Image 1:

Study	AI Intervention Type	Population Intervention/Control	Target Outcome	Duration	Measurement Tools	Statistical Significance
Akdoğan et al., 2025	ChaGPT-based digital counseling	Chemotherapy-naive cancer patients 75/75	Anxiety, depression	Duration not specified; T0 (baseline), T1 (before 2nd chemotherapy), T2 (follow-up)	Hospital Anxiety and Depression Scale (HADS)	A significant reduction was observed (anxiety: p = 0.002; depression: p < 0.001).
Jiang et al., 2023	AI-driven mobile app (WeChat Mini Program)	Young breast cancer survivors (18-45 years, stage II/III) 60/55	Psychological symptoms, self-efficacy, social support	3-month intervention assessments at T0 (baseline), T1 (1 month), T2 (3 months)	Memorial Symptom Assessment Scale-Short Form (MSAS-SF), Cancer Behavior Inventory-Brief Version (CBI-B), Social Support Rating Scale (SSRS), Functional Assessment of Cancer Therapy-Breast (FACT-B)	Significant improvements were observed in symptoms and self-efficacy (p < .001) and social support (p = .002)
Kamdar et al., 2024	ePAL AI pain app	Metastatic solid-organ cancer patients 56/56	Pain severity, attitudes	8-week intervention: T0 (baseline), T1 (4 weeks), T2 (8 weeks)	Brief Pain Inventory (BPI) Short Form Composite Severity Score, Barriers Questionnaire-II (BQ-II), Generalized Anxiety Disorder (GAD-7), Functional Assessment of Cancer Therapy (FACT-G), Patient Health Questionnaire-8 (PHQ-8)	App use reduced pain severity (p = .034) and negative attitudes toward pain treatment (p = .042), but increased anxiety (p = .015)
Lee et al., 2024	Chatbot+video	Breast cancer patients 73/72	Anxiety	Duration not specified; T0 (initial visit), T1 (pre-radiation therapy), T2 (post-radiation therapy); duration varied by treatment course	Amsterdam Pre-operative Anxiety and Information Scale (APAIS), Korean Short Form of the State-Trait Anxiety Inventory (STAI), Linear Analog Scale Assessment (LASA)	No overall significant effect was observed; however, a favorable trend was noted among patients aged ≤50 years.
Schmitz et al., 2023	Nurse AMIE virtual assistant (Alexa/Echo Show)	Metastatic breast cancer 21/21	Distress, quality of life, fatigue	6-month intervention; Immediate: 6 mo Nurse AMIE; Delayed: 3 mo usual care + 3 mo Nurse AMIE; data at T0 (baseline), T1 (3 mo)	SF-36 Quality of Life Survey, Brief Pain Inventory, SF-36 Pain Subscale, Sleep Disturbance Scale, SF-36 Vitality Subscale, Distress Thermometer	The intervention did not produce significant effects.
Shaban et al., 2025	AI-powered chatbot	Breast cancer patients 61/61	Knowledge, empowerment, attitude	Duration not specified; chatbot used continuously; data at T0-T2	Knowledge Assessment, AI Support and Empowerment, Likert Scale for Attitude Towards AI	The intervention improved knowledge (p < .001), attitudes (p < .001), and engagement
Springer et al., 2023	Mika app-based digital therapeutic	All tumor types 99/119	Distress	12-week intervention/follow-up; data at T0 (baseline), T1 (2 wk), T2 (6 wk), T3 (12 wk)	National Comprehensive Cancer Network (NCCN) Distress Thermometer, Hospital Anxiety and Depression Scale (HADS), Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F), Clinical Global Impression-Improvement Scale (CGI-I)	The intervention group showed significant reductions in distress (p = .03), depression (p < .001), anxiety (p = .03), and fatigue (p = .04).

Conclusions: RCT evidence indicates that AI-based interventions can effectively reduce psychosocial distress and related symptoms in cancer patients, while enhancing empowerment and self-management. Despite mixed effects on quality of life, consistent psychological and symptomatic benefits highlight their potential as valuable adjuncts to oncology care. Further large-scale, culturally diverse, and long-term trials are needed to confirm generalizability and sustainability.

Disclosure of Interest: None Declared

Comorbidity/Dual Pathologies

O046

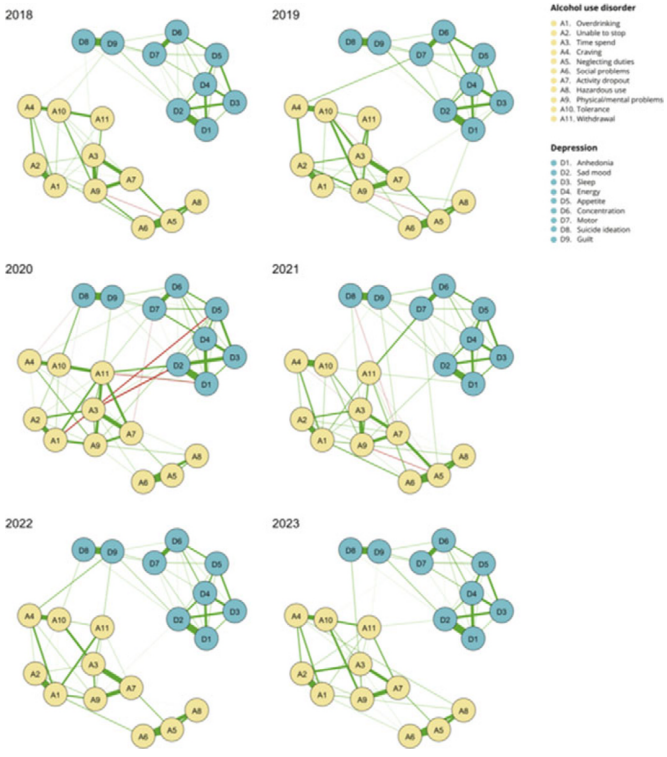
Network Analysis as a Tool to Understand Comorbidity Over Time

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Introduction: Network analysis provides a methodological alternative to traditional latent variable approaches by conceptualizing psychiatric disorders as systems of interacting symptoms. While cross-sectional network studies map comorbidity at a single point in time, repeated measures are needed to understand how these structures evolve. Longitudinal and repeated cross-sectional designs offer distinct strategies: the former tracks intra-individual symptom dynamics, while the latter captures population-level changes across independent samples. Methodological guidance on how to apply network analysis to comorbidity over time remains scarce, despite increasing demand to study the impact of contextual factors such as pandemics or socioeconomic stressors.
Objectives: Demonstrate methodological strategies for applying network analysis to the study of comorbidities across time, and to illustrate their application with a repeated cross-sectional analysis of depressive symptoms and alcohol use disorder.
Methods: We outline a stepwise framework for temporal network studies of comorbidity. Key stages include: (1) design selection (cross-sectional, repeated cross-sectional, longitudinal), (2) consistent measurement of symptom sets across time, (3) network estimation using regularized models, (4) evaluation of central and bridge symptoms with indices tailored to cross-disorder connectivity, (5) assessment of accuracy and stability via bootstrapping, and (6) network comparison across time points with formal tests of structural invariance. As an applied example, we employed a repeated cross-sectional study using Peruvian survey data on depressive symptoms and alcohol use disorder between 2018 and 2023, with more than 30,000 cases in each year.
Results: he framework enabled detection of stable within-disorder symptom clusters and identification of bridge nodes linking depression and alcohol use. In Peru, worthlessness and guilt consistently emerged as central depressive connectors, while withdrawal acted as a key alcohol-related bridge. Cross-disorder associations intensified in 2020 during the COVID-19 pandemic, illustrating how external stressors can reshape comorbidity structures. Formal comparison confirmed overall invariance across years, highlighting both the sensitivity of the approach and the boundaries of repeated cross-sectional designs.

Image 1:



Conclusions: The methodological guide demonstrates how temporal network analysis supports identification of core and bridge symptoms in comorbidity. Repeated cross-sectional designs capture population-level responses to contextual stressors, while maintaining feasibility at scale. This approach equips researchers with a practical roadmap to design, estimate, and interpret comorbidity networks across time, offering actionable insights for clinical and public health interventions.

Disclosure of Interest: None Declared

Consultation Liaison Psychiatry and Psychosomatics

O047

Inflammatory and Functional Correlates of Depression in Chronic Heart Failure: A Cross-Sectional Study

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Introduction: Depression is prevalent among patients with chronic heart failure (CHF) and is associated with increased morbidity, hospitalization, and reduced quality of life. Inflammation and neurohormonal dysregulation are hypothesized to underlie this association. However, few studies have evaluated depressive symptoms in CHF patients in relation to proinflammatory cytokines, natriuretic peptides, and functional status.
Objectives: To assess the relationship between depressive symptoms and levels of TNF-α, NT-proBNP, and clinical variables including anxiety and quality of life among patients with CHF.
Methods: A total of 120 patients diagnosed with CHF (NYHA II–III) were recruited. Depression was assessed using the Beck Depression Inventory (BDI), and anxiety with the Generalized Anxiety Disorder scale (GAD-7). Quality of life was evaluated using EQ-5D. Serum levels of TNF-α and NT-proBNP were measured by ELISA method. Echocardiographic parameters, demographic variables (age, sex), and lipid profiles were recorded. Correlation and subgroup analyses were conducted to assess associations between biomarker levels and psychological/clinical outcomes.
Results: Depressive symptoms (BDI ≥14) were present in 66.7% of patients. Higher depression scores correlated significantly with elevated TNF-α ($r = 0.48$, $p < 0.01$), NT-proBNP ($r = 0.42$, $p < 0.01$), and anxiety levels (GAD-7, $r = 0.61$, $p < 0.001$). Patients with depression also reported significantly lower EQ-5D index scores (mean 0.56 vs. 0.74, $p < 0.001$). Women reported higher depressive and anxiety scores than men ($p < 0.05$), while older patients (>65) showed stronger correlations between NT-proBNP and emotional distress. No significant correlation was observed between lipid levels and depressive symptoms.
Conclusions: Depression in CHF patients is significantly associated with elevated inflammatory and neurohormonal markers, as well as anxiety and reduced quality of life. These findings underscore the importance of psychosomatic assessment in CHF management. Future research should explore integrated treatment strategies targeting both physiological and psychological domains.

Disclosure of Interest: None Declared

Schizophrenia and Other Psychotic Disorders

O048

Comorbid Substance Use in Schizophrenia: Multivariate Insight into Symptoms, Functioning, and Premorbid Adjustment

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Introduction: Substance use disorder (SUD) is highly prevalent in individuals with schizophrenia, with a lifetime prevalence of around 40%, and is consistently associated with poor outcomes. However, prior studies have yielded inconsistent results regarding its associations with negative symptoms, cognition, and functioning. The present study adopted a multivariate approach to delineate the clinical and functional profile of patients with schizophrenia and comorbid SUD.
Objectives: We aimed to identify sociodemographic, clinical, premorbid, cognitive, functional, and coping dimensions associated with SUD in schizophrenia, using data from a large multicenter cohort.
Methods: This cross-sectional study included 922 clinically stable patients with DSM-5 schizophrenia consecutively recruited within the Italian Network for Research on Psychoses. SUD diagnosis was established with the MINI. Assessments included PANSS, BNSS, PAS, SLOF, MCCB, MSCEIT, and Brief COPE. Group comparisons were followed by multivariate logistic regression and causal mediation analysis.
Results: Of 922 participants, 240 (26.0%) had comorbid SUD. Compared to non-SUD, they were more often male (80.8% vs 65.5%), younger (38.4 vs 40.8 years), with earlier onset (22.5 vs 24.6 years) and more hospitalizations (5.1 vs 3.2). In the SUD group, PAS showed poorer academic functioning ($p < .00001$) with relatively better social functioning ($p < .00001$) across childhood and adolescence. BNSS scores were lower for both MAP (11.5 vs 13.3, $p = .003$) and EXP domains (19.5 vs 21.1, $p = .033$). No group differences emerged for PANSS positive, disorganization, cognition, or social cognition. Regression indicated higher odds of SUD with maladaptive coping (COPE substance use OR 1.44, $p < .001$; self-distraction OR 1.21, $p < .001$), poorer PAS academic functioning in early adolescence (OR 1.44, $p = .003$), and better SLOF physical functioning (OR 1.18, $p = .030$). Protective effects were observed for PAS social functioning (OR 0.55, $p < .001$), higher BNSS EXP scores (OR 0.79, $p = .011$), and better SLOF work skills (OR 0.96, $p = .016$). Mediation analysis showed that the protective effect of premorbid social functioning was largely direct, with only about 10% mediated by lower severity of EXP symptoms, suggest-

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