Paranoia as a Continuum in the Population

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ABSTRACT— ***Paranoid beliefs, though key to the diagnosis of paranoid schizophrenia, are not exclusively seen in patients suffering from this psychopathology and exist in less severe forms across different populations. Evaluating these symptoms as a continuum may be more interesting for the understanding of paranoia rather than the dichotomous approach to this kind of ideation. The main goal of the current research is to assess how paranoid beliefs are present across different populations. Using the Portuguese versions of the General Paranoia Scale and the Paranoia checklist, we compared the endorsement of paranoid beliefs in 187 subjects (64 healthy controls from the general population, 32 relatives from schizophrenia patients, 30 patients in remission and 61 patients with acute schizophrenia symptoms). The results show that paranoia is present throughout the population, from non-clinical forms to more severe clinical samples, demonstrating a continuum of increased frequency and intensity until it reaches a delusional level. Environmental factors in the endorsement of such beliefs are also discussed.***

Keywords— paranoia; schizophrenia; cognitive-behavioral therapy

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1. INTRODUCTION

The diagnostic models for schizophrenia (e.g.: DSM-IV-R) tend to emphasize psychotic symptoms as "present" or "absent" [1] However, the dichotomous approach has been considered a limitation to the understanding of psychotic-like experiences and may be responsible for the exacerbation of the stigma suffered by patients and their families [2, 3, 4, 5].

Similarly to the etiological continuity of psychotic continuum regarding hallucinations and delusions [*e.g.*, 6, 7, 8] adopting a perspective of continuity regarding paranoid experiences across clinical and non-clinical populations may favor the understanding of the etiology and maintenance of paranoid symptoms. Strong evidence support the continuity approach, as several epidemiological studies have shown over the past decade [9, 10, 11, 12, 13, 14].

Earlier studies were more narrowly focused on specific populations and assessed paranoid ideation in just a few dimensions [15, 16, 17, 18, 19]. More recent studies by Freeman, *et al.* [22] pointed out that paranoid ideations were present in about a third of their sample drawn from a nonclinical population. According to these authors, it is possible that these ideations are as common among ordinary individuals as are the symptoms of anxiety and depression, much in the same way as proposed by Verdoux, & van Os [14]. Several authors [*e.g.* 20, 7, 21, 14, 32] thus, consider paranoia a rather common social and cognitive process. Freeman et al. [22] suggest that paranoid ideations are hierarchically determined and function in pyramidal fashion. Located at the base of the pyramid are the more basic ideations, denoting a concern with social scrutiny. Conversely, more rare ideations are found at the top of the pyramid, such as persecutory schemes and ideas of conspiracy, which are more serious from the clinical standpoint. In a more recent study by Freeman et al. [23], persecutory ideation was present as a spectrum in clinical and non-clinical groups and varied consistently with variables such as anxiety, worry, interpersonal sensitivity, and history of trauma.

It is then important to study paranoid symptomatology more comprehensively and across different populations to assess the continuum in paranoid experiences. In the present study, in order to clarify these symptomatic thought processes, 187 participants were divided into four groups: (1) actively psychotic patients suffering from schizophrenia, (2) stable patients (not actively psychotic), (3) relatives of these patients, and (4) unaffected controls from the general population. Regarded as a continuum, paranoid ideation is a common experience, and it is important to assess whether the paranoid thought content may be less relevant to a potentially inherited psychopathology than the delusional conviction seen in patients. The fact that paranoid beliefs are to be found in the general population, although in a less severe degrees, may indicate that these cognitive construct are not exclusively due to genetic risk factors, and are present in all individuals as a normative phenomenon (18). On the other hand, it would be possible to determine whether the increase of such beliefs in patient's relatives, living with the patients, is related to the paranoid symptoms in schizophrenia. This relationship, if existent, may point out to the environmental factors involved in the symptomatology of schizophrenic psychosis.

The main hypothesis is that paranoid beliefs, though an important aspect to consider to the diagnosis of paranoid schizophrenia, are not exclusively seen in people suffering from this psychopathology, and exists in a less severe form in the general population, as suggested in previous studies [6, 22, 23]. It is expected that the main distinction between these four groups concerns the severity and frequency of paranoid experiences, with undiagnosed participants experiencing the less frequent and severe paranoid ideation than diagnosed participants. It is also hypothesized that (a) among the undiagnosed participants, relatives of people with schizophrenia may differ concerning the frequency, distress, and conviction in paranoid ideation in comparison to healthy controls (undiagnosed participants from the general population), considering the higher morbidity risk and paranoia-proneness presented by close relatives of patients with schizophrenia; and (b) that the actively psychotic patients present the most frequent and severe paranoid symptoms, in comparison to the other 3 groups, and (c) specific paranoid beliefs are associated with psychopathology, while some paranoid beliefs are more unspecific and found to be present across clinical and non-clinical participants.

2. METHODS

2.1. Participants and Procedures

A total of 187 subjects participated in this study. Participants with schizophrenia were contacted in Madeira and Azorean Islands after obtaining approval from ethical committee in 3 mental health institutions. Diagnosis and current condition was confirmed with the responsible psychiatric staff and by consulting the patient's files. Only the patients that received a schizophrenia diagnose in the last 6 or more months entered the clinical samples in this study. The 91 patients that filled this criteria were then divided into 30 participants suffering from schizophrenia currently in remission, and 61 participants actively psychotic. The non-clinical samples were 64 healthy controls (drawn from the general Azorean population) and 32 undiagnosed first-degree relatives of the participants with schizophrenia. Study goals were explained to all participants, who gave their informed consent and agreed to the administration of self-report scales. Participants with schizophrenia often required assistance filling the assessment protocol, and a psychologist was present at all times to administer the scales in interview format.

2.2. Measures

General Paranoia Scale- **GPS**, [15, 24] The GPS is a 20-item self-report questionnaire designed to assess paranoid ideation in non-clinical populations. Items are coded in a 5 point Likert scale and total score can range from 20 to 100, with higher scores suggesting the presence of more paranoid ideations. Items' content relate to the belief that other people may influence one's behavior and that may be against the individual in several ways. Such beliefs may provoke suspicion and the impression of being scrutinized by others. The GPS revealed good psychometric properties in studies by Fenigstein e Vanable (15), with internal consistency ranging from .78 to .89 in normative samples. In the current study, Cronbach's alpha were of .92.

Paranoia Checklist- **PC** [24,25]. PC was designed to assess three dimensions in clinical populations: frequency of paranoid thoughts, the degree of conviction that they are real, and the distress related to these thoughts. The PC internal consistency in all dimensions was high, both in the original studies [22] and for the sample in the current study ($\alpha > .09$). The use of this measure will allow a multidimensional approach to paranoid ideation, as well as assessing paranoid ideation in its more severe aspects.

2.3. Statistical analysis

Data analysis was carried out on SPSS 20.0 (IBM, Corp, 2011). Correlation analyses was performed between results obtained on the different rating scales used in this study. Analysis of variance with post-hoc tests were used to determine differences observed between groups on the assessed variables. Finally, Chi Square tests (χ^2, with Fischer exact tests, when applicable) were used to assess the distributions of categorical variables.

3. RESULTS

3.1. Sample characteristics

Sample characteristics are presented in Table 1. Differences between groups were found regarding sociodemographic variables, as it is expected in studies with clinical and non-clinical samples. Differences between groups were observed in marital status (χ^2=66.975; *p*=.000), socioeconomic status (χ^2=43.789; *p*=.000) and years of schooling ($F_{(3,164)}$=8.230; *p*=.000), reflecting the psychosocial difficulties and deficits presented both clinical groups when compared with the non-clinical groups. Concerning age, a significant difference was found between groups ($F_{(3,181)}$ = 5.432; *p* = .001). *Post-hoc* tests revealed that the single difference was between the relatives of participants with schizophrenia and the remaining groups, which is justified by the fact that most of the relatives of the participants with schizophrenia were their caretakers, such as their parents or older siblings (that were almost 10 years older, on average, than participants from other groups). The four groups also differed regarding gender distribution because of an unusual ratio observed in the participants in remission and relatives groups (χ^2=35.070; p=.000). However, non-clinical and clinical groups together are gender-equivalent (χ^2=.426;p=.560), assuring further comparability.

Table 1: Sample Characteristics (n=187)

	Non clinical sample		**Clinical sample**			
Variables	**Healthy controls (n = 64)**	**Participants' relatives (n = 32)**	**Active psychotic (n = 61)**	**In remission (n = 30)**		
Gender	N (%)	N (%)	N (%)	N (%)	χ^2	*p*
Male	43 (67.2%)	8 (25%)	20 (32.8%)	24 (80%)	58.94	.0001
Female	21 (32.8%)	24 (75%)	41 (67.2%)	6 (20%)		
Marital status						
Single	18 (30%)	0 (.0%)	33 (55.9%)	21 (70%)		
Married	35 (58.3%)	28 (90.3%)	13 (22%)	6 (20%)		
Divorced	3 (5.0%)	0 (.0%)	7 (11.9%)	2 (6.7%)	70.8	.0001
Widower	3 (5.0%)	3 (9.7%)	4 (6.8%)	1 (3.3%)		
Civil union	0 (.0%)	0 (.0%)	1 (1.7%)	0 (.0%)		
Socioeconomic status						
Low	22 (37.3%)	15 (62.5%)	46 (80.7%)	27 (90%)		
Medium	20 (33.9%)	4 (16.7%)	11 (19.3%)	3 (10%)	46.60	.0001
High	12 (20.3%)	5 (20.8%)	0 (.0%)	0 (.0%)		
Student	5 (8.5%)	0 (.0%)	0 (.0%)	0 (.0%)		
	M (SD)	M (SD)	M (SD)	M (SD)	*F*	*p*
Age (years)	45.2 (17.3)	55.6 (13.0)	43.8 (12.6)	43.5 (12.6)	4.53(4;180)	.002
Years of schooling (years)	9.8 (4.8)	7.7 (4.3)	6.4 (3.5)	6.3 (3.4)	6.16(4; 163)	.000

3.2. Paranoid ideation as a continuum

Descriptive statistics concerning the variables in this study are presented in table 2. Normality tests were carried out to assess distributions of the scores on the paranoia subscales for all groups. Results show that distributions in the GPS scores are not only continuous, but normally distributed across the four samples in this study (table 2). However, the Paranoia Checklist variables did not follow a normal distribution for most groups, except for the Distress for participants in remission.

As presented in Table 3, GPS and the PC presented significant correlations, demonstrating a convergence between the two scales that evaluate paranoid ideations.

Table 2: Descriptive Statistics and Normality Tests

	Healthy controls (n = 64)					**Active psychotic (n = 61)**					**In remission (n = 30)**					**Patient's relatives (n = 32)**				
	M	***SD***	***Min***	***Max***	***W***	***M***	***SD***	***Min***	***Max***	***W***	***M***	***SD***	***Min***	***Max***	***W***	***M***	***SD***	***Min***	***Max***	***W***
Freq	25.2	11.4	18	75	.667**	52.0	20.0	18	90	.947*	36.4	19.3	18	85	.853**	23.6	10.4	18	64	.617**
Con	37.1	21.7	18	90	.814**	57.7	17.5	18	86	.960*	42.5	19.4	18	86	.914*	29.4	14.4	18	90	.683**
Dis	16.9	17.1	0	58	.857**	36.2	20.1	0	72	.935*	28.9	20.2	0	67	.943	11.4	12.2	0	45	.850**
GPS	41.5	12.4	20	77	.971	57.8	15.7	20	86	.979	48.4	16.7	23	86	.962	37.2	10.2	22	63	.934

Note: Freq = Frequency, Con = Conviction, Dis = Distress, GPS = Global Paranoia Scale; * p < .05; ** p < .001

Table 3: Correlations between GPS and PC (n=187)

	GPS	PC Frequency	PC Conviction
PC			
Frequency	.80**		
Conviction	.66**	.76**	
Distress	.64**	.73**	.60**

** p < .001

We then proceeded to the comparisons of the four subject groups using an ANOVA with Welch correction, as a more robust method to assumptions violation [26]. Bonferroni corrections were applied to correct for multiple tests.

In summary (table 4), the GPS indicated a significant difference [F(3, 183) = 21.445, p = 0.000]. *Post-hoc* analyses indicated that the means of patient's relatives on GPS scores were significantly lower than both clinical groups (patients in remission and active psychotics), but not from healthy controls. Regarding healthy controls, participants from this group did not significantly differ from patients in remission, but presented a significantly lower mean when compared to active psychotics.

Analyses with the Paranoia Checklist were carried out to allow a more multidimensional approach of paranoid ideation, in dimensions such as the frequency, the degree of conviction and the distress caused by the occurrences of paranoid beliefs. The results also indicated a significant difference in the frequency [F(3, 183) = 33.203, p = 0.000], conviction [F(3, 183) = 24.295, p = 0.000], and distress [F(3, 183) = 20.572, p = 0.000].

Post-hoc analyses indicated the patients in active phase had significantly higher scores for frequency and conviction of paranoia than the other three comparison groups. However, when assessing distress, both patients in active phase and in remission endorsed higher levels of distress and differed from both the unaffected groups on this dimension.

For both the GPS and the PC, all four groups endorsed to some extent every item measured, including distress caused by the occurrence of paranoid ideations.

Table 4: Group Comparisons for GPS (General Paranoia Scale) and PC (Paranoia Checklist)

		SS	*df*	*Welch*	*p*
GPS	Between Groups	12178.381	3	21.445	.000
	Within Groups	35794.732	183		
	Total	47973.112	186		
Frequency	Between Groups	28116.213	3	33.203	.000
	Within Groups	46294.375	183		
	Total	74410.588	186		
Conviction	Between Groups	21263.472	3	24.945	.000
	Within Groups	65353.030	183		
	Total	86616.503	186		
Distress	Between Groups	18079.446	3	20.572	.000
	Within Groups	59326.832	183		
	Total	77406.278	186		

In order to assess the frequency of different paranoid ideations in each group, as assessed by the PC, items answered with "once a week", "several times a week" and "at least once daily" were grouped together, considering that responses of "hardly ever" and "only once a month" were not indicative of the prevalence of such thoughts. This same criterion was used for analyzing the other dimensions of the PC: conviction and distress.

Chi-square analysis showed that groups differed regarding the frequency, conviction and distress of the 18 items assessed by the PC (see tables 5, 6 and 7). Items #17 and #18 were endorsed least often by subjects in each of the groups, being also considered least convincing and associated by participants with the least amount of distress. Conversely, items #2, #10 and #12 were most distressful for subjects in all comparison groups. Item #2 was found most convincing and was most frequently endorsed by all groups. Item #12, while frequently chosen, was not considered as convincing as the latter across all the groups. Finally, item #10 was not considered as convincing and was not as frequently chosen as the latter 2 by subjects in the four groups. However, items #4 and #5 results show a different pattern of responses, which differs by group. They are more convincing, frequently endorsed by and associated with greater distress by patients in the actively psychotic group as compared to subjects in all other groups, who endorse them less frequently, consider them less distressful and regard them as least convincing.

Table 5: Distribution of Frequency of Paranoid Beliefs Scores Across Samples and Chi-square Tests for PC

	Active Psychotics (n = 61)				Patients in remisson (n = 30)				Healthy controls (n = 64)				Patient's relatives (n = 32)					
	Less often		More often		Less often		More often		Less often		More often		Less often		More often			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	χ	*p*
1. I need to be on my guard against others	22	36.1	39	63.9	23	76.7	7	23.3	52	81.2	12	18.8	27	84.4	5	15.6	37.487	.008
2. There might be negative comments being circulated about me	19	31.1	42	68.9	17	56.7	13	43.3	55	85.9	9	14.1	30	93.8	2	6.2	55.382	.000
3. People deliberately try to irritate me	24	39.3	37	60.7	22	73.3	8	26.7	58	90.6	6	9.4	27	84.4	5	15.6	46.614	.000
4. I might be being observed or followed	19	31.1	42	68.9	22	73.3	8	26.7	61	95.3	3	4.7	30	93.8	2	6.2	72.927	.000
5. People are trying to make me upset	22	36.1	39	63.9	21	70	9	30	60	93.8	4	6.2	29	90.6	3	9.4	57.748	.000
6. People communicate about me in subtle ways	29	47.5	32	52.5	24	80	6	20	53	82.8	11	17.2	28	87.5	4	12.5	26.373	.003
7. Strangers and friends look at me critically	25	41	36	59	21	70	9	30	58	90.6	6	9.4	31	96.9	1	3.1	50.211	.000
8. People might be hostile towards me	22	36.1	39	63.8	22	73.3	8	26.7	55	85.9	9	14.1	27	84.4	5	15.6	41.931	.000
9. Bad things are being said about me behind my back	21	34.4	40	65.6	18	60	12	40	53	82.8	11	17.2	30	93.8	2	6.2	46.088	.000
10. Someone I know has bad intentions towards me	23	37.7	38	62.3	21	70	9	30	57	89.1	7	10.9	27	84.4	5	15.6	43.082	.000
11. I have a suspicion that someone has it in for me	26	42.6	35	57.4	22	73.3	8	26.7	55	85.9	9	14.1	30	93.8	2	6.2	39.012	.000
12. People would harm me if given an opportunity	21	34.4	40	65.6	20	66.7	10	33.3	54	84.4	10	15.6	26	81.2	6	18.8	39.217	.000
13. Someone I don't know has bad intentions towards me	32	52.5	29	47.5	25	83.3	5	16.7	62	96.9	2	3.1	29	90.6	3	9.4	41.38	.000
14. There is a possibility of a conspiracy against me	27	44.3	34	55.7	22	73.3	8	26.7	57	89.1	7	10.9	30	93.8	2	6.2	40.665	.000
15. People are laughing at me	23	37.7	38	62.3	18	60	12	40	60	93.8	4	6.2	30	93.8	2	6.2	57.569	.000
16. I am under threat from others	27	44.3	34	55.7	23	76.7	7	23.3	61	95.3	3	4.7	29	90.6	3	9.4	48.857	.000
17. I can detect coded messages about me in the press/TV/radio	37	60.7	24	39.3	24	80	6	20	63	98.4	1	1.6	31	96.9	1	3.1	36.757	.000
18. My actions and thoughts might be controlled by others	31	50.8	30	49.2	21	70	9	30	61	95.3	3	4.7	31	96.9	1	3.1	43.701	.000

Table 6: Distribution of Conviction on Paranoid Beliefs Scores across Samples and Chi-square Tests for the PC

	Active Psychotics (n = 61)				Patients in remisson (n = 30)				Healthy controls (n = 64)				Patient's relatives (n = 32)					
	Less convinced		More convinced		Less convinced		More convinced		Less convinced		More convinced		Less convinced		More connvinced			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	χ	*p*
1. I need to be on my guard against others	19	31.1	42	68.9	15	50	15	50	38	59.4	26	40.6	19	59.4	13	40.6	11.922	.008
2. There might be negative comments being circulated about me	11	18	50	82	12	40	18	60	40	63	24	37.5	25	78.1	7	21.9	39.75	.000
3. People deliberately try to irritate me	17	27.9	44	72.1	16	53.3	14	46.7	45	70.3	19	29.7	23	71.9	9	28.1	27.747	.000
4. I might be being observed or followed	10	16.4	51	83.6	20	66.7	10	33.3	53	83	11	17.2	29	90.6	3	9.4	75.201	.000
5. People are trying to make me upset	13	21.3	48	78.7	20	66.7	10	33.3	50	78.1	14	21.9	28	87.5	4	12.5	57.115	.000
6. People communicate about me in subtle ways	26	42.6	35	57.4	16	53.3	14	46.7	41	64	23	35.9	26	81.2	6	18.8	14.277	.003
7. Strangers and friends look at me critically	17	27.9	44	72.1	15	50	15	50	42	66	22	34.4	29	90.6	3	9.4	37.785	.000
8. People might be hostile towards me	15	24.6	46	75.4	19	63.3	11	36.7	41	64	23	35.9	24	75	8	25	30.408	.000
9. Bad things are being said about me behind my back	13	21.3	48	78.7	13	43.3	17	56.7	37	58	27	42.2	27	84.4	5	15.6	37.093	.000
10. Someone I know has bad intentions towards me	21	34.4	40	65.6	17	56.7	13	43.3	43	67	21	32.8	27	84.4	5	15.6	25.249	.000
11. I have a suspicion that someone has it in forme	19	31.1	42	68.9	18	60	12	40	42	66	22	34.4	28	87.5	4	12.5	30.867	.000
12. People would harm me if given an opportunity	19	31.1	42	68.9	16	53.3	14	46.7	42	66	22	34.4	26	81.2	6	18.8	25.892	.000
13. Someone I don't know has bad intentions towards me	27	44.3	34	55.7	24	80	6	20	47	73	17	26.6	26	81.2	6	18.8	20.443	.000
14. There is a possibility of a conspiracy against me	26	42.6	35	57.4	20	66.7	10	33.3	48	75	16	25	30	93.8	2	6.2	28.271	.000
15. People are laughing at me	16	26.2	45	73.8	15	50	15	50	47	73	17	26.6	29	90.6	3	9.4	46.036	.000
16. I am under threat from others	24	39.3	37	60.7	23	76.7	7	23.3	49	77	15	23.4	29	90.6	3	9.4	33.014	.000
17. I can detect coded messages about me in the press/TV/radio	34	55.7	27	44.3	24	80	60	20	52	81	12	18.8	30	93.8	2	6.2	19.732	.000
18. My actions and thoughts might be controlled by others	30	49.2	31	50.8	20	66.7	10	33.3	54	84	10	15.6	30	93.8	2	6.2	28.329	.000

Table 7: Distribution of Degree of Distress on Paranoid Beliefs Scores across Samples and Chi-square Tests for PC

	Active Psychotics (n = 61)				Patients in remisson (n = 30)				Healthy controls (n = 64)				Patient's relatives (n = 32)					
	Less distress		More distress		Less distress		More distress		Less distress		More distress		Less distress		More distress			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	χ	*p*
1. I need to be on my guard against others	22	36.1	39	63.9	19	63.3	11	36.7	44	68.8	20	31.2	27	84.4	5	15.6	26.640	.000
2. There might be negative comments being circulated about me	15	24.6	46	75.4	14	46.7	16	53.3	46	71.9	18	28.1	23	71.9	9	28.1	33.908	.000
3. People deliberately try to irritate me	22	36.1	39	63.9	11	36.7	19	63.3	45	70.3	19	29.7	24	75	8	25	24.087	.000
4. I might be being observed or followed	18	29.5	43	70.5	19	63.3	11	36.7	54	84	10	15.6	31	96.9	1	3.1	58.847	.000
5. People are trying to make me upset	20	32.8	41	67.2	15	50	15	50	50	78.1	14	21.9	30	93.8	2	6.2	44.442	.000
6. People communicate about me in subtle ways	35	57.4	26	42.6	20	66.7	10	33.3	49	76.6	15	23.4	28	87.5	4	12.5	10.859	.000
7. Strangers and friends look at me critically	24	39.3	37	60.7	13	43.3	17	56.7	48	75	16	25	29	90.6	3	9.4	33.027	.000
8. People might be hostile towards me	18	29.5	43	70.5	15	50	15	50	47	73.4	17	26.6	23	71.9	9	28.1	28.800	.000
9. Bad things are being said about me behind my back	22	36.1	39	63.9	10	33.3	20	66.7	43	67.2	21	32.8	25	78.1	7	21.9	24.975	.000
10. Someone I know has bad intentions towards me	22	36.1	39	63.9	12	40	18	60	40	62.5	24	37.5	26	81.2	6	18.8	21.639	.000
11. I have a suspicion that someone has it in for me	18	29.5	43	70.5	15	50	15	50	43	67.2	21	32.8	26	81.2	6	18.8	29.003	.000
12. People would harm me if given an opportunity	19	31.1	42	68.9	7	23.3	23	76.7	42	65.6	22	34.4	19	59.4	13	40.6	23.792	.000
13. Someone I don't know has bad intentions towards me	26	42.6	35	57.4	15	50	15	50	48	75	16	25	27	84.4	5	15.6	22.953	.000
14. There is a possibility of a conspiracy against me	23	37.7	38	62.3	17	56.7	13	43.3	50	78.1	14	21.9	26	81.2	6	18.8	27.750	.000
15. People are laughing at me	21	34.4	40	65.6	11	36.7	19	63.3	53	82.8	11	17.2	26	81.2	6	18.8	43.072	.000
16. I am under threat from others	27	44.3	34	55.7	16	53.3	14	46.7	52	81.2	12	18.8	24	75	8	25	21.637	.000
17. I can detect coded messages about me in the press/TV/radio	34	55.7	27	44.3	27	90	3	10	56	87.5	8	12.5	29	90.6	3	9.4	26.538	.000
18. My actions and thoughts might be controlled by others	31	50.8	30	49.2	21	70	9	30	53	82.8	11	17.2	29	90.6	3	9.4	22.672	.000

4. DISCUSSION

Congruous to recent findings, current findings indicate that participants in all groups (schizophrenic patients and non-affected participants) typically endorsed the occurrence of paranoid beliefs measured by the GPS and PC items. This result is consistent with suggestions to the effect that ideations of this kind are not exclusive of paranoid schizophrenic patients, being also present to some extent in the remaining population. In our perspective, this outcome provides further evidence in support of the model of continuity, as posited in the literature reviewed for this study [e.g.: 6, 13, 23, 27-29].

As noted above, it is possible to examine paranoia as a broader construct not restricted to the realm of psychotic symptomatology. We have demonstrated that it is possible to assess paranoia throughout the population in general, from non-clinical groups to clinical groups, demonstrating increased frequency (and intensity) across this population continuum, until it reaches a more delusional level, as seen in schizophrenia.

Using both the GPS and the PC scales, we have detected significantly higher frequencies, conviction, and levels of distress of paranoid ideation in patients suffering from schizophrenia. Given that persecutory and paranoid delusions are critical symptoms for the diagnosis of paranoid schizophrenia, this result was entirely expected. Patients in remission showed few differences from the unaffected groups, possibly indicating treatments' effectiveness. Interestingly, patients in remission appeared indistinguishable from unaffected controls, but participant's relatives actually tended to score even less on paranoid symptoms than unaffected controls. This was contrary to our initial hypothesis that relatives would score at an intermediate level, between controls and patients, due to educational factors or the presence of patients with paranoid symptomatology in their immediate environment. A possible explanation to these results is that these participants may present paranoid ideation as everybody else, but the familiarity with paranoid symptomatology of their relatives may yield to a higher tolerance or letting go of these thoughts more easily.

Present results also reveal that actively psychotic patients showed a higher incidence of rare and bizarre ideations (typical of the higher levels of the hierarchy established by Freeman et al. [25], when compared to subjects unaffected by this pathology. This suggests that the specific nature of paranoid beliefs may be more closely associated with schizophrenic disorders. It is also clear that some types of paranoid thoughts are more frequent among individuals (both clinical and non-clinical groups), even though their frequency may differ according to their current condition. However, these more common ideations are of the kind Freeman et al. [25] would classify at the base of their pyramid, since they represent concerns of social evaluation and ideas of reference.

Conviction and distress arising from paranoid beliefs follow the same pattern which defines the frequency of their endorsement. The most usual and "tolerable" paranoid thoughts, belonging to the lowest levels of the hierarchy defined by Freeman et al. [25], are accepted with greater conviction, being distressful to individuals of all groups. On the other hand, the more bizarre ideations, positioned at the top of Freeman´s hierarchy, tend to generate less conviction and distress, and this is true even among actively schizophrenic patients.

This is the first study of its kind in the Portuguese population. Considering the cross-sectional research design, and given the sizes of the groups studied, generalization of results should be regarded carefully, and the unique findings of this study would be enriched with further replication. Another limitation of the current study is the sole reliance on self-report measures. Even with the application of the protocol in interview format, active psychotic may give less reliable responses, especially when compared to their healthy counterparts. The finding that unaffected relatives of patients, though not significantly different from other unaffected, showed a trend towards lower ratings for paranoia than the population in general deserves additional study. It is possible that unaffected relatives, having experienced the societal definition of these thoughts as pathologic, developed a tendency to deny these experiences? It is also possible that they have learned better reality testing through their contact with their affected relatives?

5. CONCLUSION

It is clear that all four groups experience some degree of paranoid ideation, providing evidence that paranoid beliefs are not, per se, a dichotomous phenomenon exclusive of those diagnosed with severe mental illnesses. The frequency and conviction of such ideations, on the other hand, will clearly distinguishes these groups. In the case of more severe paranoia, the distress focuses mainly on how others wish to hurt or to control you (Ellet, Lopes, & Chadwick, 2003), clearly distinguishing this kind distress from the distress caused by common social fears and anxiety. In the latter case, the subject's own behavior is believed to lead others into judging them negatively, which are present in a more pervasive fashion. By examining paranoid ideation across this population continuum, we verified that these dimensions are present beyond the usual context of psychosis. Taken together, these findings suggest that although paranoid beliefs may be present across different populations, the thought's contents and the reactions to such thoughts may be a more distinctive feature. This may provide better assessment strategies relating to this construct, as a cause for distress in psychotic and non-psychotic patients, and facilitating treatment. Further, by normalizing, exploring and understanding the continuity of

these paranoid experiences, we may help reducing the stigma experienced by patients and families affected by schizophrenia.

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