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Social Self-Experience and Psychosis-Like Experiences in Emerging Adults: Evidence From Frequency and Distress-Weighted Models

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Abstract

Background: Psychosis-like experiences (PLEs) are subclinical phenomena situated along the psychosis continuum whose clinical significance depends not only on their occurrence but also on the distress they elicit. Phenomenological frameworks suggest that disturbances in self-experience may constitute a core dimension of vulnerability to PLEs. However, the relationship between social self-experience and different PLEs dimensions remains underexplored in non-clinical samples of emerging adults. This study examined whether dimensions of social self-experience predicted PLEs across positive, negative, and depressive dimensions, and whether these associations were moderated by sex or residential environment.

Methods: A cross-sectional online study was conducted with 700 non-clinical emerging adults aged 18–24 (50.00% women; 66.14% urban). PLEs were assessed with the Community Assessment of Psychic Experiences-42 (CAPE-42). Social self-experience was measured with the Experiencing of Self Scale (EOSS), which provides four subscales: General Self, Casual Relationships, Close Relationships, and Positive Self-Concept. Three parallel hierarchical regression analyses were conducted for each CAPE-42 dimension, entering sociodemographic covariates in Block 1, EOSS subscales in Block 2, and interaction terms in Block 3. All analyses used HC3 heteroscedasticity-consistent robust standard errors and were replicated using Ridge regression. All models were estimated using both CAPE-42 frequency scores and frequency-by-distress composite scores.

Results: EOSS subscales produced significant increments in explained variance for positive ($\triangle R^2 = 0.076$), negative ($\triangle R^2 = 0.065$), and depressive PLEs ($\triangle R^2 = 0.077$; all $p < 0.001$). Self-experience in casual social relationships was the most consistent predictor across all three dimensions in both frequency-based and frequency-by-distress models. Ridge regression corroborated these findings. No interaction with sex or residential environment reached significance in any model.

Conclusions: Difficulties in social self-experience show a small but consistent association with PLEs across positive, negative, and depressive dimensions in emerging adults, with casual interpersonal contexts emerging as a particularly sensitive domain. These associations persisted when distress weighting was incorporated. The absence of moderation by sex or residential environment points to the consistency of this association across subgroups.

Keywords

psychosis-like experiences; social self-experience; self-disturbance; emerging adults; distress; psychosis continuum

Introduction

Psychosis-like experiences (PLEs) are subclinical phenomena that resemble, in attenuated form, symptoms traditionally associated with psychotic disorders, including unusual perceptual experiences, suspiciousness, ideas of reference, social withdrawal, diminished motivation, and

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depressive affect [1,2]. Although they do not necessarily indicate the presence of a psychotic disorder, they are clinically relevant because they are understood as part of a continuum extending from ordinary experience to severe psychopathology [3]. PLEs may be transient and benign for some individuals, but threatening, disruptive, or personally significant for others [4]. The subjective distress associated with PLEs is therefore central to understanding when and how they acquire clinical significance [5,6]. Distinguishing between the occurrence of PLEs and their subjective impact may help clarify whether putative vulnerability processes are related merely to the presence of such experiences or also to the distress that makes them clinically meaningful [7,8], a distinction formalized by the "need for care" framework, in which distress—rather than occurrence alone—differentiates psychotic experiences requiring clinical attention from phenomenologically similar but benign experiences [9].

Phenomenological approaches extend this view, emphasizing that the clinical significance of psychotic phenomena depends on how they are lived and integrated by the person, rather than on their descriptive content alone [10–12]. From this perspective, disturbances in self-experience may constitute a core dimension of psychotic vulnerability, involving difficulties in maintaining a stable and continuous sense of self [13]. Social self-experience is conceptually distinct from phenomenological self-disturbance, which concerns pre-reflective anomalies in first-person perspective typically assessed through interview [14], denoting instead the degree to which self-referential behavior is shaped by private versus external control across interpersonal contexts [15]. It is further distinguishable from social functioning, a behavioral or role-based outcome, and from interpersonal sensitivity, a trait-like vulnerability to perceived rejection [16]. This social dimension is clinically relevant because many PLEs emerge in interpersonal contexts or acquire meaning through them [17]. Clarifying this may complement symptom-based approaches by supporting a more person-centered understanding of subclinical psychotic phenomena [18]. Although self-disturbances have been linked to psychopathological vulnerability in clinical and high-risk samples, their association with social self-experience in non-clinical emerging adults remains less clear [19]. This may be particularly important in emerging adulthood, a developmental stage, as conceptualized by Arnett, in which identity consolidation and social belonging place particular demands on the capacity to sustain a coherent sense of self [20].

This relationship may not be uniform across all dimensions of PLEs or across all social contexts. Positive PLEs may be especially sensitive to disruptions in the perceived relation between self and others, as reflected in suspiciousness, ideas of reference, or anomalous interpretations of social events [21,22]. Negative PLEs may instead be more closely related to withdrawal, diminished interpersonal engagement, or reduced motivation, whereas depressive experiences may involve low mood, self-doubt, hopelessness, and perceived disconnection [23,24]. Casual relationships—interactions with acquaintances or unfamiliar others, termed "weak ties"—may be a particularly informative domain, as they demand self-presentation without the trust and familiarity that buffer close relationships, heightening self-referential monitoring and social-threat appraisal [25]. At the same time, sex and residential environment may shape interpersonal exposure, social expectations, perceived support, vulnerability to distress, and the expression of PLEs [26]. However, findings regarding sex and rural/urban differences in PLEs are not entirely consistent [27–29]. Examining sex and residence alongside social self-experience may therefore help determine whether difficulties in sustaining a coherent sense of self in relation to others constitute a broad and contextually consistent correlate of PLEs. The relevance of this approach lies in the possibility that social self-experience may be associated with the subjective distress that renders PLEs personally and clinically significant.

Taken together, these considerations led us to examine whether self-experience in social situations is associated with PLEs in a non-clinical sample of emerging adults aged 18 to 24 years. Specifically, we tested whether dimensions of social self-experience were associated with positive, negative, and depressive PLEs, and the same analytic approach was then repeated using weighted frequency-by-distress scores to incorporate the subjective impact of these experiences. We further examined whether sex or rural/urban environment moderated these associations; given the inconsistency of prior findings, we treated this as an exploratory, open question rather than a confirmatory, directional hypothesis, anticipating that binary indicators might prove too coarse to capture the relevant psychosocial mechanisms. We hypothesized that greater disturbances in social self-experience would be associated with higher levels of PLEs across all dimensions, with social self-experience in casual relationships expected to show the strongest association.

Materials and Methods

Study Design and Participants

This was an observational cross-sectional study conducted through an online survey. Participants were re-

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cruited via Prolific and completed a survey administered through LimeSurvey between April and May 2026. Eligibility criteria, implemented through Prolific's prescreening filters applied prior to survey access, were: (1) fluency in English; (2) age between 18 and 24 years; and (3) no self-reported lifetime diagnosis of a mental disorder; no ineligible participants were therefore able to start the survey. Sex was balanced a priori through Prolific quota sampling (50% women), and participation was anonymous. All participants provided informed consent and received financial compensation in accordance with Prolific's payment policies. A total of 700 participants initially completed the survey through Prolific. Of these, 19 were excluded because they failed embedded attention-check items. Prolific subsequently supplied 19 additional eligible replacement participants to restore the pre-specified quota of valid cases. The final analytical sample therefore comprised 700 participants.

Measures and Variables

The online questionnaire, administered via LimeSurvey, comprised the following sections presented in fixed order: (1) an informed consent and eligibility confirmation screen; (2) sociodemographic items (age, sex, and residential environment); (3) the Community Assessment of Psychic Experiences-42 (CAPE-42); (4) and the Experiencing of Self Scale (EOSS). Four embedded attention-check items were used, two after CAPE-42 23rd item and 38 item, and two after EOSS 8th and 17th item (see "Study design and participants"). Both substantive instruments—the CAPE-42 and the EOSS—are previously validated, published measures rather than instruments developed for the present study. Their content, scoring, and psychometric properties are detailed below, with the corresponding validation references cited [30–32].

Sociodemographic and contextual variables included age, sex, and residential environment. Age was reported in years. Sex was self-reported as male/female. Residential environment was also self-reported. Participants were asked how they would describe the environment in which they lived and classified it as rural or urban.

PLEs were assessed using the English version of the CAPE-42 [31]. The CAPE-42 is a self-report questionnaire designed to assess PLEs in the general population. It provides three main indices: Positive, Negative, and Depressive experiences [32]. The CAPE-42 comprises 42 items distributed across the Positive (20 items), Negative (14 items), and Depressive (8 items) dimensions [30]. Each item is rated on two 4-point Likert scales assessing frequency (1 = never to 4 = nearly always) and associated distress (1 = not distressed to 4 = very distressed); frequency scores are summed within each dimension (possible range: 20–80 for Positive, 14–56 for Negative, and 8–32 for Depressive), and frequency-by-distress composite scores are computed as the mean of item-level frequency × distress products (possible range: 1–16). The Positive index captures unusual psychotic-like phenomena, including perceptual anomalies, bizarre experiences, suspiciousness, and delusional ideation. The Negative index assesses negative-like experiences, including social withdrawal, affective flattening, and avolition. The Depressive index captures depressive affect and related emotional experiences. For each item, participants report both the frequency of the experience and the distress associated with it. Higher scores indicate higher levels of PLEs or associated distress. Previous psychometric evidence supports the three-factor structure of the CAPE, consisting of Positive, Negative, and Depressive subscales, and has shown adequate internal consistency across these dimensions [31]. The English validation has reported Cronbach's alpha values of 0.83, 0.81, and 0.84 for the Positive, Negative, and Depressive dimensions, respectively [30].

Social self-experience was assessed using the English version of the EOSS [28,33]. The EOSS is a self-report measure developed with particular emphasis on the degree to which self-experience is shaped by public versus private sources of control. The scale assesses social self-experience across interpersonal contexts and provides four indices. The General Self index assesses difficulties in experiencing oneself as a stable and coherent person in general. The Casual Relationships index assesses the expression of needs, opinions, attitudes, and actions in interactions with acquaintances or other non-intimate contacts (e.g., classmates, coworkers, or new acquaintances); "casual" here denotes low relational familiarity rather than casual dating or sexual relationships. The Close Relationships index assesses similar aspects of self-experience in more intimate or close interpersonal relationships. The Positive Self-Concept index captures aspects related to spontaneity, creativity, dissociation, sensitivity to criticism, and positive self-experience. These indices reflect different interpersonal contexts in which the experience of self may become unstable, externally controlled, or difficult to sustain. The extended 37-item version of the EOSS was administered [34], with items rated on a 7-point Likert scale (1 = never to 7 = always) and scores summed within each subscale: General Self (7 items; possible range 7–49), Casual Relationships (10 items; possible range 10–70), Close Relationships (10 items: possible range 10–70), and Positive Self-Concept (10 items; possible range 10–70). The EOSS

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has shown high internal consistency in previous research, with Cronbach's alpha of 0.91 in the original English study and section-level alpha values of 0.87, 0.83, 0.93, and 0.88, as reported in the Spanish validation study [34].

Sample Size and Data Preparation

Sample size was determined a priori using G*Power 3.1 (Heinrich Heine University Düsseldorf, Düsseldorf, North Rhine-Westphalia, Germany) [35], based on the full Block 3–14 predictors comprising two sociodemographic covariates, four EOSS subscales, and eight EOSS × sex and EOSS × environment interaction terms—which is identical across the three parallel CAPE-42 dimension analyses. Using the F-tests family and the "Linear multiple regression: Fixed model, R^2 deviation from zero" test, with 14 tested predictors corresponding to the full Block 3 model (two sociodemographic covariates, four EOSS subscales, and eight interaction terms). We assumed a conservative small-to-medium effect size ($f^2 = 0.08$)—deliberately conservative relative to prior work reporting self-disturbance explaining approximately 43% of variance in psychotic-like experiences in a related non-clinical sample [36]—and specified $\alpha = 0.05$ and power $(1-\beta) = 0.90$, yielding a minimum required sample of N = 198. Because interaction terms are typically smaller in magnitude than main effects [37], the target sample was increased to N = 700 to ensure adequate power for detecting the Block 3 interaction terms specifically.

CAPE-42 frequency scores were computed according to the scoring procedures described in the manual. For each dimension, Positive, Negative, and Depressive, item frequency scores were summed to obtain the corresponding dimensional frequency score. Because occurrence and subjective distress capture related but conceptually distinct aspects of PLEs, the primary models were first estimated using frequency scores. The same analytic approach was then repeated using weighted frequency-by-distress scores to examine whether the pattern of findings was maintained when the subjective impact of these experiences was incorporated. Weighted scores were calculated at the item level by multiplying each item frequency score by its corresponding distress score. The mean of these item-level products was then computed separately for the Positive, Negative, and Depressive dimensions. Spearman correlations between frequency and frequency-by-distress composite scores for the same dimension were calculated to detect potential overlap between the two operationalizations.

Statistical Analyses

All statistical analyses were conducted in R (R version 4.5.2; R Foundation for Statistical Computing, Vienna, Austria). Prior to the main analyses, data were screened for missing values and distributional properties using Shapiro–Wilk tests, Breusch–Pagan tests, and visual inspection of Q-Q plots and residual plots. Descriptive statistics, including means, standard deviations, skewness, and kurtosis, were computed for all continuous variables. Sex and residential environment (rural vs. urban) were dummy-coded as binary variables, with 0 indicating the reference category, for inclusion in regression models. Bivariate associations among study variables were examined using Spearman rank-order correlation coefficients, given the marked positive skewness and floor effects observed in the three CAPE-42 frequency dimensions.

To examine the associations between social self-experience and PLEs, three parallel hierarchical multiple regression analyses were conducted, one for each CAPE-42 frequency dimension: Positive, Negative, and Depressive. In each model, sociodemographic variables, sex and residential environment, were entered in Block 1 as covariates; the four EOSS subscales were entered in Block 2 as primary predictors; and eight interaction terms, each EOSS subscale × sex and each EOSS subscale × residential environment, were entered in Block 3 as an exploratory analysis, consistent with recommendations for explicitly distinguishing confirmatory from exploratory components when analyzing a single dataset [38]. Age was not included among the Block 1 covariates given the restricted range imposed by the eligibility criteria (18–24 years; SD = 1.74) [39]. A sensitivity analysis with age added to Block 1 is reported in the Results and in **Supplementary Table 8**. All EOSS subscales were mean-centered before computing interaction terms to reduce multicollinearity. Model fit was evaluated using R^2 and adjusted R^2, and incremental variance explained at each step was indexed using $\triangle R^2$.

To incorporate the subjective impact of PLEs, the same hierarchical modelling strategy was repeated using CAPE-42 frequency-by-distress composite scores as dependent variables. These models were considered complementary to the frequency-based analyses because they integrate the occurrence of PLEs with the distress associated with them. Convergence between frequency-based and frequency-by-distress models was interpreted as evidence that associations were not limited to the occurrence of PLEs but also extended to experiences with greater subjective impact.

Inferential robustness was addressed in two comple-

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mentary steps. First, all hierarchical regression coefficients, standard errors, and model comparisons were estimated using HC3 heteroscedasticity-consistent robust standard errors [40], implemented via the *sandwich* and *lmtest* packages; model comparisons across blocks were conducted using robust Wald F-tests, and effect sizes were quantified using Cohen's f^2 [41]. Second, all models were replicated in parallel using Ridge regression with L2 penalization [42] (*glmnet* package), with the regularization parameter selected independently for each model through 10-fold cross-validation. Ridge regression served as a sensitivity analysis to corroborate the primary HC3-based ordinary least squares (OLS) findings, rather than as an independent confirmatory test. Inferential uncertainty was quantified using 500-resample percentile bootstrap 95% confidence intervals (CIs), with intervals excluding zero interpreted as evidence of a reliable association. As ridge coefficients are L2-penalised, only their direction and relative pattern were compared with the HC3 estimates. No formal family-wise correction was applied to the EOSS coefficients, as each subscale was evaluated as an individually pre-specified hypothesis rather than as a joint test of a shared null, a distinction under which alpha adjustment is not statistically required [43,44]. Given the number of tests conducted, findings at or near conventional significance thresholds should nonetheless be interpreted with corresponding caution; the converging Ridge regression bootstrap intervals, which are not subject to the same multiplicity concerns, provide additional support specifically for the robustness of the Casual Relationships finding. The level of statistical significance was set at 5%.

Results

Preliminary Analyses

The final analytical sample comprised 700 non-clinical emerging adults (350 women, 350 men). Of these, 463 participants (66.14%) reported living in an urban environment and 237 (33.86%) in a rural environment. Descriptive statistics for all continuous variables are presented in Table 1. EOSS subscale scores were approximately normally distributed, with skewness and excess kurtosis values within acceptable ranges. In contrast, all three CAPE-42 frequency dimensions and their corresponding frequency-by-distress composites showed pronounced positive skewness and marked excess kurtosis (skewness range: 4.69–7.46; excess kurtosis range: 34.30–71.95), consistent with expected floor effects in non-clinical samples.

Preliminary assumption testing revealed systematic violations of residual normality (Shapiro–Wilk W $<$ 0.65, $p < 0.001$, across all models) and homoscedasticity (Breusch–Pagan $p < 0.001$, across all models). HC3 heteroscedasticity-consistent robust standard errors were therefore applied throughout. Variance inflation factors in Block 3 ranged from 7.92 to 11.90 across EOSS subscales, with EOSS General Self (VIF = 10.89) and EOSS Positive Self-Concept (VIF = 11.90) marginally exceeding the commonly cited threshold of 10, reflecting the moderate-to-high inter-subscale correlations observed (Spearman ρ = 0.424–0.703). This multicollinearity was addressed through parallel Ridge regression analyses.

Bivariate Associations

Frequency and frequency-by-distress composite scores were strongly correlated for Positive and Negative PLEs (Spearman ρ = 0.859 and 0.872, respectively) and more moderately correlated for Depressive PLEs (ρ = 0.574; all $p < 0.001$). All four EOSS subscales were significantly and positively associated with each of the three CAPE-42 dimensions (all $p < 0.001$), with coefficients ranging from ρ = 0.135 (EOSS Positive Self-Concept with negative PLEs) to ρ = 0.332 (EOSS Close Relationships with positive PLEs). The three CAPE-42 frequency dimensions were substantially intercorrelated (ρ = 0.428–0.718), and EOSS subscales were moderately to highly intercorrelated with one another (ρ = 0.424–0.703). Spearman rank-order correlations among EOSS subscales and CAPE-42 frequency scores are presented in **Supplementary Table 1**.

Hierarchical Regression: Frequency Scores

Sex and residential environment (Block 1) accounted for negligible variance in all three outcomes (R^2 = 0.002–0.010, $f^2 < 0.02$), and neither predictor reached conventional significance in any model. The addition of the four EOSS subscales in Block 2 produced a statistically significant increment in explained variance across all three dimensions, as indicated by robust Wald F-tests: Positive PLEs ($\triangle R^2$ = 0.076, F[4, 693] = 8.997, $p < 0.001$, f^2 = 0.086), Negative PLEs ($\triangle R^2$ = 0.065, F[4, 693] = 10.391, $p < 0.001$, $f^2 = 0.081$), and Depressive PLEs ($\triangle R^2 = 0.077$, F[4, 693] = 5.481, $p < 0.001$, $f^2 = 0.089$). Effect sizes were in the small range per Cohen's benchmarks in all cases.

Examining individual predictor coefficients in Block 2, EOSS Casual Relationships was the most consistent predictor across dimensions, reaching significance for Positive PLEs (B = 0.036, HC3 SE = 0.010, $p < 0.001$) and Negative PLEs (B = 0.017, HC3 SE = 0.008, p = 0.041), and

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Table 1. Descriptive statistics of continuous variables.

Measure	Mean	SD	Skewness	Kurtosis
Age	20.44	1.74	0.415	−0.79
EOSS				
General Self	26.2	6.18	0.3	0.46
Casual Relationships	27.03	12.68	0.79	0.11
Close Relationship	33	14.06	0.38	−0.57
Positive Self-Concept	34.94	9.13	0.38	0.7
CAPE-42 (Frequency)				
Positive	21.06	2.72	6.41	54.19
Negative	14.79	1.96	4.69	34.3
Depressive	9.32	1.27	5.51	44.99
CAPE-42 (Frequency × Distress)				
Positive	1.18	0.54	7.46	71.95
Negative	1.2	0.57	5.25	39.33
Depressive	1.44	0.69	6.73	68.22

Note. SD, standard deviation; EOSS, Experiencing of Self Scale; CAPE-42, Community Assessment of Psychic Experiences-42.

showing a trend for Depressive PLEs ($B = 0.009$, HC3 $SE = 0.005$, $p = 0.061$). EOSS Close Relationships additionally predicted Negative PLEs ($B = 0.019$, HC3 $SE = 0.008$, $p = 0.015$). EOSS General Self and EOSS Positive Self-Concept did not reach significance in any frequency-based model. Fig. 1 displays cumulative R^2 by predictor block.

The addition of eight interaction terms in Block 3 did not produce a statistically significant increment in explained variance for any outcome (Positive PLEs: $F[8, 685] = 0.264$, $p = 0.977$; Negative PLEs: $F[8, 685] = 0.515$, $p = 0.846$; Depressive PLEs: $F[8, 685] = 0.568$, $p = 0.804$), and no individual interaction term reached significance. The association of EOSS Casual Relationships with positive and negative PLEs was preserved in the full Block 3 model (Positive: $B = 0.041$, $p = 0.036$; Negative: $B = 0.032$, $p = 0.041$). Detailed information covering HC3 Hierarchical Regression each CAPE-42 dimension is provided in **Supplementary Tables 2−4**. Fig. 2 displays the EOSS subscales unstandardized OLS coefficients with 95% HC3−robust CIs.

Hierarchical Regression: Frequency-by-Distress Scores

The same hierarchical modelling strategy was repeated using frequency-by-distress composite scores to examine whether associations extended to PLEs with greater subjective impact. Block 1 again accounted for negligible variance across all three outcomes ($R^2 = 0.002$–0.007, $f^2 < 0.02$). The EOSS subscales in Block 2 produced significant incremental variance for Positive PLEs ($\triangle R^2 = 0.069$, $F[4, 693] = 6.852$, $p < 0.001$, $f^2 = 0.077$), Negative PLEs ($\triangle R^2 = 0.060$, $F[4, 693] = 8.246$, $p < 0.001$, $f^2 = 0.072$), and Depressive PLEs ($\triangle R^2 = 0.083$, $F[4, 693] = 5.854$, $p < 0.001$, $f^2 = 0.099$), with effect sizes again in the small range.

EOSS Casual Relationships remained the sole consistent predictor across all three dimensions: Positive PLEs ($B = 0.006$, HC3 $SE = 0.002$, $p = 0.002$), Negative PLEs ($B = 0.006$, HC3 $SE = 0.002$, $p = 0.004$), and Depressive PLEs ($B = 0.006$, HC3 $SE = 0.003$, $p = 0.021$). EOSS Close Relationships showed a marginal trend for Negative PLEs ($B = 0.004$, HC3 $SE = 0.002$, $p = 0.056$). No interaction term reached significance in Block 3 across any of the three models (all robust Wald $Fs < 0.64$, all $ps > 0.75$), indicating that the associations between social self-experience and PLEs were not moderated by sex or residential environment when distress was incorporated into the outcome. Detailed information covering HC3 Hierarchical Regression for frequency × distress weighted scores on each CAPE-42 dimension is provided in **Supplementary Tables 5−7**. Fig. 2 displays the EOSS subscales unstandardized OLS coefficients with 95% HC3−robust CIs.

Parallel Ridge Regression Analyses

For frequency-based outcomes, EOSS Casual Relationships produced bootstrap CIs excluding zero for Positive PLEs (95% CI [0.005, 0.056]), Negative PLEs (95% CI [0.004, 0.040]) and Depressive PLEs (95% CI [0.002, 0.025]); also, EOSS General Self showed a reliable association for Positive PLEs (95% CI [0.003, 0.227]), Negative PLEs (95% CI [0.001, 0.149]) and Depressive PLEs (95% CI [0.001, 0.077]). For frequency-by-distress out-

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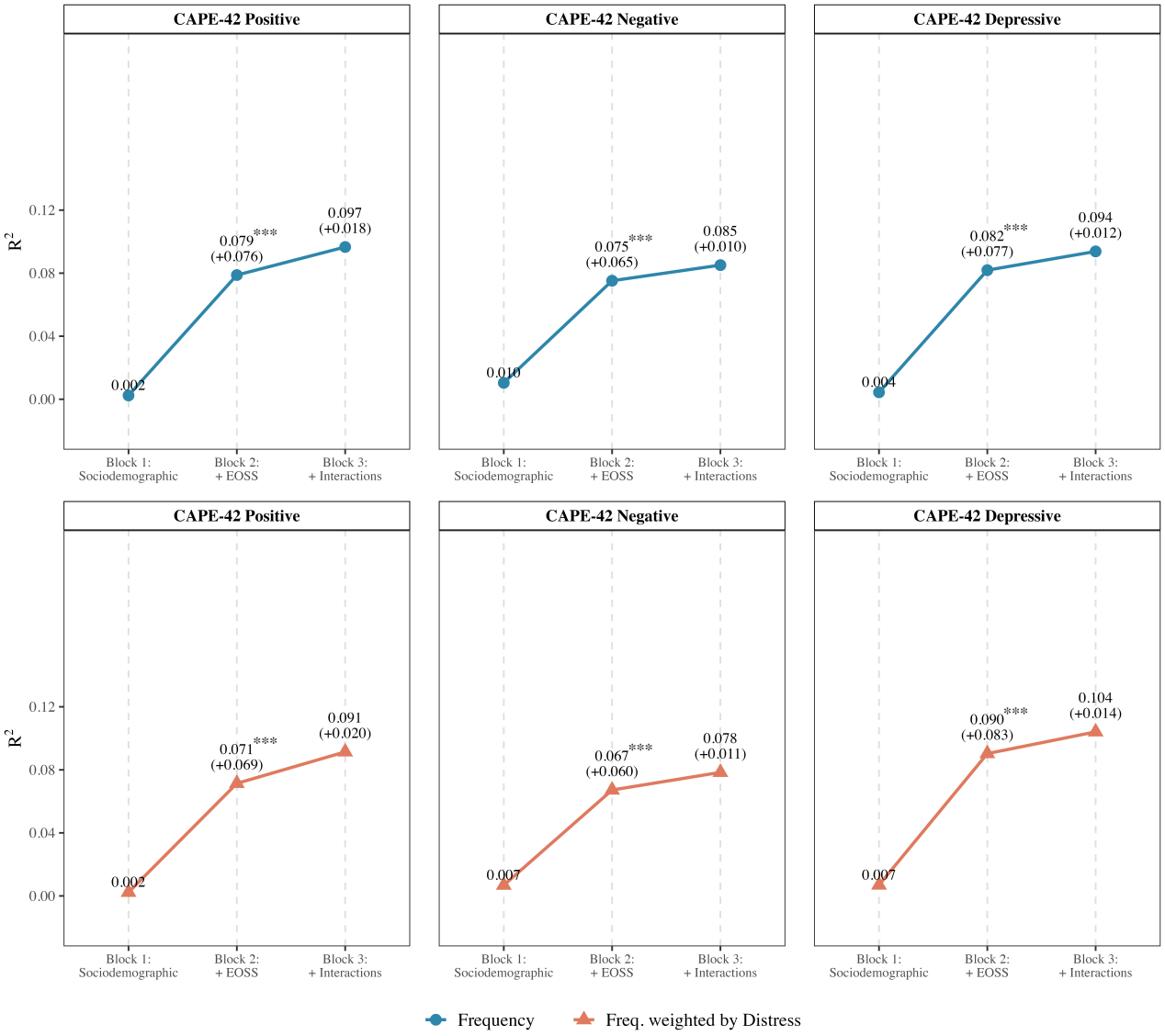


Fig. 1. Cumulative R^2 by predictor block. Note. R^2 from HC3-robust OLS hierarchical regression. Block 1 = Sex + Residential environment; Block 2 = + EOSS subscales; Block 3 = + Interaction terms. Frequency = CAPE-42 frequency sum scores; Frequency and Distress weighted = frequency-by-distress weighted composite. EOSS, Experiencing of Self Scale. N = 700. ***, statistically significant $\triangle R^2$ relative to the previous block (robust Wald F-test, $p < 0.001$).

comes, EOSS General Self (95% CI [0.001, 0.047]) and EOSS Casual Relationships (95% CI [0.001, 0.011]) both excluded zero for Positive PLEs, and EOSS Casual Relationships did so for Negative (95% CI [0.001, 0.011]) and Depressive PLEs (95% CI [0.001, 0.017]). No interaction term exceeded this threshold in any model. Ridge R^2 values for Block 2 ranged from 0.062 to 0.088 across outcomes and operationalizations, consistent with the OLS estimates, and the addition of interaction terms in Block 3 did not improve model fit ($\triangle R^2 \leq 0.001$ in all cases), confirming the absence of moderation. Overall, Ridge results converged with the HC3 findings across both operationalizations. Detailed data about Ridge Regression coefficients are shown in Table 2.

Given the restricted age range imposed by the eligibility criteria, age was not included among the Block 1 covariates in the primary models (see Statistical analyses). A sensitivity analysis adding age to Block 1 across all six models (**Supplementary Table 8**) showed that age was significantly and positively associated with PLEs in every model (all $p < 0.001$), and that the EOSS Block 2 and 3 increment

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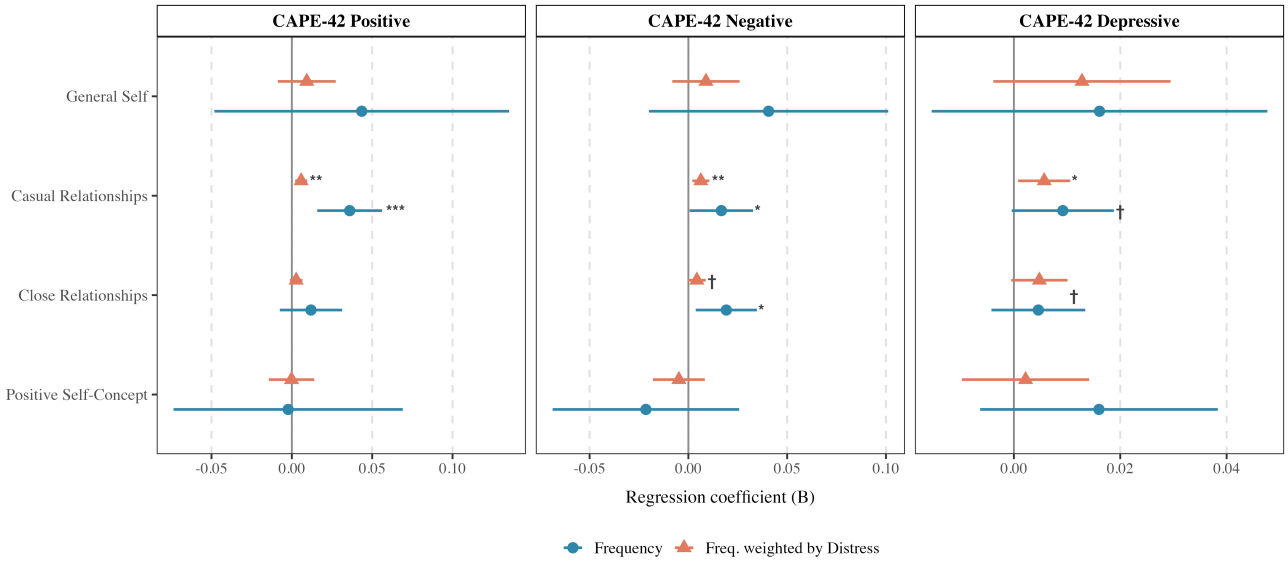


Fig. 2. EOSS subscale associations with PLEs (Block 2). Note. Unstandardized OLS coefficients with 95% HC3−robust confidence intervals ($^{\dagger}p < 0.10$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$). Because the four EOSS subscales differ in item count and response range, unstandardized coefficients are not directly comparable in magnitude across subscales; comparisons should be limited to statistical significance and direction, not effect size.

Table 2. Ridge regression coefficients and 95% bootstrap CIs for Block 2 main effects.

Predictor	CAPE-42 Frequency		CAPE-42 Frequency × Distress	
	Ridge B	95% Bootstrap CI (LLCI–ULCI)	Ridge B	95% Bootstrap CI (LLCI–ULCI)
Positive PLEs				
Sex	–0.025	–0.123–0.043	–0.008	–0.075–0.029
Environment (Urban)	0.042	–0.068–0.159	0.009	–0.051–0.067
EOSS General Self	0.009	0.003–0.227*	0.003	0.001–0.047*
EOSS Casual Relationship	0.007	0.005–0.056*	0.002	0.001–0.011*
EOSS Close Relationship	0.003	–0.015–0.022	0.001	–0.003–0.004
EOSS Positive Self-concept	0.006	–0.018–0.027	0.001	–0.028–0.008
Negative PLEs				
Sex	–0.062	–0.209–0.027	–0.024	–0.107–0.011
Environment (Urban)	0.045	–0.077–0.217	0.021	–0.030–0.101
EOSS General Self	0.009	0.001–0.149*	0.003	–0.001–0.042
EOSS Casual Relationship	0.004	0.004–0.040*	0.002	0.001–0.011*
EOSS Close Relationship	0.003	–0.006–0.020	0.002	–0.002–0.005
EOSS Positive Self-concept	0.006	–0.01–0.016	0.001	–0.027–0.006
Depressive PLEs				
Sex	0.035	–0.053–0.221	–0.023	–0.113–0.029
Environment (Urban)	0.045	–0.077–0.217	0.034	–0.040–0.121
EOSS General Self	0.009	0.001–0.077*	0.006	0.002–0.050*
EOSS Casual Relationship	0.004	0.002–0.025*	0.003	0.001–0.017*
EOSS Close Relationship	0.003	–0.009–0.009	0.002	–0.003–0.006
EOSS Positive Self-concept	0.006	–0.018–0.027	0.003	–0.015–0.011

Note. B, unstandardized Ridge regression coefficient; CI, confidence interval; LLCI, lower limit of the confidence interval; ULCI, upper limit of the confidence interval; EOSS, Experiencing of Self Scale; CAPE-42, Community Assessment of Psychic Experiences-42; PLEs, psychosis-like experiences. *Highlights confidence intervals not including zero (analogous to $p < 0.05$).

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remained significant throughout ($\triangle R^2$ = 0.054–0.074, all $p \leq 0.001$).

Discussion

The present study set out to determine whether difficulties in sustaining a sense of self across interpersonal contexts were associated with PLEs in non-clinical emerging adults, and whether this association varied by sex or residential environment. The answer to the first question was consistent and unambiguous: disturbances in social self-experience predicted PLEs across positive, negative, and depressive dimensions, with self-experience in casual social relationships emerging as the most robust predictor across both frequency-based and frequency-by-distress operationalizations, and across ordinary least squares and Ridge regression analyses. Although consistently small in magnitude by conventional benchmarks, effects of this size are not without practical import for a single predictor domain among the many plausible contributors to PLEs [45]. However, given the cross-sectional design, these findings should be understood as evidence of statistical association rather than temporal or causal precedence. The answer to the second question was equally clear, if less expected: neither sex nor rural/urban environment moderated any of these associations. What requires interpretation is not only what was found, but what the pattern of findings implies about the nature of the relationship between social selfhood and subclinical psychosis.

Our results extend phenomenological accounts in which disturbances of the minimal self constitute a core dimension of vulnerability across the psychosis continuum [46,47], but they do so in a direction that existing evidence has not fully explored. Prior work on self-disorders has predominantly relied on interview-based instruments in clinical or at-risk samples, and has focused primarily on the presence of anomalous self-experiences rather than on the interpersonal contexts in which they arise and are sustained [18]. By employing a measure that indexes how self-experience shifts across relational contexts—from general self-coherence to casual and close interpersonal settings—the present study treats the social environment not as background noise but as an active constituent of self-experience. The fact that these associations held when PLEs were weighted by distress should be interpreted cautiously, as frequency and distress are related but empirically dissociable dimensions of PLEs, with combined indices not consistently outperforming frequency alone [48,49]. This caution is reinforced by the correlation between the two operationalizations in the present sample. Even so, frequency alone left 24–26% of the composite's variance unexplained for the former two dimensions, and left the majority of its variance unexplained for the latter—a dimension-dependent gradient inconsistent with the composite functioning as a near-mechanical restatement of frequency. We interpret convergent findings across the two operationalizations, together with this partial independence, as consistent with the "need for care" framework, in which distress specifically—rather than occurrence alone—indexes the subjective impact that renders an experience more clinically significant [9,50].

The transdiagnostic pattern of associations—equally present across positive, negative, and depressive dimensions—deserves particular attention, because it does not follow straightforwardly from the available literature. The association with positive PLEs is theoretically coherent: interpersonal self-perception is central to the emergence of paranoia and ideas of reference, and considerable prior work links social threat appraisals to positive psychotic phenomena [51,52]. We note, however, that CAPE-42 Positive items assessing suspiciousness and ideas of reference share conceptual content with EOSS Casual Relationships, raising the possibility of item-level overlap rather than a purely distinct predictive relationship [53]. This concern applies less readily to the equivalent associations with negative and depressive dimensions, which share no comparable item content and are harder to anticipate from a domain-specific model, arguing against a purely content-driven explanation for the overall pattern. A more parsimonious interpretation, supported by evidence from clinical and at-risk populations [54], is that social self-experience operates at a level of generality that cuts across dimensional distinctions—a person-level process associated with positive, negative, and depressive phenomena alike, rather than a specific vulnerability for any one of them [15]. If correct, this would reframe the EOSS not merely as a measure of interpersonal functioning, but as an index of a more fundamental disruption in the relational fabric through which a coherent sense of self is maintained.

Within this broader picture, the specificity of casual relationships as the most consistent predictor warrants explanation. Casual relationships are structurally distinctive: they demand social self-presentation and the expression of preferences and opinions without the scaffolding of familiarity or established trust, placing the individual in a position of evaluative exposure without the mutual predictability that characterizes close relationships. It is precisely this combination—social demand without relational security—that may render casual interactions a particularly sensitive diagnostic context for disruptions in self-experience, a suggestion consistent with experience-sampling evidence showing heightened anomalous self-experiences when in-

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dividuals are outside the home and with non-intimate others [13]. For emerging adults navigating new educational and social environments, this interpersonal space may be especially consequential: identity consolidation and a sense of belonging during this developmental period depend substantially on the capacity to sustain a coherent self-presentation in exactly these low-intimacy, high-exposure encounters [55]. The association between the General Self subscale and positive PLEs further suggests that the role of casual relationships reflects the most contextually sensitive expression of a broader disturbance, rather than an isolated effect.

The persistent null finding for EOSS Positive Self-Concept, by contrast, warrants separate consideration given its theoretical centrality to the self-experience framework. Although this subscale showed the highest variance inflation factor among the four EOSS subscales, a purely collinearity-driven account is not fully supported: unlike EOSS General Self, whose Ridge regression bootstrap intervals excluded zero in five of the six models despite null OLS estimates, Positive Self-Concept failed to show a reliable association in either framework across all six models. Nor does the subscale's reported internal consistency support a straightforward reliability-based account, given an alpha of 0.88 in prior validation work [34] —comparable to, or higher than, several other EOSS subscales. We therefore favor a construct-heterogeneity account: the subscale spans potentially counteracting facets—spontaneity and creativity on one hand, dissociation and sensitivity to criticism on the other [53]—that may exert opposing associations with PLEs and cancel out at the subscale level. Restricted variance offers a less compelling explanation in this sample, as skewness and kurtosis for this subscale did not differ meaningfully from those of EOSS General Self.

The absence of moderation by sex or residential environment should be interpreted cautiously rather than as definitive evidence against moderation due interaction effects are notoriously difficult to detect reliably even in adequately powered studies, and binary moderators further attenuate power relative to continuous measurement [56]. We nonetheless favor a measurement-based interpretation, as binary sociodemographic indicators are too coarse to capture the psychosocial mechanisms through which sex and place become meaningful [27], and, as Kirkbride [57] noted, urban–rural gradients only crudely capture the social processes underlying variation in psychosis risk, including inclusion, belonging, and social identity.

The present study has additional limitations that deserve mention. Self-report assessment may inflate associations through shared method variance; the cross-sectional design cannot disentangle whether disrupted social self-experience amplifies the subjective impact of PLEs, whether distressing PLEs erode the capacity for stable self-experience in social contexts, or whether both reflect a common underlying vulnerability [58]. In addition, the moderate-to-high inter-subscale correlations reduced the precision of individual coefficient estimates for EOSS General Self and EOSS Positive Self-Concept specifically; although Ridge regression mitigated this, their null findings cannot be fully disentangled from potential suppression effects. Longitudinal and experience-sampling designs incorporating candidate correlates such as trauma, cognitive biases, and sleep quality [26,54,59] are better positioned to trace these pathways in real time [55]. Finally, it is important to point out that recruitment via Prolific, though yielding good data quality [60], constitutes a non-representative, self-selected panel [61], constraining generalizability rather than biasing the association under study. Within these constraints, the contribution of the present study lies in demonstrating, in a large sex-balanced non-clinical sample with adequate power for moderation testing and robust analytical safeguards, that social self-experience is a consistent, cross-dimensional, and distress-linked correlate of PLEs in emerging adulthood—one whose significance for person-centered approaches to subclinical psychopathology [62,63] may extend well beyond the specific instruments used here.

Conclusions

The present study shows that difficulties in social self-experience are associated with positive, negative, and depressive PLEs in non-clinical emerging adults. This association was consistent across two independent analytical strategies and, more notably, persisted under distress-weighting, and was not moderated by sex or residential environment. Self-experience in casual social relationships emerged as the most consistent correlate, suggesting that everyday interactions with less familiar others may be a particularly sensitive context in which disruptions of social self-experience and psychosis-like phenomena intersect. These findings support a socially embedded, person centered understanding of subclinical phenomena.

Availability of Data and Materials

Data related to this study can be obtained from the corresponding author upon reasonable request.

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Author Contributions

EL-N conceived and designed the study, developed the theoretical framework, planned the statistical analyses, and wrote the first draft of the manuscript. EL-N, CN-G, MR-P, and JMG-M interpreted the results. JMG-M contributed to the development of the first draft and critically revised the manuscript for important intellectual content. CN-G contributed to the first draft, project administration, funding management, and theoretical discussion. MR-P contributed to theoretical discussion related to the study. All authors contributed to reviewing and editing the manuscript, approved the final version to be published, and agree to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the University of Balearic Islands Research Ethics Committee (047CER_089/2026). Informed consent was electronically obtained from all participants.

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Conflict of Interest

The authors declare no conflict of interest.

Supplementary Material

Supplementary material associated with this article can be found, in the online version, at https://doi.org/10.62641/aep.2350.

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