

Characterization and Predictors of Paranoid Ideation in Youths

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Abstract—Paranoid ideation is a common thought process that constitutes a defense against perceived social threats. The current study aimed at the characterization of paranoid ideation in youths and to explore the possible predictors involved in the development of paranoid ideations. Paranoid ideation, shame, submission, early childhood memories and current depressive, anxious and stress symptomatology were assessed in a sample of 1516 Portuguese youths. Higher frequencies of paranoid ideation were observed, particularly in females and youths from lower socioeconomic status. The main predictors identified relates to submissive behaviors and adverse childhood experiences, and especially to shame feelings. The current study emphasizes that these predictors are similar to findings in adults and clinical populations, and future implications to research and clinical practice aiming at paranoid ideations are discussed, as well as the pertinence of the study of mediating factors that allow a wider understanding of this thought process in younger populations and the prevention of psychopathology in adulthood.

Keywords—Adolescence, early memories, paranoid ideation, parenting styles, shame, submissiveness.

I. INTRODUCTION

THE self-other interactions assume a fundamental role in the development of personal identity, the intra and interpersonal schemas and emotional regulation (e.g. [1]), in which adolescence is the developmental phase that this construction acquires increased importance [2], [3]. The teenage years encompass significant physical, social and psychological changes [4], with increased concerns about acceptance and approval by the peer group [5]. As such, it consists of a vulnerable phase to the onset of thought processes like paranoia [1], [4], [6]-[9]. According to [10], paranoia is a psychological process in which individuals regard themselves as the target of attention, and hostile or malevolent intents from others, in which one believes to be judged poorly by others [11]-[16]. Those authors [10] proposed the existence of two different forms of paranoia: “poor me” and “bad me” paranoia. In the first case, individuals present high self-esteem and believe to be the target of persecution and/or rejection from others, while

regarding themselves as the innocent victims and others as the malevolent and guilty ones. The “bad me” paranoia is usually present when individuals present low self-esteem, and regards oneself as guilty and deserving of the rejection and persecution from others [10].

Embedded in the evolutionary model, social rank theory emphasizes the importance of paranoid ideations in youths and adults as being a useful social defense mechanisms often referred as a “better safe than sorry” approach to social threats [17]-[22] in order to protect the self from the attack or harm from others [18], [16], [23]-[26]. However, individuals with paranoid ideation may present increased mistrust and suspicion towards others, which may compromise interpersonal relationships [1], [27]. Feeling inferior to others or regarding the self as a target maintains the beliefs that one is more vulnerable to threat, persecution, malevolence, rejection or exclusion by others, and individuals can become more prone or present frequent paranoid ideations, on a more dysfunctional level [10], [18], [28]-[30].

The acknowledgement of the individual’s position in the social hierarchy starts from an early age and is greatly influenced by the interactions and relationships established with significant others during childhood, particularly on what concerns attachment to the parental figures (e.g. [1], [22]). If safe attachments are formed, youths can develop more self-confidence, a more positive self-concept and create safer and cooperative alliances with their peer groups [31], [32]. Instead, insecure attachment is involved in more negative self-concept, increased worry about the social hierarchy and the rank the individual occupies in it, which may result in increasing vigilance to the malevolent and harmful intent of others, sensitivity to rejection and humiliation and/or more submissive behaviors when individuals compare themselves as inferior in the social rank or in socially threatening situations [25], [31], [32]. This latter scenario seems to be influenced by adverse interpersonal experiences in childhood, such as negligence and physical abuse [33], [34], criticism, humiliation, shame, and submission [28], [35]-[37], which are responsible for the early memories of being rejected, criticized and unwanted, instead of loved, accepted and valued as a human being [22], [33], [38], [39]. From the evolutionary standpoint, these adverse situations can compromise the individual’s identity, and be responsible for the development of a negative view of the self (submissive, inferior, vulnerable, incapable, unattractive) [26], of others and their intentions, from which individuals must defend themselves [10], [16], [23], [26], [40], [41].

An increasing body of research has focused on paranoid

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ideation in adolescence (e.g. [4], [9], [12], [36], [42] showing that this is a common and frequent phenomena among youths when compared to adults, without being necessarily a sign of psychopathology [4], [6]-[8], [12], [13], [24], [25], [36], [42]-[47].

The prevalence of paranoid ideation in adolescence is between 10% and 25%, according to several studies in Europe [4], [7], [8], [47]-[53], and Asia, particularly in Japan [54]. In Portugal, a study carried out by [36] in a sample of undergraduate students has shown high rates of paranoid ideation (33.3%). Similar to this study, [42] has found an average score of 43.4 on a 0-100 scale of the frequency of paranoia in the general population of adults. These results show the continuity of paranoid ideation not only across the normal-pathological continuum [12], [13], [36], [43], [46], [47], [55], [56], but also in different developmental stages across the lifespan [47], [57].

Freeman et al. [25] presented a hierarchical model of paranoid ideation across the normal-pathological continuum. More basic cognitions related to social evaluation concerns appear at the base of this hierarchy, and thoughts with increased clinical relevance, the persecutory beliefs of delusional beliefs, for instance, appear on the top [25]. This model allows to explain how paranoid ideation can be a normative and adaptive process to individuals, and to what extent it can become dysfunctional and an indicator of psychopathology [25].

A. Characteristics of Paranoid Ideation – Sociodemographic and Clinical Variables

The phenotypic expression of paranoid ideation can vary according to socio-demographic variables as gender, age (e.g. [12], [36], [53]) and socioeconomic status (e.g. [36], [58], [59]). Concerning gender, similar to adults [4], [12], [36], studies point out that adolescent females report psychotic symptoms more frequently than males (e.g. Ideas of reference), although the reverse pattern has also been observed [51]. As for socioeconomic status (SES), some studies point out that the frequency of paranoid thoughts is associated with lower SES, where this factor was also found as a significant predictor of the development of psychosis, particularly schizophrenia (e.g. [58], [60], [61]).

Studies also suggest that paranoid ideation tends to decrease with age (e.g. [4], [62], [63]), in which youths report more paranoid experiences than older subjects from the general population [64]. According to [47] and [65], in individuals with psychosis, there is also a decrease in positive symptomatology as age advances (e.g. persecutory ideas). Considering that adolescence is a critical phase in terms of brain maturation (e.g. [66]), it is possible that factors related to brain maturation underlie the influence of age, whether on the manifestation of delusional thoughts in clinical samples, or the proneness to this type of ideation in the general population [47]. This is also a factor that is related to the presence increased vulnerability to psychopathology [7], [67]. There is increasing evidence that the presence of social disadjustment, anxiety, stress and depression [4], [6], [9], [24], [46], [53],

[54], [67], [68], can also be related to paranoid ideation in this age group and may contribute to psychotic-like experiences in adult life [53], [64], [68]-[70]. For instance, [4] observed that the presence of paranoid ideation was related to depressive symptoms and disadjusted social functioning, and M [67] observed that higher levels of paranoid ideation were associated with increased depression, anxiety, anger and frustration in an undergraduate sample. These results suggest that adolescents who already report frequent paranoid experiences may develop affective or behavioral disorders similar to the clinical population, even if in a subclinical degree [7], [36].

B. Predictors of Paranoid Ideation on Adolescence

Some factors have been found to contribute to increased vulnerability and prediction of paranoid ideation on adulthood, including adverse childhood experiences, shame, submission in clinical samples [3], [8], [16], [28], [34], [35], [41], [51] [71]-[73]. Evidence supports that early memories of submission and shaming that constitute traumatic events are predictive of significantly higher levels of paranoid ideation in general population [16], [29], [30] [35], [74]. Severe criticism and humiliation from the parental figures can increase feelings of shame and inferiority in the individuals that, in similar situations, individuals may adopt more subordinate attitudes and become less socially attractive [36], [41]. Exposure to experiences of neglect and abuse also predicts increased levels of mistrust and compromise in interpersonal relationships and is associated to shame and increased risk of psychopathology in adult life (e.g. [2], [29], [35]). There is a lack of studies of this nature in Portugal, and with the current study, we aim at a better understanding of the development, manifestation and maintenance of paranoid ideation in adolescence, and how it can constitute an increased risk for the onset of psychopathology or risk behavior. Thus, the goals of the current study are (1) to characterize paranoid ideation in a sample of Portuguese youths, according to several sociodemographic and clinical variables, and (2) to explore the factors that predict paranoid ideation during adolescence.

II. METHODS

A. Participants and Procedures

Data was collected in several public high schools in São Miguel Island, Azores. In this study, students were randomly selected and the total sample encompassed 50% of total of students in each grade, warranting sample representativeness. The anonymity and data confidentiality was warranted at all times, and the information and goals of the study was provided to each participants and their legal representatives, who signed an informed consent form prior to questionnaire administration.

B. Statistical Analysis

Statistical analyses were carried out with SPSS version 20.0 (IBM Corp., 2011), and consisted of descriptive and correlational analysis to characterize paranoid ideation and their relationship with other variables, and independent sample

student t-tests and ANOVAs to address the differences in paranoid ideation across gender and age groups. Multiple regression analysis was calculated to study the predictors of paranoid ideation, with a stepwise variable selection in order to obtain a significant predictive model of the several predictor variables over the criterion variable. Test assumptions were verified through normality tests and residual independence through Durbin-Watson test statistic [75]. To all analyses, reference alpha levels were 0.05.

C. Measures

General Paranoia Scale (GPS; [13], [42]). This self-report scale was specifically devised to measure the paranoia in general population. The scale comprises a set of 20 items, with a Likert-type format answered in a range of response varying from 1 (never) to 5 (always). Thus, the scores can range from 20 to 100, where higher scores indicate the presence of more paranoid ideation. In the original study by [13] the Cronbach's alpha was 0.84. In the Portuguese validation, the total scale also showed good internal consistency, with a Cronbach's alpha of .90. In a study by [42], three different dimensions were found: Mistrust feelings, Persecutory Ideas and Self-deprecation. Those factors presented good internal consistency, with Cronbach's alphas of 0.79, 0.84 and 0.72, respectively. In the current study, the total scale presented Cronbach's alpha of 0.90, 0.79 to the Mistrust Feelings factor, 0.83 for Persecutory Ideas and 0.73 for the Self-deprecation factor.

Other as Shamer Scale (OAS; [76], [77]). This scale was designed to measure the external shame and comprises 18 items with a Likert-format frequency scale, ranging from 0 (never) to 4 (always). Scores can vary between 0 and 72, where higher values indicate higher levels of shame about what others think of me. The Portuguese version of the scale has high internal consistency with a Cronbach's alpha of 0.92 (equal to the value found in the study of the original scale version). In the present study, the Cronbach's alpha for the total scale was 0.96, showing good internal consistency of the scale.

Early Memories of Warmth and Safeness Scale – adolescent version (EMWSS-A; [78], [79]). The EMWSS-A is a self-report instrument that assesses the early memories of warmth, security and affection in childhood. It is a one-dimensional scale and the items are rated on a scale of 4 points, where the answers range from 0 = “No, never” and 4 = “Yes, most of the time”. The Portuguese version of the EMWSS in adolescents presents a one-dimensional structure, explaining 61.7% of the variance [79], and a high internal consistency with a Cronbach's alpha value of 0.97, the same as obtained in the original English version for undergraduate students [78]. In the current study, internal consistency was equally good, with Cronbach's alpha of 0.94.

Adolescent Submissive Behaviour Scale (ASBS; [80]). This scale was adapted from the adult version and is composed by 12 items, rated on Likert-like frequency scale ranging from 1 (never) to 5 (always) and measures the frequency of submissive behaviors manifested by youths in their everyday

situation. Results range between 0 and 60, where higher values indicate more submissive behavior. The scale has a Cronbach's alpha of 0.73 both on the original and the current study.

Childhood Experiences of Care and Abuse Questionnaire (CECA-Q; [81]). This is a questionnaire devised to collect information on parental rearing styles during childhood, and to identify the parental figures that were most significant during development (before 17 years old). This questionnaire is composed of screening questions for sexual and physical abuse, and Neglect and Antipathy scales scored separately for each parent (e.g. Mother and father). The Antipathy and Neglect scales comprise 8 items each, related to antipathy from the parent (e.g. He/she was critical towards me) and neglect from parents (e.g. He/she was interested in my problems). All items are presented twice, to be rated for each parental figure in a 5 point Likert-like scale (1 = Not at all to 5 = totally). In [81], the CECA-Q was presented as a good screening tool for assessing early adverse relationships and to the study of the role of these adverse experiences in the development of psychopathology. Internal consistency was of 0.81 to Antipathy and 0.80 to Neglect subscale. In the current study, internal consistencies ranged between .51 (Mother's antipathy) and .61 (Neglect from father).

III. RESULTS

A. Sample Characteristics

Our study is comprised of a sample of 1516 adolescents, with ages ranging from 14 to 18 years old ($M=16.5$, $SD=1.03$), 712 males (47%) and 804 females (53%). Most participants were attending to local high schools ($n=1331$, 87.8%). The SES was calculated from parent's job class. The Lower SES was the most representative category of the sample with 45.6% ($n=691$), followed by “Medium” SES with 42.5% ($n=645$) and, finally the Higher SES with 11.9% ($n=180$).

B. Characterization and Frequency of Paranoid Ideation in Adolescents

The average score of the GPS in our sample was of 48.87 ($SD=12.53$). Regarding paranoid ideation's frequency in our sample, we observed that most of adolescents ($n=1219$; 80.4%) present values below GPS' mean score (20-59) and about 18% ($n=273$) present average scores or above (60-79). Only 1.6% ($n=24$) present the highest levels of paranoid ideation (80-100). We proceeded to more detailed analysis of the frequency of paranoid ideation by grouping items rated with “Sometimes”, “Often” and “Always”. Our results showed that adolescents present more paranoid ideations related to factor #1 Mistrust Thoughts [$M=2.71$, $SD=0.704$]. Follow by factor #2 Persecutory Ideas [$M=2.41$, $SD=0.715$] and finally factor #3 Self-deprecation [$M=1.99$, $SD=0.780$]. The frequencies of endorsement of Mistrust Thoughts, Persecutory Ideas and Self-deprecation are presented on Table I. Following the procedure above, it was calculated the percentages for each factor (Mistrust Thoughts, Persecutory Ideas and Self-deprecation).

TABLE I
FREQUENCIES OF PARANOID IDEATIONS ENDORSED BY ADOLESCENTS BY
FACTOR (N=1516)

Factors	Sometimes (%)	Often (%)	Always (%)	Total
Mistrust Thoughts	33%	17%	6.5%	56.5%
Persecutory Ideas	26.5%	11.7%	4.9%	43.1%
Self-Deprecation	18.5%	7.5%	2.3%	28.3%

C. Sociodemographic Factors and Paranoid Ideation: Differences in Age, Gender, Education and Socioeconomic Status

To study age differences in paranoid ideation, participants were grouped in two age groups: between 14 and 16 years old and between 17-19 years old. There were no statistically significant differences between age group regarding total scale [$t_{(1514)} = 0.157, p = 0.875$], Mistrust Thoughts factor [$t_{(1514)} = -1.402, p = 0.161$] and Persecutory Ideas [$t_{(1514)} = 0.534, p = 0.593$], except for Self-Deprecation factor, where a statistically significant difference was found [$t_{(1514)} = 2.186, p = .029$], with the younger group (14-16 years old) scoring higher scores on this factor ($M=2.03, SD=0.769$) when compared to the older group ($M=1.94, SD=0.789$).

Regarding gender, there was a statistically significant difference on the total score of the scale with females scoring significantly higher ($M=49.47, SD=12.204$) than males ($M=41.12, SD=12.19$) [$t_{(1514)} = -1.984, p = 0.047$] and with Persecutory Ideas Factor [$t_{(1514)} = -3.534, p = 0.000$], where females also scored significantly higher ($M=2.47, SD=0.706$) than males ($M=2.34, SD=0.720$). No statistically significant differences were found between genders regarding Mistrust Thoughts [$t_{(1514)} = -1.784, p = 0.075$] and Self-deprecation

[$t_{(1514)} = 1.718, p = 0.085$], although females also tended to present higher scores on these dimensions.

No statistically significant changes were found between years of education and the GPS factors nor total scores. Concerning socioeconomic status, no statistically significant differences were found regarding the total score of the GPS [$F = 1.944, p = 0.143$] and each factor: Mistrust Feelings [$F = 2.042, p = 0.130$], Persecutory Ideas [$F = 1.459, p = 0.233$] and Self-deprecation [$F = 1.441, p = 0.237$].

D. The Relationship between Early Memories, Shame, Submissive Behavior and Paranoid Ideation

As presented on Table II, paranoid ideation presented significant correlations with early memories from childhood, external shame and submissive behavior. Significant and moderate correlations were found between GPS and OAS in the expected sense: all factors of paranoia and the total score were positively associated with feelings of the external shame, with Persecutory Ideas presenting the strongest correlation with external shame ($r = 0.642, p = 0.000$). Regarding submissive behavior, correlations were significant ($p < 0.005$), but weak in all dimensions of paranoid ideation. Early memories of antipathy (criticism, dislike or hostility) and neglect from parental figures were also weakly correlated with the GPS factors and total scores, but correlations were positive for the Antipathy subscale and negative for the Neglect subscale. The only moderate correlation was found between Self-deprecation and antipathy ($r = 0.519, p = 0.000$). Regarding memories of warmth and safeness (EMWSS), all correlation with paranoid ideation were moderate and negative.

TABLE II
CORRELATIONS BETWEEN GPS AND VARIABLES OAS, EMWSS, SBS, AND CECA-Q

	GPS_Total	GPS_Mistrust thoughts	GPS_Persecutory Ideas	GPS_Self Deprecation
OAS-Total	0.624**	0.452**	0.642**	0.512**
EMWSS-Total	-0.463**	-0.338**	-0.406**	-0.505**
SBS-Total	0.388**	0.264**	0.394**	0.357**
CECA-Q Total	0.214**	0.144**	0.183**	0.263**
CECA-Q Antipathy (Total)	0.381**	0.254**	0.304**	0.519**
Antipathy (Father)	0.367**	0.253**	0.299**	0.471**
Antipathy (Mother)	0.331**	0.220**	0.246**	0.481**
CECA-Q Neglect (Total)	-0.210**	-0.136**	-0.172**	-0.282**
Neglect (Father)	-0.169**	-0.116**	-0.144**	-0.207**
Neglect (Mother)	-0.201**	-0.124**	-0.154**	-0.300**

** $p < 0.001$ (2-tailed)

In order to explore the predictive value of these variables in the explanation of paranoid ideation in youths, a multiple regression analysis was calculated. The predictors included the variables that were significantly correlated with the criterion variable (GPS): OAS, EMWSS, SBS e CECA-Q (Father antipathy and neglect from father and mother). Results show that the model is significant and explains 46.8% of the total variation of the total GPS scores [$F_{(4, 1504)} = 331.419; p = 0.000; R_{adjusted}^2 = 0.468$]. Standardized regression coefficients showed that the OAS ($\beta = 0.446; p = 0.000$), EMWSS ($\beta = -0.169; t_{(1504)} = -7.703; p = 0.000$), CECA-Antipathy from father ($\beta = 0.154; p = 0.000$) and SBS ($\beta = 0.144; p = 0.000$)

were significant predictors of paranoid ideation (GPS), where external shame was the strongest predictor.

The analysis was also calculated for each factor of the GPS. Thus, the model was also significant for Mistrust Feelings, in which 24% of the total variability of the factor was explained by that set of variables [$F_{(4, 1504)} = 118.517; p = 0.000; R_a^2 = 0.240$]. In this analysis, standardized regression coefficients showed that OAS was also the main significant predictor ($\beta = 0.330; p = 0.000$), followed by EMWSS ($\beta = -0.132; p = 0.000$), CECA-Antipathy from father ($\beta = 0.093; p = 0.000$) and SBS ($\beta = 0.086; p = 0.000$) as the main predictor of the Mistrust feelings factor.

In the Persecutory Ideas factor, the model explained 46% of the total variability of the factor [$F_{(5, 1503)} = 253.140$; $p = 0.000$; $R_{\text{adjusted}}^2 = 0.457$]. Standardized regression coefficients showed that OAS ($\beta = 0.514$; $t_{(1503)} = 22.439$; $p = 0.000$), SBS ($\beta = 0.154$; $t_{(1503)} = 7.423$; $p = 0.000$) EMWSS ($\beta = -0.110$; $t_{(1503)} = -4.912$; $p = 0.000$), CECA-Antipathy from father ($\beta = 0.121$; $t_{(1503)} = 4.817$; $p = 0.000$) were significant predictors. In this analysis, submissive behavior present increased predictive value while antipathy from both parents present a lower but significant predictive effect.

Lastly, the model explains 47.1% of the Self-deprecation factor [$F_{(6, 1502)} = 222.514$; $p = 0.000$; $R_a^2 = 0.471$] and standardized regression coefficients were significant for the OAS ($\beta = 0.243$; $t_{(1502)} = 10.729$; $p = 0.000$), EMWSS ($\beta = -0.211$; $t_{(1502)} = -9.232$; $p = 0.000$), CECA-Antipathy from father ($\beta = 0.180$; $t_{(1502)} = 7.279$; $p = 0.000$) e SBS ($\beta = 0.145$; $t_{(1502)} = 7.7026$; $p = 0.000$) and CECA-Maternal neglect ($\beta = -0.059$; $t_{(1502)} = -2.792$; $p = 0.000$). Once again, submissive behavior had a lower predictive value when the variable of antipathy from father was introduced. Maternal neglect had a lower predictive value when compared to other variables included in the regression equation, but also suggests that maternal negligence is a significant predictor of self-deprecation.

Overall, in all models, external shame presents the highest predictive value, indicating that increased feelings of shame can partially explain paranoid ideations in youths, which increases in the presence of memories of antipathy and criticisms from parents and submissive behaviors. Concerning memories of warmth and safeness, this variable seems to have a protective role in the development of paranoid ideation in youths.

IV. DISCUSSION

Paranoid ideation is a common thought process in youths, in which the main predictors are similar whether on clinical or non-clinical adult populations (e.g. [27], [29], [35], [53], [65], [82]). The results of this study are in accordance to the literature, in which paranoid ideation is associated with interpersonal threats, such as being judged poorly by others or experiencing hostile criticism, neglect of being deprived of nurturing interpersonal relationships from early age [11]-[14], [16], [23], [40].

The first goal has been to characterize the paranoid ideation in Portuguese youths, in terms of sociodemographical and clinical variables. The majority of youths (80.4%) did not present high levels of paranoid ideation, similar to [36] and [82] in general and clinical adult samples, respectively. The factors that presented higher endorsements were Mistrust feelings, referring to concerns about social evaluation and Persecutory Ideas, referring to concerns of being influenced and actively persecuted by others with malevolent intents. The first factor refers to the more adaptive concerns about social evaluation that acquire special relevance in adolescence, a developmental phase in which individuals seek acceptance by their peer group and their position in the social rank. Participants presented increased frequencies of thoughts

belonging in the Mistrust feelings (56.5%) and persecutory ideas (43.1%) factors. The Mistrust feelings factor is characterized by concerns about social evaluation, which are cognitions belonging to the base of the pyramid proposed by Freeman et al. [25] and are considered more adaptive. These results may also be regarded according to social rank theory [18], [31], [33], in which others can be regarded as competitors who are more dominant, and belong to a superior rank in the social hierarchy ("top dog" vs. "underdog"), and their behaviors are read as more threatening. To some extent, paranoid cognitions and mistrust seem to be a normal and frequent phenomena arising in adolescence [18], [33]. In the model proposed by [25], at the top of the pyramid are cognitions with a more clinical relevance, as persecutory ideas. Thus, the type of belief and the stronger the belief of youths about the influence of others in their thoughts and behaviors and that the individual is a target of persecution by others, there is an increased risk to the manifestation of paranoid beliefs of increased clinical significance [13], [25]. It is important to emphasize that nearly 17% of adolescents who participated in the current study have reported frequently experiencing persecutory ideation ("often" or "always"). Self-deprecation was the less endorsed factor, which may indicate that negative feelings about the self are not the single and fundamental explanation for paranoid ideation. According to the proposal of the "bad me" and "poor me" paranoia [10], it is possible that most paranoid thoughts in adolescents are more related to a "poor me" view of the self, where the self-concept remains intact with the view of the self as a victim of the persecution and malevolence of others, who are, as a consequence, regarded as inferior to the self. Overall, the paranoid ideation appears to be an adaptive defense in most adolescents, in accordance to the hierarchical model proposed by [24]. Regarding socioeconomically status, no differences were found regarding any of the factors of paranoid ideation. However, gender differences were found regarding persecutory ideas, where females would score higher than males on this variable. It is possible that this gender difference is due to women being generally more exposed to objectification, harassment and victimization of all sorts. It is noteworthy that in which this developmental phase, the physical changes can take place can lead adolescents to feelings of increased awareness, shame or body shame, to which females are a particularly vulnerable group (e.g. [83]). In fact, shame appearing as the main predictor of all factors of paranoid ideation seems to point out in this direction.

Contrarily to current research, no age differences were found, probably due to the age range of the participants in this study (14 to 18 years old) being narrower than other studies comparing adolescents with adults or middle-aged participants. The only exception was the age difference found in self-deprecation, in which older participants presented significantly higher scores than their younger counterparts. Further research should be carried out in order to clarify whether there can be other variables mediating this effect that may be unaccounted for in this study, for instance, difficulties in school, with family or peers, considering the importance of

peer relationships in this period [5], [84]. According to what was expected based on current literature, paranoid ideation was positively associated with shame, submission and negative parental rearing styles. These variables can have a significant influence on paranoid ideation and in the etiology and maintenance of psychopathology, as pointed out by several authors (e.g. [14], [34], [41], [53]). Shame experiences can shape not only individual's negative perceptions of how they appear on other people's mind, but also in how others can be seen as threatening, rejecting or hostile, and with malevolent intents. Thus, shame can also render youths more vigilant to social clues relating to threat, rejection, exclusion or persecutions of the self [16], [18], [23]-[26]. The associations with submissive behavior, another defensive mechanism against perceived social threats suggest that these behaviors may also contribute to paranoid ideation [21], [24], [26], [40]. Individuals typically present submissive behaviors to avoid conflict or harm from others who are perceived as stronger or occupying a superior position in the social hierarchy, against whom a confrontation would result in significant loss to the individual. Thus, submissive behaviors may reinforce the beliefs or ruminative thoughts about others being more powerful and dominant that generally underlies paranoid ideation [21]. In the specific case of memories of warmth and safeness, the negative associations found between these positive memories and self-deprecation are in line with evolutionary and attachment models that poses that early relationships with significant others have a fundamental role in the identity and individual's life history [1], [26], [32]. Early experiences characterized by insecurity, hostility and threat may be responsible for more negative self-concept in youths, who learn to regard and position themselves as more vulnerable and inferior to others [1], [22], [26], [36]. This possibly makes youths more prone to use more defensive strategies such as submission or paranoia in contexts where youths feel socially evaluated or threatened. Conversely, memories of warmth and safeness may be regarded as protective factors, as suggested by current findings from regression analyses, particularly for the self-deprecation factor.

The last goal (to explore the predictors of paranoid ideation in adolescence) yielded results that are consonant with the aforementioned theoretical models. The absence of memories of warmth and safeness, external shame, submission explained a significant amount of variance on paranoid ideation (45%) and specific factors. Those variables can have a significant impact on identity formation and interpersonal schemas of individuals. Criticism, rejection and exclusion may render future social experiences more threatening, where individuals are regarded as unattractive, inferior and lacking, where the perceptions of negative evaluation from others may elicit feelings of mistrust and attributions of malevolence and hostility to others. Thus, early experiences of antipathy and lack of warm and affective responses from parents can predict the emergence of paranoid ideation that help shape future social interactions of individuals [35], [27].

External shame appeared as the main predictor in all

analyses, suggesting that this is an important feature that is also found in paranoid individuals [16], [35], [76] and an important risk factor to the development of paranoid ideation. Despite shame being an innate emotion that helps individuals to adapt to their social contexts [22], [34], excessive shame (often resulting from previous shaming experiences) may result in negative representations of the self and beliefs of vulnerability and inferiority, increasing the probability of developing paranoid ideation [24], [76]. A similar result was found in the study by [36], where shame was found as a predictor of general paranoia in youths.

Current findings point out to antipathy behaviors from father being more related with the frequency of paranoid thoughts than parental negligence. The consequence of antipathy from parents (dislike, hostility or criticism) is often a heightened feeling of insecurity (Ainsworth, Blehar, Waters & Wall cited in [82]), which may lead adolescent to perceive others as less available, hostile and the self as undesirable and have self-depreciative thoughts. This vision of the self and others results in perceptions of social interactions as potentially threatening that can trigger defensive strategies. Parental support is an important aspect in the social support of adolescents [85], where acceptance and affection have been found as associated with positive outcomes on later life, such as better psychological adjustment and decreased loneliness [86], [87].

In sum, paranoid ideation is a frequent and common phenomenon in adolescence, with adaptive value, especially in the face of more adverse social experiences. Current findings corroborate the continuity of paranoid ideation between the normal and pathological experience [8], [12], [13], [36], [43], [46] [47], [55], as well as across different developmental phases [35], [47], [57].

The current study is not free from limitations. The cross-sectional design can limit the conclusions about the actual predictive value of the variables, and the influence of other variables that may not have been taken into account in the current study. Further research with longitudinal designs should be carried out in order to confirm the current findings. Implications for future research also include the predictive value of paranoid ideation in psychological problems and symptomatology in adolescents (e.g. depression, anxiety, stress, aggression), and to what extent paranoid ideation may mediate their expression in youths.

The study of paranoid ideation in adolescence opens the possibility of examining and understanding the possible risk or vulnerability markers prior to clinical expression of psychotic disorders, aimed at improving early detection strategies and aiding in the possible implementation of prevention programs to severe psychopathology.

V. CONCLUSION

Paranoid ideation in adolescence is a cognitive process that is frequently present in adolescents, and can be explained by early memories and feelings of shame that can shape the interpretation of social experiences, similarly to what was previously found in clinical and non-clinical adult populations.

These aspects gain increased importance in the understanding of the development and maintenance of paranoid ideation from early age, and for intervention whenever paranoid ideation reaches clinical significance in this age group.

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