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The Attachment-Caregiving Questionnaire as a Personality Inventory Sensitive to Psychological Vulnerabilities: A Pilot Study

Marcantonio Gagliardi [1,*] and Elina Mitrofanova [2]

[1] Institute for Lifecourse Development, University of Greenwich, London SE10 9LS, UK
[2] School of Human Sciences, University of Greenwich, London SE10 9LS, UK; e.mitrofanova@greenwich.ac.uk
* Correspondence: m.gagliardi@greenwich.ac.uk

Abstract: Evolution enabled the human species to form attachment relationships, where a caregiver looks after a needy attacher. In early-life interactions with a parent-caregiver, the child-attacher acquires adaptive durable information—the attachment dimensions—which become part of their personality. As such, the dimensions affect vulnerability to psychological conditions, but the precise nature of this link remains controversial. With this pilot study, we addressed this issue. Considering a sample of 67 psychotherapy patients, we tested (H1) the expected connections between dimensions and specific vulnerability to psychological conditions and (H2) the capability of a self-report to detect such links. We relied on the Attachment-Caregiving Questionnaire (ACQ) to measure seven dimensions and test the hypotheses by (1) investigating the correlation between the patients' dimensions and their symptoms and (2) building logistic regression models to test whether the dimensions can predict vulnerability to specific symptoms. Our analysis demonstrated that almost all expected dimensions could predict vulnerability to related symptoms. Given the limited sample size, one dimension could not be connected to any symptoms. This study provides preliminary support for the connections between attachment dimensions and vulnerability to clinical conditions and the ACQ's capability in detecting such links. Further testing is required.

Keywords: attachment dimension; caregiving; personality; psychological vulnerability; symptom; logistic regression

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1. Introduction

Humans have evolved as a social and altricial species, with their attachment system playing a central role in the constitution of these features [1,2]. During the first years of life, children attach to specific carers, receiving essential physical and psychological nurture. Despite its relevance to development, attaching remains a fundamental motivation throughout life and can be directed toward any human being [1–6].

In the context of attachment relationships, the attacher acquires low-level, implicit information about the self, the caregiver, and their relationship. This information was first assessed in childhood through the Strange Situation Procedure (SSP) [7,8] and then in adulthood using the Adult Attachment Interview (AAI) [9,10]. Over the years, numerous instruments have been created to measure attachment at any age, in particular self-reports addressing adult close relationships—such as the Revised Adult Attachment Scale (RAAS) [11] or the Experiences in Close Relationships (ECR) [12].

Attachment research indicates that the phenomenon has a representational and dimensional nature characterized by the implicit acquisition of data over several evolutionarily distinct domains [13–16]. Each piece of these data is acquired as an *attachment dimension* for the first time in an early sensitive period and tends to remain unaltered throughout life, although modifications are possible. So far, seven dimensions have been identified [15–20], which can be described as follows.

(1) Disorganization (Dis). This dimension represents the implicit information that the caregiver is frightful [8,21–23]. When the child perceives their attachment figure as a threat, they acquire the tacit knowledge of a dangerous caregiver and tend to activate the defense motivational system in attachment interactions. The clinical manifestations directly related to high levels of this dimension are dissociative symptoms.

(2) Avoidance (Av). The avoidant child acquires the implicit information of an unloving caregiver [5,7,9,24]. Therefore, they tend to deactivate their attachment system, renouncing their emotional needs to be met by the attachment figure. Typical manifestations of this acquisition are hyper-rationalization and a dismissing attitude toward emotionally intimate matters, which may belong to a number of clinical conditions and do not identify any specific one.

(3) Ambivalence (Am). The ambivalent child acquires the implicit information of an unreliable caregiver [5,7,9,24]. As a result, they tend to hyper-activate their attachment system and escalate their attempts to catch their attachment figure's attention. This acquisition is typically manifested by preoccupation about being rejected and abandoned, which—as with avoidance—does not identify any specific clinical condition.

(4) Phobicity (P). The phobic child experiences excessive closeness to the caregiver and limited exploration, implicitly learning they are a particularly vulnerable being in a dangerous world [15,25,26]. Consequently, they tend to focus on their health condition, especially with respect to the balance between receiving protection and being autonomous from an attachment figure. The typical clinical manifestations of high phobicity are separation anxiety and panic attacks.

(5) Depressivity (D). The depressive child tacitly learns that being able to manage difficult situations autonomously—as shown by the caregiver—is essential [15,26,27]. As a result, they tend to rely on themselves and develop their abilities to achieve results meaningful to their attachment figure—who, on the other hand, is meager at praising any achievements. From a clinical perspective, a feeling of lack of personal value and solitude are typical depressive manifestations, although such feelings are frequently reported as a side-effect of many conditions.

(6) Somaticity (S). The somatic child acquires the implicit knowledge that conforming with the attachment figure is crucial, first aligning with their internal states—such as sensations and emotions—and then with more complex expressions—such as preferences and opinions [15,16,26]. As a consequence, they focus on compliance with social standards and appearance. The typical clinical manifestations of high somaticity are social anxiety and eating disorders.

(7) Obsessivity (O). The implicit acquisition of the obsessive child concerns the vital relevance of taking care of family members by respecting a strict code of conduct [15,26]. Consequently, the child focuses on the directions provided by the caregiver to prevent terrible outcomes and demonstrate how not to be a bad person. Obsessions and compulsions are the direct consequences of high obsessivity.

These dimensions address evolutionarily relevant problems—providing survival and reproductive advantages—and given their foundational status and durability, become an essential part of our personality [1,15,16,28–32]. However, the primary role of attachment also entails possible drawbacks, as demonstrated by its link with the most common mental conditions—such as anxiety, mood, eating, and obsessive disorders [15,22,23,26,33–35]. From an evolutionary perspective, we can expect that when the current life context does not match the one in which the dimensions were acquired, the attacher will become more vulnerable to developing related psychological conditions [14–16]. For example, learning as a child that the environment is dangerous and keeping close to the attachment figure (high phobicity) can expose one to the development of separation anxiety or panic attacks when, later in life, the context requires more independence. Nonetheless, despite the established attachment–psychopathology connection, the precise nature of this link remains controversial.

With this pilot study, we addressed this issue by testing the relationship between attachment dimensions and specific clinical manifestations. To accomplish that, we measured the dimensions through the Attachment-Caregiving Questionnaire (ACQ) [36,37]—a self-report designed to assess the above-mentioned seven dimensions—and looked at the symptom data from the clinical records of 67 patients in psychotherapy. Following the literature, we hypothesized (H1) a link between the attachment dimensions Dis, P, D, S, and O and specific symptomatology [1,15–17,21], grouping the symptoms detected by the therapists accordingly. Hence, we investigated the correlation between attachment and symptom groups and built logistic regression models to test whether the dimensions can predict the presence of related symptomatology. By achieving that, we also tested (H2) the ACQ's capability in detecting the expected links between dimensions and clinical vulnerability.

In the following sections, we illustrate how we implemented the study (Section 2). We then present our results (Section 3) and discuss them (Section 4).

2. Materials and Methods

This study relies on the data collected by administering the ACQ to psychotherapy patients and the information included in their clinical records about the symptoms they presented. The ACQ and the use of collected data for research purposes were first ethically approved by the University of Sheffield (Ref. 032300, 16 March 2020) and then by the University of Greenwich (Ref. 21.5.7.14, 20 December 2022). Participants gave informed consent to use the questionnaire data and clinical information for research purposes in an anonymous form. A copy of the questionnaire is included as Supplementary Material (File S1).

2.1. Participants

The study drew on the collaboration of 11 psychotherapists in private practice who invited their patients to complete the ACQ over a two-week period and provided information about manifestations of their conditions by completing a clinical record. Participants were only required to be over 18 years old. In total, 67 patients participated.

2.2. Procedure

Following the study's primary objective—i.e., to test the connection between high levels of specific attachment dimensions and expected psychological vulnerabilities to mental conditions—patients completed the ACQ, and their therapists provided information about their symptoms. By symptom, we mean here the manifestation of a psychological issue that is potentially clinically relevant—such as being anxious or feeling down.

Three attachment experts (who assessed over a hundred ACQs) first scored each completed questionnaire independently (93% inter-rater agreement) and then discussed their disagreements to reach a unanimous consensus. Symptoms were collected using a self-report clinical record provided to the therapists and clustered following the literature to make each group of symptoms correspond to an attachment dimension expected to increase vulnerability to such symptoms. For example, since the literature indicates that high levels of P increase vulnerability to separation anxiety and panic attacks [15,38], these two symptoms were grouped together. Finally, we only considered the five dimensions of Dis, P, D, S, and O for our analysis since the literature indicates they are related to specific mental disorders. On the other hand, Av and Am were excluded because the symptoms they are linked to do not characterize any specific condition.

2.3. Measures

The study included administering the ACQ to assess patients' attachment dimensions and a clinical record to collect their symptoms. Patients completed the ACQ, and their therapists filled in their clinical records.

2.3.1. Attachment

Attachment dimensions were measured using the Attachment-Caregiving Questionnaire (ACQ) [36,37] (included as Supplementary Material). The ACQ is a novel personality inventory focused on attachment, measuring the seven dimensions/traits of Dis, Av, Am, P, D, S, and O. Each of them corresponds to a default (sub)scale comprising items typically related to that dimension: 16 for Dis, 18 for Av, 15 for Am, and 19 for P, D, S, and O. However, the questionnaire collects additional data that allows for the interpretation of the default items. More precisely, the ACQ consists of three primary sections—Contextual Data, Attachment, and Caregiving—and several subsections—as described in Table 1. Its design allows the scorer to build flexible scales by moving items from one scale to another when they reason that the respondent attributed to that item a non-default meaning. For example, the scorer could deem a subject answered an item of the obsessive scale about 'doing the right thing' (personal obligation, deontological guilt) in a somatic way (social obligation, altruistic guilt) and move such an item to that scale [15,39]. Including extra-scale information provides a context for interpreting default-scale items and enables scale flexibility. Coherently, obtaining an ACQ profile requires an expert scorer or a trained Artificial Intelligence (AI) model—since traditional Factor Analysis does not allow for scale flexibility [36,37]. For this reason, the validity and reliability of the instrument will be estimated as soon as an AI model for data analysis is implemented. Finally, the attachment profile consists of the seven means calculated on the items assigned to each flexible scale.

Table 1. Attachment-Caregiving Questionnaire (ACQ) structure. The ACQ consists of three sections: (S1) Contextual Data, (S2) Attachment, and (S3) Caregiving. They collect data about the subject's (S1) context of life and anamnesis, (S2) current attachment (the seven scales/traits Dis, Av, Am, P, D, S, and O), and (S3) childhood caregiving experience (seven scales for each of the two primary caregivers and some family information).

Attachment-Caregiving Questionnaire (ACQ) (394 Items)				
Section (No. of Items)		**Subsection (No. of Items)**		**Content**
S1	Contextual Data (60)	A	Personal Information (23)	Context of life and anamnestic data.
		B	General Condition (20)	
		C	Specific Issues (17)	
S2	Attachment (128)	A	Introduction (3)	Data about current attachment (seven attachment dimensions/personality traits).
		B	Attachment (125)	
S3	Caregiving (206)	A	Introduction (1)	Data about childhood caregiving experience (seven dimensions for each of the two primary attachment figures and general information about the family).
		B	Family (17)	
		C	Introduction (4)	
		D	Maternal Figure (83)	
		E	Introduction (4)	
		F	Paternal Figure (83)	
		G	Additional Information (14)	

2.3.2. Symptoms

The clinical record completed by the therapists included a drop-down list of 35 symptoms (Table 2a), which was repeated five times to allow them to select up to five concurrent symptoms. Generalized anxiety was the most frequent symptom ($N = 26$), and self-harm was the least frequent one ($N = 0$) (Table 2b). Symptoms related to the same attachment dimension, according to the literature, were grouped together (Table 2c). Other categories, which could not be associated with specific dimensions, were considered to complete the clusterization.

Table 2. Symptom list, frequencies, and groups. (a) List of symptoms available to the therapists in the clinical record. The number between round brackets represents the symptom identifier (Sym. ID). (b) Frequencies of each symptom selected by the therapists. (c) Groups of symptoms according to their assumed relationships with attachment dimensions. The names of these dimensions are abbreviated as follows: (1) Dis: Disorganization. (2) Av: Avoidance. (3) Am: Ambivalence. (4) P: Phobicity. (5) D: Depressivity. (6) S: Somaticity. (7) O: Obsessivity.

(a) Listed Symptoms	**(b) Symptom Frequencies**			**(c) Symptom Groups**			
Symptom	Sym. ID	N	%	Group	Sym. ID	N	%
(1) Alexithymia	(14)	26	12.15%	Dis Symptoms	(1) (2) (7) (29)	15	7.01%
(2) Anhedonia	(28)	21	9.81%				
(3) Being aggressive/Excessively self-imposing	(33)	17	7.94%				
(4) Burn-out	(21)	14	6.54%	Av Symptoms	(15) (19)	10	4.67%
(5) Confused thoughts or reduced ability to concentrate	(32)	14	6.54%				
(6) Difficulties in understanding and relating to situations and people	(7)	11	5.14%				
(7) Dissociative symptoms (depersonalization, derealization)	(30)	10	4.67%	Am Symptoms	(13) (27)	6	2.80%
(8) Eating symptom: dysregulated eating (e.g., diets, restrictions, binges, purges, etc.)	(16)	8	3.74%				
(9) Eating symptom: worry (e.g., about weight, body image, physical shape, etc.)	(23)	8	3.74%				
(10) Extreme changes in mood with ups and downs	(6)	7	3.27%	P Symptoms	(12) (21)	19	8.88%
(11) Extreme feelings of guilt	(8)	7	3.27%				
(12) Fear for one's own safety and/or health	(3)	6	2.80%				
(13) Fear of rejection/abandonment	(17)	6	2.80%	D Symptoms	(10) (18) (34)	3	1.40%
(14) Generalized anxiety	(20)	6	2.80%				
(15) Hyper-rationalization	(12)	5	2.34%				
(16) Inability to cope with daily problems/stress	(15)	5	2.34%	S Symptoms	(8) (9) (30) (32)	34	15.89%
(17) Inability to manage anger	(19)	5	2.34%				
(18) Manic states	(22)	4	1.87%				
(19) Normalization/dismissing attitude	(24)	4	1.87%	O Symptoms	(11) (20) (23)	16	7.48%
(20) Obsessions and/or compulsions	(27)	4	1.87%				
(21) Panic attacks	(35)	4	1.87%	Substances Symptoms	(25)	2	0.93%
(22) Paranoia	(1)	3	1.40%	Unspecific AttachmentSymptoms	(4) (6) (14) (24) (28) (33)	77	35.98%
(23) Perfectionism/Rigidity	(9)	3	1.40%				
(24) Problem in the sexual sphere	(4)	2	0.93%				
(25) Problem with substance use	(11)	2	0.93%				
(26) Psychotic detachment from reality (delusions, hallucinations, etc.)	(13)	2	0.93%				
(27) Resentment at lack of care/attention	(25)	2	0.93%				
(28) Sad mood, feeling down	(2)	1	0.47%	Psychotic Symptoms	(26)	1	0.47%
(29) Self-harm	(5)	1	0.47%	Uncertain Symptoms	(35) (36)	5	2.34%
(30) Sense of constraint in relationships and/or certain situations	(10)	1	0.47%				
(31) Significant tiredness, low energy, or trouble sleeping	(18)	1	0.47%	Non-Attachment Symptoms	(3) (5) (16) (17) (22) (31)	26	12.15%
(32) Social anxiety	(26)	1	0.47%				
(33) Stress	(31)	1	0.47%				
(34) Suicidal thoughts	(34)	1	0.47%				
(35) Withdrawal from friends and activities	(36)	1	0.47%				
(36) Other	(29)	0	0.00%				
		214	100.00%			214	100.00%

2.4. Statistical Analysis

Sociodemographic and clinical data were described with frequencies and percentages for categorical variables and the mean and standard deviations for continuous variables.

The testing of hypotheses relied on (1) the correlations between the attachment dimensions of Dis, P, D, S, and O and the groups of symptoms and (2) models—provided by binomial logistic regressions—of how each of these dimensions could predict the presence of specific symptoms. Each symptom was coded with '1′ for present and '0′ for absent. When clustering them, '1′ was assigned if the subject presented at least one of the symptoms of the group, '0′ otherwise.

2.4.1. Correlations

Before calculating the Pearson correlations (r) of Dis, P, D, S, and O with the related symptom groups, we checked for the assumptions of this operation. Data were assessed (1) for normality of distribution for each dimensional mean at each level of the dependent variables (symptoms) and (2) for the presence of outliers. Since the Shapiro and Wilk [40] normality test showed a non-normal distribution for Dis, S, and O, the Spearman correlation (rho) was employed to measure the association of these dimensions with symptoms. On the other hand, P levels met parametric assumptions, and the Pearson correlation could be used to assess the association between this dimension and symptoms. D was excluded from the correlation analysis because of the extremely low occurrences of related symptoms in the sample (cf. Section 2.3.2, Table 2).

2.4.2. Binomial Logistic Regression

A series of binomial logistic regressions were performed to evaluate the ACQ's clinical predictive capability—more specifically, how each Dis, P, D, S, and O symptom group (dependent variable) could be predicted by the corresponding ACQ Dis, P, D, S, and O mean score (independent variable) (Table 3). Before the analyses, data were assessed for assumptions. As required, dependent variables were measured on a dichotomous scale and independent variables on a continuous one with no need for normality. However, the necessary sample size had to be ensured. With this respect, for each dependent variable to be predicted (Dis, P, D, S, and O symptom groups), the required sample size S_R was calculated using the formula $S_R = 10 \times Pr/F_M$, where Pr is the number of predictors and F_M is the minimum event fraction [41,42]. In our case, Pr was always equal to 1, and F_M was the smallest proportion of zeros or ones for each symptom category. The D group required a much greater sample size (223) than the one available (67), and no valid regression model could be built for this case.

Table 3. Required sample size for binomial logistic regressions. The table shows the required sample size (S_R) for the five binomial logistic regression models where an attachment dimension—Dis (Disorganization), P (Phobicity), D (Depressivity), S (Somaticity), and O (Obsessivity)—as independent variable (IV) predicts a corresponding symptom group as dependent variable (DV). The calculation relies on the formula $S_R = 10 \times Pr/F_M$, where Pr is the number of predictors (always 1) and F_M is the smallest fraction related to the corresponding symptom group events.

DVs (Predicted)	Present (1)		Absent (0)		IVs (Predictors) (Pr)	Minimum Event Fraction (F_M)	Required Sample Size $S_R = 10 \times Pr/F_M$
	N	%	N	%			
Dis Symptom Group	12	17.91%	55	82.09%	Dis	0.18	56
P Symptoms Group	17	25.37%	50	74.63%	P	0.25	39
D Symptoms Group	3	4.48%	64	95.52%	D	0.04	223
S Symptoms Group	30	44.78%	37	55.22%	S	0.45	22
O Symptoms Group	14	20.90%	53	79.10%	O	0.21	48

Finally, to ascertain that there were linear relationships between the independent variables and the logit transformation of the dependent variables, we used the Box and Tidwell [43] procedure. For all analyses, significance was set at $p < 0.05$.

3. Results

The descriptive statistics of our sample are summarized below (Table 4). Most of the 67 patients that partook were female and heterosexual, with a mean age of 37.

Table 4. Participants descriptive statistics.

Participants Descriptive Statistics							
		N	**%**	**Mean**	**Std. Dev.**	**Min**	**Max**
Sex	Male	16	23.9%				
	Female	51	76.1%				
	Other	0	0.0%				
	Total	67	100.0%				
Age	Male	16	23.9%	34	7	20	45
	Female	51	76.1%	37	12	20	63
	Other	0	0.0%	0	0	0	0
	Total	67	100.0%	36	11	20	63
Ethnicity	European	66	98.5%				
	Non-European	1	1.5%				
	Total	67	100.0%				
Sexual Orientation	Heterosexual	61	91.0%				
	Homosexual	3	4.5%				
	Bisexual	2	3.0%				
	Asexual	0	0.0%				
	Uncertain	1	1.5%				
	Other	0	0.0%				
	Total	67	100.0%				
Education	≤13 Years (High School)	23	34.3%				
	≤16 Years (Bachelors)	17	25.4%				
	≤15 Years (Masters)	13	19.4%				
	≤19 Years (Doctorate)	14	20.9%				
	Total	67	100.0%				
Native Language	Italian	66	98.5%				
	Other	1	1.5%				
	Total	67	100.0%				
Nationality	Italy	66	98.5%				
	Other	1	1.5%				
	Total	67	100.0%				

We report below the relevant results of our study. Data and details on computations are available as Supplementary Material (File S2).

3.1. Correlations

The results of the correlation analyses between the ACQ's dimensions and the symptom groups, described in Table 5, revealed statistically significant positive associations, ranging from weak (0.242) to moderate (0.400). Each dimension correlated with the corresponding symptom group and no other—except for S, which had an additional correlation with Dis symptoms.

Table 5. Correlations between ACQ scale scores and symptom groups. Given the attachment dimensions—Dis (Disorganization), P (Phobicity), S (Somaticity), and O (Obsessivity)—the table shows the correlations that could be calculated between them and the corresponding symptom groups: the Pearson correlation (r) for P and the Spearman correlation (rho) for Dis, S, and O.

		ACQ Scale Score			
Symptom Group		**Dis**	**P**	**S**	**O**
Dis Symptoms	rho	0.400 **	−0.135	0.242 *	−0.062
	Sig.	0.001	0.276	0.049	0.616
	N	67	67	67	67
P Symptoms	R	0.029	0.284 *	0.019	−0.018
	Sig.	0.819	0.020	0.880	0.883
	N	67	67	67	67
S Symptoms	rho	0.071	0.057	0.267 *	0.033
	Sig.	0.570	0.649	0.029	0.793
	N	67	67	67	67
O Symptoms	rho	0.059	0.001	0.100	0.266 *
	Sig.	0.636	0.949	0.422	0.030
	N	67	67	67	67

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

3.2. Binomial Logistic Regression

The binomial logistic regression models concerning Dis, P, S, and O—described in Table 6—were all statistically significant. The one concerning D was not significant due to insufficient sample size (cf. Section 2.4.2, Table 3). (1) The scores on the Dis-dimension were predictors of Dis-symptoms, $\chi^2(1) = 13.56$, $p = 0.001$. The model explained 30% (Nagelkerke R2) of the variance in Dis-symptoms and correctly classified 82.1% of cases. (2) The model for the P-dimension predicted P-symptoms, $\chi^2(1) = 6.16$, $p = 0.013$. It explained 13% (Nagelkerke R2) of the variance in P-symptoms and correctly classified 71.6% of cases. (3) The S scores model predicted S-symptoms, $\chi^2(1) = 6.20$, $p = 0.013$. It explained 12% (Nagelkerke R2) of the variance in S-symptoms and correctly classified 64.2% of cases. (4) Finally, the model for the O-dimension predicted O-symptoms, $\chi^2(1) = 4.77$, $p = 0.029$. It explained 11% (Nagelkerke R2) of the variance in O symptoms and correctly classified 79.1% of cases.

Table 6. Binomial logistic regressions' results. The binomial logistic regression models concerning Dis, P, S, and O were statistically significant.

Variable	β	S.E.	Wald	*p*-Value	Odds Ratio	95% CI for Odds Ratio
Dis	1.05	0.41	6.57	0.01	2.86	(1.28, 6.37)
P	0.62	0.28	4.93	0.03	1.87	(1.08, 3.23)
S	0.56	0.24	5.30	0.02	1.75	(1.09, 2.82)
O	0.27	0.13	4.66	0.03	1.31	(1.03, 1.68)

4. Discussion

The objectives of our pilot study were to test (H1) the connection between attachment dimensions and vulnerability to psychological conditions and (H2) the capability of the ACQ in detecting it.

Our results mostly confirmed our hypotheses. Four of the considered dimensions, Dis, P, S, and O, (1) were correlated with the expected symptoms—Dis, P, S, and O groups, respectively (cf. Section 3.1)—and (2) could predict their presence (cf. Section 3.2). More

specifically, they confirmed the links of Dis to dissociative symptoms, P to separation anxiety and panic attacks, S to social anxiety and eating symptoms, and O to obsessive symptoms. These findings support the connections of four dimensions to psychological vulnerabilities (H1) and the capability of the ACQ in detecting such links (H2). Given the small number of D symptoms observed, no valid statistical assessments could be made for this dimension.

First, we want to stress that each symptom represented a manifestation of a psychological issue that was potentially clinically relevant—such as anxiety or low mood—but not necessarily by itself determining a clinical condition. Similarly, symptom groups did not correspond to officially classified mental disorders but only to clusters of dimension-related manifestations. Coherently, the ACQ was designed as an attachment-informed personality inventory and not a diagnostic tool.

The small to moderate correlation coefficients between dimensions and symptoms (cf. Section 3.1, Table 5) may raise the question of the causal role of attachment and the clinical utility of the ACQ. In this regard, the literature suggests attachment acquisitions contribute to the onset of a mental issue and are not the only cause. Biological and contextual variables will also play a critical role. Therefore—coherently with our results—we should not expect high dimension-symptom correlations.

We predicted each dimension to correlate with the symptoms directly related to it. In other words, we expected the dimension X to be linked with X-symptoms. However, S not only correlated with S-symptoms—as for our hypothesis—but also with Dis-symptoms. Although explaining this link in detail goes beyond the scope of this work, we can suggest a possible reason. Indeed, when investigating the correlations between dimensions (full table included as Supplementary Material), we found a significant association between S and Dis (0.444). This link is consistent with the nature of two of their symptoms: (A) Somatoform dissociation is related to S [44] and is also a form of dissociative symptom, the hallmark of Dis [21]. (B) The symptom of alexithymia is correlated with S [16] and is also a Dis-symptom [45]. Such evidence leads us to hypothesize that the acquisition of S may—in some circumstances—instantiate a traumatic experience and the simultaneous acquisition of Dis.

Our binomial logistic regression models confirmed that Dis, P, S, and O were predictors of Dis-, P-, S-, and O-symptoms, respectively. Coherently with the small to moderate correlations between dimensions and symptoms and the multifactorial causality of psychological vulnerability, the models explained small to moderate percentages of the variance (11% to 30%). On the other hand, they provided good classification rates (64% to 82%).

It is also worth noting that we did not include 'sad mood' or 'feeling down' in the D-symptom group. Indeed, although such manifestations can be linked to the D-dimension, they are also common side effects of most attachment-related conditions. As a result, the list of symptoms concerning D was reduced in size, contributing to its exclusion from the statistical analysis.

Finally, the relevance of the possible connection—suggested by our pilot study—between high values of attachment dimensions and corresponding psychological vulnerabilities needs to be underlined. Should further testing confirm this hypothesis, new lines of research in attachment may arise and bring relevant clinical consequences. If measurable individual characteristics—acquired in attachment relationships—can be associated with vulnerabilities to developing specific psychological issues, then assessing attachment—with tools such as the ACQ—would lead to possible improvement in the prevention and treatment of those issues. On the other hand, our results are only preliminary, and the limitations of our study need to be emphasized.

Limitations and Future Work

We can identify the following issues that subsequent studies should address to extend the test of our hypotheses.

(1) First, our study was an explorative pilot on a small sample intended to be followed by one on a larger scale. This point is critical to ensure adequate statistical properties for all

attachment dimensions. For instance, in the case of D, the feasibility of the logistic binomial regression would have required 223 participants (cf. Section 2.4.2, Table 3). Therefore, we want to stress the preliminary nature of our results, which should encourage much deeper testing.

(2) The presented list of symptoms consisted of common clinical manifestations that did not necessarily match attachment-related issues. A more attachment-specific list could allow for clustering symptoms in groups that match dimensions more closely, allowing for a more reliable test of our hypotheses. In particular, some D-symptoms should be added if possible.

(3) Our sample was significantly unbalanced by gender (with a marked prevalence of female participants). Analyzing the possible effect of gender on the results was beyond the scope of our study, and future work should address this issue.

(4) As with gender, our study did not investigate the possible influence of therapy duration on results. This variable should also be considered in future studies.

(5) Finally, the ACQ is designed to be analyzed through an AI model [36,37]. However, given the considerable number of data to be collected, this model is yet to be built. Therefore, we could not double-check the expert scoring against the automatic one. Nonetheless, data collection is ongoing, and we will be able to overcome this limitation as soon as the model is realized.

5. Conclusions

Attachment to others shapes our relationships and lays the foundations of our socio-psychological knowledge. This information determines our early adaptation over several dimensions, but contextual changes can increase the risk of losing it and compromising our well-being. With this pilot study, we started exploring how this can occur. We investigated the relationship between attachment dimensions and corresponding symptomatology and the capability of a self-report—the ACQ—to measure them and detect vulnerability to psychological conditions. Our analysis confirmed that ACQ scores of Dis, P, S, and O correlate with the corresponding group of symptoms, thereby signaling specific vulnerabilities. Additional work is required to support these preliminary findings.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/psycholint6020034/s1, File S1: Attachment-Caregiving Questionnaire (ACQ); File S2: Data and details on computations.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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