also found. The assessment of paranoid ideation should therefore consider the role of attachment style and defence mechanisms as an integral part during the diagnostic and therapeutic processes.

KEY WORDS: paranoia, attachment styles, defence mechanisms.

RIASSUNTO. Obiettivo. L'obiettivo di questa ricerca è stato quello di valutare i meccanismi di difesa e gli stili di attaccamento nell'ideazione paranoide, mediante un disegno di studio cross-sectional con un reclutamento sequenziale di soggetti. **Metodi.** Cinquecentocinquanta soggetti non-clinici sono stati reclutati tra gli studenti universitari, a cui è stato somministrato un protocollo psicometrico composto da: Symptoms Check List (SCL-90-R-Par), per identificare l'ideazione paranoide; Defence Style Questionnaire (DSQ-40), per valutare i meccanismi di difesa; Relationship Questionnaire (RQ), per misurare gli stili di attaccamento. **Risultati.** È stato trovato che i meccanismi di difesa immaturi e lo stile di attaccamento preoccupato hanno un significativo ruolo predittivo sui più alti livelli di ideazione paranoide, rispettivamente β=0.48; p<0.0001 e β=0.25; p<0.0001. Inoltre, i soggetti che si sono identificati in uno stile di attaccamento preoccupato o timoroso hanno mostrato più alti livelli di paranoia. **Conclusioni.** Questo studio ha rivelato che l'ideazione paranoide è caratterizzata principalmente da meccanismi di difesa immaturi. Inoltre, è stato trovato che uno stile di attaccamento insicuro è associato alla paranoia. Quindi nella clinica della paranoia è opportuno considerare il ruolo dello stile di attaccamento e dei meccanismi di difesa come parte integrante del processo diagnostico e terapeutico.

PAROLE CHIAVE: paranoia, stili di attaccamento, meccanismi di difesa.

INTRODUCTION

A paranoid person harbours suspicion and doubts towards external reality and other people and «believes that harm is occurring, or is going to occur, to him or her, and that the persecutor has the intention to cause harm»[1]. In this regard, the interpersonal theories of Trower and Chadwick and then of Bentall conceive paranoia as stable or dynamic pattern, according two clinical typologies: «*bad me* tend to blame themselves and see themselves as bad» and «*poor me* to see the other as bad and to see themselves as victims»[2-4].

In the psychological sciences the phenomenology of paranoia crosses both personality and psychotic disorders, albeit in different ways and to a varying degree. Aspects of para-

noid thought are in fact found in paranoid personality disorder and in many forms of schizophrenia, such as paranoid schizophrenia, which is mainly characterised by persecutory delusions[5].

The psychopathology and aetiology of paranoia are described by psychodynamic and cognitive theories, but genetic and epigenetic researchers have also investigated paranoia in the vast spectrum of psychotic disorders[6-8]. Another recent investigation studied the interesting relationship between paranoia and anger in a forensic sample composed by subjects that had violent convictions and mental diseases[9].

Even though paranoid functioning is a characteristic found in both personality and psychotic disorders, some psychological factors involved in the paranoia in non-clinical samples have not been fully explored. Among the psychological aspects characterising psychic functioning, defence mechanisms and attachment style play a central role.

Each person uses different defence mechanisms to confront stressful situations or states of anxiety, and a vast part of the literature distinguishes between mature, neurotic and immature defence mechanisms[10]. For example, immature defences such as projection, splitting and denial are often used in paranoid functioning, in which an internal threat together with negative aspects of self are projected toward external reality, with other people perceived as threatening[11]. This phenomenon is particularly evident in psychotic disorders involving persecutory delusions[12]. In this regard, a study has found a relationship between avoidant coping and denial in non-clinical paranoia, highlighting the role of maladaptive coping strategies as predictors of paranoid thought[13]. Therefore, it is likely that also peculiar aspects of defensive system are involved in the manifestation of paranoia.

Another fundamental issue and a current subject of debate concerns the role of the attachment styles involved in paranoia[14-16]. The principal attachment styles described are secure and insecure, on the basis of positive or negative child-caregiver relationships[17-19]. Subsequent studies[20,21] distinguished particular types of attachment based on anxious and avoidant dimensions. In particular, Bartholomew and Horowitz[21] observed and defined four types: secure, preoccupied, fearful and dismissing, on the basis of positive or negative models of self and other[22]. In this vein, a recent case-control study focusing on people with schizophrenia found that insecure attachment was predictive of paranoia, with negative self-esteem acting as a mediator[23,24].

Other important studies have investigated the diffusion of paranoid thoughts in a non-clinical population, demonstrating a hierarchy of paranoid ideation along a continuum from normal to pathological[25]. A study of subjects with no psychiatric diseases found that depressed mood, social anxiety and avoidance, evaluation apprehension, self-monitoring and lower self-esteem were associated with paranoia[26]. Another recent investigation demonstrated that paranoia plays a mediation role among boredom proneness and conspiracist ideation, through an internet-based study on a sample of general public[8].

In any case, particular aspects related to paranoia, including doubts about trust or mistrust of friends and colleagues, seem widespread in the general population[1,6,27], suggesting that scientific interest should encompass several psychological aspects associated with paranoia in non-clinical subjects.

Given this background of relational patterns and defensive styles, the current study hypothesis is to understand the possible impact of immature defence mechanisms and insecure attachment style on paranoia in a non-clinical sample.

The aim of this study was therefore to evaluate defence mechanisms and attachment styles in paranoid ideation through a psychometric investigation.

METHODS

Sample recruitment

Five hundred and fifty university students (aged 18-30) were sequentially and randomly recruited among different courses and disciplines of our university.

A psychometric protocol involving a socio-demographic questionnaire and self-report tests was then administered. The study protocol was approved by our ethics committee for investigations involving human subjects, in line with the Declaration of Helsinki, and all subjects signed an informed consent form on the handling of personal data.

MEASURES

Defence mechanisms

Defence mechanisms were assessed with the short form of the Defence Style Questionnaire (DSQ-40) (Italian version). It includes 40 items with responses on a 9-point Likert scale. DSQ-40 investigates 20 defence mechanisms; these were regrouped into mature, neurotic and immature to improve psychometric properties[28,29]. Mature defences include sublimation, humour, anticipation and suppression; neurotic defences include undoing, pseudo-altruism, idealisation and reaction formation; immature defence mechanisms include projection, acting out, isolation, devaluation, autistic fantasy, denial, passive aggressiveness, displacement, dissociation, splitting, rationalisation and somatisation.

Attachment styles

Attachment styles were assessed by the Italian version of the Relationship Questionnaire (RQ)[30]. This is a well validated and widely used tool with just four items, based on the four models of attachment styles[21]. This psychometric test was used in several studies concerning the assessment of attachment style[31,32]. Each item corresponds to a specific attachment style: secure, preoccupied, fearful and dismissing. The subject is invited to respond according to a dimensional and categorical perspective. First, subjects read a description of the four items and indicate which best describes them. Next, they rate each description on a 7-point Likert scale. This test also describes the positive or negative models of self and other through the four types of attachment.

Paranoia

Paranoia, or more specifically paranoid ideation, was assessed by the Italian version of Symptom Check List-90-R (SCL-90-R), one of the most widely used self-report psychometric tests in the area of psychopathological symptom assessment[33,34]. It has 90 items, with a 4-point Likert scale for the evaluation of nine psychological symptoms (somatisation, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety,

paranoid ideation and psychoticism) and three global indexes (global severity index, positive symptom distress index, and positive symptom total). Generally, scores higher than 1 are considered to be of clinical interest. To verify our hypothesis, we used the checklist's paranoid ideation (Par) scale.

Statistical analysis

Continuous variables were represented statistically as means and standard deviations (SD). Dichotomous variables were represented statistically as absolute and percentage frequencies. The difference between dichotomous variables was tested using Chi-Square test or Fisher's exact test when appropriate. Each alpha error lower than 5% indicated statistical significance and all tests included the two-tail test using SPSS (IBM) statistical software, version 20.

A one-way ANOVA, with Bonferroni correction for the multiple comparisons, to study the comparison between the level of paranoia and the different attachment styles, indicated by the participants in the RQ, was implemented. Finally, a hierarchical multiple regression was used to verify the possible impact of the above variables on paranoia levels. Demographic variables was entered in the first step, defence mechanisms at the second, and attachment styles at the third. The "enter" method was used within each step of the hierarchical regression.

RESULTS

As shown in Table 1, in our sample women were more prevalent than men. Gender did not differ for age (women, 21.95±3.36; men, 21.99±3.54; t_{548}=-0.121, p=0.904) and was not associated with relationship status. The mean scores for paranoid ideation, defence mechanisms and attachment styles are also included in Table 1.

Table 1. Socio-demographic and clinical characteristics of 550 non-clinical young adults.

Age	21.95±3.41
Gender	
Women	389 (70.7)
Men	161 (29.3)
Partnership status	
In a relationship	296 (53.8)
Single	254 (46.2)
Paranoia (SCL-90-Par)	
Paranoid ideation	0.91±0.66
Defence mechanisms (DSQ-40)	
Mature	4.87±1.12
Neurotic	4.28±1.23
Immature	3.90±1.01
Attachment styles (RQ)	
Secure	3.76±1.80
Preoccupied	3.04±1.87
Fearful	3.30±1.99
Dismissing	3.56±2.1

Data are reported as frequency (and percentage) and mean ± SD. SCL-90-R-Par= Symptom Check List-90-R scale; DSQ-40= Defence Style Questionnaire; RQ= Relationship Questionnaire.

Some interesting findings emerged from the categorical measurement of attachment style assessed by RQ. As 62 subjects omitted to indicate the self-description they considered closest, this analysis included 488 participants. Of these, 141/488 (28.9%) indicated a secure attachment style, 68/488 (13.9%) a fearful, 123/488 (25.2%) a preoccupied, and 156/488 (32%) a dismissing attachment style. Among these subgroups, significant differences on the levels of paranoid ideation between subjects reporting a secure attachment and subjects with fearful, preoccupied attachment ($p<0.05$) were found. Specifically, higher paranoia scores were found in subjects with fearful and preoccupied attachment styles (Figure 1).

Moreover, multiple hierarchical regression analysis revealed that demographic variables contribute to explain only the 1% of the paranoia variance at step 1.

On the contrary, at the second step, defence mechanisms are significant predictors of paranoia, explaining alone the 24% of paranoia variance. In particular, immature defences (β=.48; $p<0.0001$) (Figure 2a) has a higher predictive value than neurotic and mature (β=.09; $p<0.05$ and β=-.11; $p<0.05$, respectively).

At the third step, attachment styles together defence mechanisms and demographic variable explain the 35% of paranoia variance. In this step preoccupied and fearful attachment styles have higher predictive values (β=.25; $p<0.0001$ and β=.14; $p<0.0001$, respectively) (Figure 2b), than secure attachment (β=.-.085; $p<0.05$). Finally, age showed a negative, low but significant protective value for the paranoia (Table 2).

DISCUSSION

This study investigated the link among paranoia, defences and attachment styles and it found a clear evidence of a strong involvement of immature defence mechanisms and insecure attachment in paranoid ideation in non-clinical subjects. These aspects, which reflect the consolidated theories concerning the widespread diffusion of paranoid thoughts in the general population[6], open up an interesting issue regard-

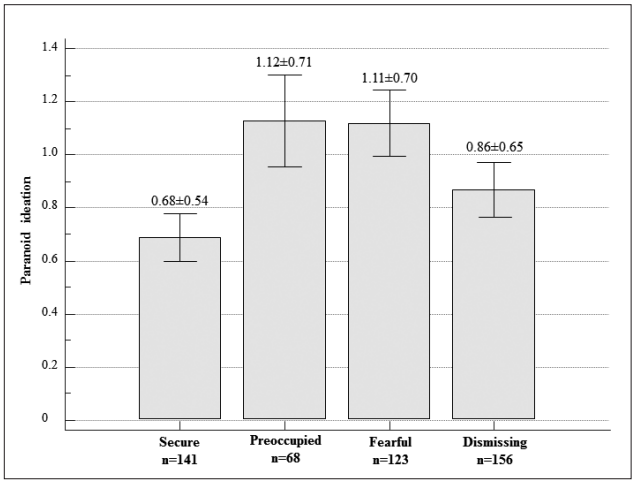

Figure 1. Paranoia levels in the different distributions of attachment styles according to the categorical evaluation of RQ.

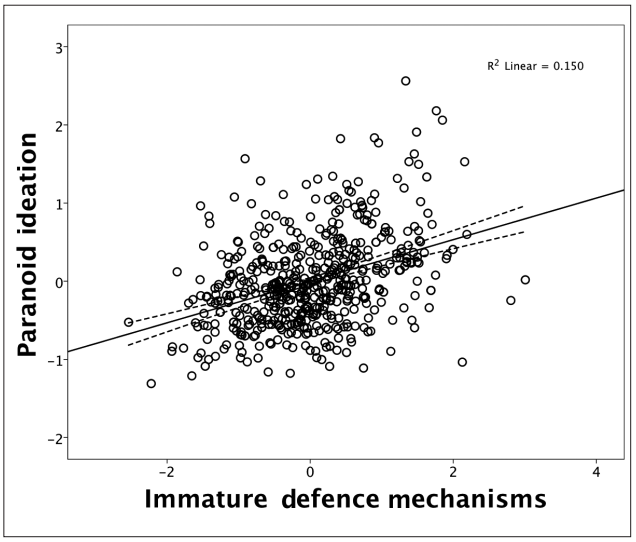

Figure 2a. Partial regression plot depicts the specific, significant relation ($p < 0.0001$, $\beta = 0.479$) between the "Immature Defence Mechanisms" (measured with DSQ-40) independent predictor and "Paranoid Ideation" (measured with SCL-90-R) dependent variable emerged by hierarchical regression model. DSQ-40, Defence Style Questionnaire; SCL-90-R, Symptom Check List-90-R.

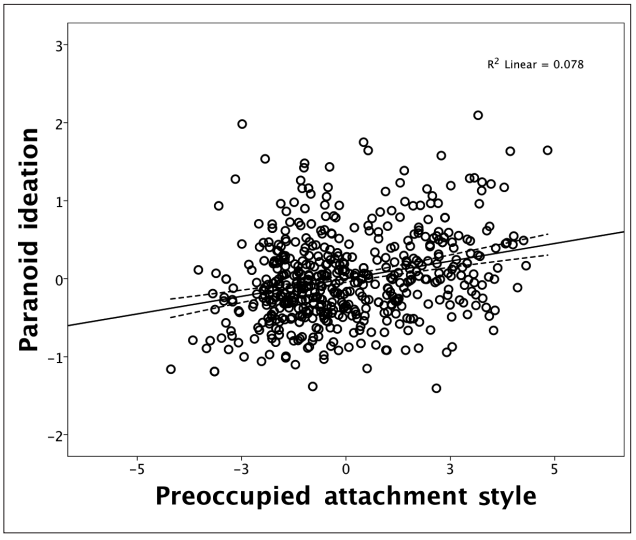

Figure 2b. Partial regression plot depicts the specific, significant relation ($p < 0.0001$, $\beta = 0.250$) between the "Preoccupied Attachment Style" (measured with RQ) independent predictor and "Paranoid Ideation" (measured with SCL-90-R) dependent variable emerged by hierarchical regression model. RQ, Relationship Questionnaire; SCL-90-R, Symptom Check List-90-R.

ing relational patterns and defensive styles in paranoia. On the other hand, the psychometric application of specific psychodynamic constructs, such as defence mechanisms and attachment styles, reinforces the idea that it is fundamental to consider the intra-psychic factors in paranoia that undergird relationships with others[23,35].

Table 2. Summary of hierarchical regression analysis for variables predicting paranoia.

Total sample (n. 550)					
	B	SE	β	R^2	F Change
Step 1				.012	3.22*
Demographics					
Gender	.053	.063	.036		
Age	-.020	.008	-.102*		
Step 2				.247	35.57**
Demographics					
Gender	-.022	.057	-.015		
Age	-.024	.007	-.121		
Defence mechanisms					
Mature	-.066	.026	-.110*		
Neurotic	.050	.025	.092*		
Immature	.317	.031	.479**		
Step 3				.349	32.10**
Demographics					
Gender	-.005	.053	-.003		
Age	-.023	.007	-.116*		
Defence mechanisms					
Mature	-.065	.025	-.109*		
Neurotic	.033	.024	.061		
Immature	.249	.030	.376**		
Attachment style					
Secure	-.031	.013	-.085*		
Preoccupied	.089	.014	.250**		
Fearful	.047	.013	.140*		
Dismissing	.011	.012	.035		

Note. B= Unstandardized Regression Factor; SE B= Standard Error; β= Standardized Regression Factor; R^2= Determination Factor; F Change= F-test result is significant when the variables added in that step significantly improved the prediction.
*p<0.05; **p<0.0001.

The current study results demonstrated a considerable association between immature defence mechanisms and paranoid ideation, highlighting the evidence that paranoia is mainly related to primitive defences manifesting in relationships with other people, including in therapeutic relationships[36]. In this regard, in most cases, defence mechanisms such as coping strategies[37] are the subject's adaptive response to a stressful internal or external demand causing anxiety or fear. It is likely that immature defences protect, in a dysfunctional way, the individual against an internal state

of fear that he or she finds threatening[38-40]. In fact, the psychometric protocol regroups, among immature defences the projection, splitting, denial and other primitive responses against anxiety, that could be considered psychological markers of a unhealthy functioning of personality[41,42].

In these cases, it is possible that there is a hyper-activation of immature defence mechanisms in which negative aspects of self, characterizing paranoia[7], are projected to other people, such as in a maladaptive response. In this regard, denial and avoidant coping representing maladaptive strategies were already considered predictors of subclinical paranoia, after an investigation on another large sample of university students[13].

Together to the considerable impact of immature defences, the assessment of attachment styles revealed an interesting significant association between fearful and preoccupied attachment styles and paranoid ideation. In particular, preoccupied attachment style could be considered the second predictor of paranoid ideation in the regression model. Also another recent study demonstrated a link between paranoia and preoccupied attachment style, although in a small group of psychiatric patients[43].

On the other hand, some evidences in literature have reported that fearful attachment characterizes psychotic symptoms[15], also with the mediation of childhood traumas[44].

Moreover the categorical analysis of RQ revealed that subjects reporting a secure attachment significantly differed from the other attachment styles in the level of paranoid ideation, with lower scores on SCL-90-R-Par. In particular, individuals that have indicated preoccupied and fearful attachment styles were once again of clinical interest, due to paranoia scores higher than 1.

More in general, the involvement of preoccupied and fearful attachment styles in paranoia, highlights that paranoid ideation is associated with anxious and avoidant dimensions, aspects specifying both preoccupied and fearful attachment styles[14,45]. In this regard, another recent study investigated the relationship between attachment style and psychotic symptoms in a large psychiatric sample, demonstrating a central role of avoidance and anxiety in the psychotic symptomatology, as paranoia and hallucinations[46].

Moreover, preoccupied and fearful attachment styles were both associated with a negative model of self, which seems to be in line with the negative self-concept and lower self-esteem that characterize paranoia[7].

On the whole, this investigation revealed that immature defence mechanisms and preoccupied attachment style both had high predictive power for paranoia levels. Neurotic defences and fearful insecure attachment were also predictive, albeit to a lesser extent. In contrast, secure attachment style and mature defences partially protected against paranoia, demonstrating that healthy personality aspects can prevent the tendency towards paranoid ideation.

On the other hand, this study has some limitations including the characteristics of the sample, which comprised young students. This could influence the applicability of the results to a general population. In addition, the lack of any careful psycho-diagnostic examination and the cross sectional nature of this study could be other additional limitations.

Finally, another interesting finding concerns the inverse and small correlation between paranoia levels and increasing age, which therefore seems to protect against a dysfunctional paranoid attitude. This aspect is an important issue above all in our sample of university students and raises questions about the adjustment strategies of students at the beginning of university life.

CONCLUSIONS

Paranoid ideation is a very well-known attitude of thought that is widespread in the general population, even in individuals without evident psychiatric symptoms. However, particular and partially dysfunctional psychological constructs such as an insecure attachment style and immature defence mechanisms were associated with higher paranoia levels, highlighting, for the first time together, the impact of attachment style and defence mechanisms in the paranoia. Any diagnostic and therapeutic process focusing on paranoid thought should therefore consider the relational patterns and the defensive styles involved in paranoia, especially in young adults at the beginning of university life. Finally, this information on the relationship between paranoia, defences and attachment style could have important clinical implications in the prevention of psychological distress.

Conflict of interest: the authors declare no conflict of interest.

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