that has investigated the maturational changes in in neuronal dynamics during adolescence as well as the possibility that aberrant rhythmic activity is present in clinical high-risk participants.

Methods: A sample of participants meeting CHR-criteria (n=100) from the ongoing Youth Mental Health Risk and Resilience (YouR) Study and 50 matched controls were recruited as well as a sample of n = 20 participants meeting first-episode psychosis (FEP) criteria. We examined auditory and visual-induced oscillations as well as resting-state Magnetoencephalographical (MEG)-data and obtained estimates of spectral power and phase-synchronization at source-level. MEG-recordings were accompanied by Magnetic Resonance Spectroscopy (MRS) measurements of GABA and Glutamate-levels in auditory and visual cortices.

In addition, we examined the development of neural oscillations in a sample of n = 100 children and adolescents (age range: 12–21 years) during a working memory task and during spontaneous activity to identify critical periods for the development of neural dynamics.

Results: CHR-participants were significantly impaired in the generation of both auditory and visual gamma-band oscillations as well as characterized by an increase in broad-band, resting-state gamma-band power. The latter points towards an increase in excitability-levels of neural circuits which is supported by increased Glutamate-levels in sensory regions while GABA-levels were not different from controls. Similar patterns in both MEG- and MRS-parameters were observed in the FEP-group. Finally, our developmental data highlight that the transition from adolescence to adulthood is characterized by profound changes in both amplitude and synchrony dynamics, highlighting the possibility that critical period mechanisms that underlie the expression of psychosis are impaired in ScZ.

Discussion: Together, these data indicate that aberrant neural oscillations in ScZ highlight the crucial contribution of impaired neural dynamics that are likely to result from dysfunctional Excitation/Inhibition balance parameters. Moreover, the onset of schizophrenia during the transition from adolescence to adulthood suggests that critical period mechanisms that support the expression of high-frequency oscillations are impaired.

4. INNOVATIVE APPROACHES TO EARLY IDENTIFICATION AND TREATMENT: USING MOBILE HEALTH TECHNOLOGY TO IMPROVE OUTCOMES IN PSYCHOSIS

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Overall Abstract: Smartphone and internet based applications that promote symptom tracking, treatment engagement, and self-management have the potential to improve mental health outcomes and reduce cost of care. This is especially important in the treatment of psychosis, as long-term clinical outcomes to commonly available treatments remain poor and financial costs are high. The speakers in this symposium will present novel approaches using mobile health technology to promote rapid identification and referral (Dr. Niendam), access to treatment (Dr. Hidalgo-Mazzei), treatment engagement and symptom tracking (Dr. Tully), and functional recovery (Dr. Alvarez-Jimenez) for individuals experiencing psychosis.

Dr. Niendam will present initial results of a community-based cluster-randomized controlled trial aiming to increase identification rates of individuals with psychosis and reduce Duration of Untreated Psychosis. Twenty-two school, community, and primary care sites in Sacramento, California were randomized to either standard community education and clinician-based referral versus standard education plus electronic (tablet) screening for psychosis symptoms. Results show electronic screening is feasible across various community settings and significantly increases identification rates compared to clinician-based identification alone.

Dr. Hidalgo-Mazzei will present data examining the feasibility of delivering a psychoeducational treatment program that promotes self-management in bipolar disorder. The SIMPLe platform is accessible from any internet enabled device and provides symptom monitoring and personalized psychoeducation content in Spanish, Italian, and French. Data from a large open trial with over 300 participants from across the globe demonstrate how mobile technologies can increase access to care by extending effective interventions to many people at low cost.

Dr. Tully will present data on the feasibility, validity, and predictive utility of a consumer smartphone application ("app") plus provider web-based Dashboard as an add-on treatment tool in Early Psychosis outpatient programs in Northern California. Data demonstrate that consumers and providers in community-based outpatient clinics are responsive to integrating smartphone technology into treatment services. Consumers willingly use the app to track their symptoms; symptom data gathered via the app appears to be a valid reflection of symptoms experienced over time and can predict symptom exacerbations two weeks later.

Dr. Alvarez-Jimenez will present data demonstrating the feasibility, acceptability, and efficacy of two novel online social media based platforms designed to promote functional recovery in Ultra High Risk and First Episode Individuals. Results indicate online social media platforms are safe, engaging, and improve social functioning in both populations – a domain that is often neglected in most treatment approaches.

Chantel Garrett is the founder of Strong365.org, a website providing consumer and family-focused psychoeducation materials related to psychosis in 103 languages. She also has lived experience as a family member of a loved one with schizophrenia. As discussant, she will speak from her expertise as both a developer and consumer of internet-based and mobile technologies to elucidate how mobile health materials can impact provision of mental health care, and facilitate discussion of the barriers and future directions for the field. Implementation of technology-based care across diverse cultures and languages will also be discussed.

4.1 ENHANCING EARLY PSYCHOSIS TREATMENT USING SMARTPHONE TECHNOLOGY: INTEGRATION OF A MOBILE HEALTH PLATFORM IN FOUR EARLY PSYCHOSIS PROGRAMS

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Background: Mobile health applications offer ecologically valid, data-rich methods of modeling daily symptoms and functioning, which could inform treatment delivery and facilitate early intervention in individuals with psychosis. To date, most studies evaluate adoption of technology independent of care providers. However, successful implementation and long-term adoption of mobile technology likely also requires integration into outpatient settings as an add-on tool to enhance treatment. We implemented a smartphone "app" plus clinician Dashboard as an add-on treatment tool in the UC Davis Early Psychosis (EP) Programs and tested feasibility, validity, and predictive utility of symptom tracking via the app as part of EP care. A subsequent pilot study examined barriers to implementation within two additional community outpatient settings in Northern California.

Methods: Study 1 implemented the platform within the UC Davis EP Programs. For up to 14 months, EP clients completed daily and weekly surveys examining mood, symptoms, and treatment relevant factors via the app, as well as monthly in-person clinical assessments using the BPRS. Clinicians discussed symptom ratings and surveys during treatment sessions using the Dashboard. We examined client enrollment and survey completion to determine feasibility, and relationships between BPRS and weekly symptom ratings to evaluate validity of self-report symptom data collected via the app. Analysis of predictive utility determined if weekly self-report symptoms predicted symptom exacerbations 2 weeks later. Study 2 expanded recruitment to 2 additional community-based EP outpatient clinics. EP clients and their clinicians used the platform as part of

care for 5 months and filled out satisfaction surveys at study-end regarding usability of the platform. Rate of survey completion in the absence of financial incentives was examined to determine real-world implementation of the platform.
Results: For study 1, 76 clients enrolled and remained in the study for an average of 183 days (SD=88). Survey completion rates remained high over the course of the study (weekly surveys: 77%; daily surveys: 69%) and were not significantly impacted by baseline symptom severity or length of time in the study. Weekly survey positive and depression/anxiety symptoms were significantly associated with BPRS positive ($p<0.001$) and BPRS depression/anxiety symptoms ($p< 0.001$) respectively. EP clients reported high satisfaction with the platform and endorsed continue use of the app if it was made available as part of their treatment. For Study 2, 61 EP clients and 20 clinicians enrolled; 41 EP clients and 20 clinicians participated for 5 months. The majority of EP clients (66%) and clinicians (85%) who completed satisfaction surveys reported a desire to continue to use the platform as part of care. Six (15%) clients and 3 providers (23%) stated that technological glitches impeded their use of the platform.
Discussion: These data support the validity and acceptability of implementing smartphone-based assessment of symptoms in community-based EP care. Specifically, results indicate that assessing positive and depression/anxiety symptoms using weekly self-report surveys via smartphone is comparable to gold-standard clinician-led assessments. This approach may be a valid method of monitoring fluctuations in positive and depression/anxiety symptoms in EP populations to anticipate symptom exacerbations. However, solutions to logistical barriers such as technical challenges and clinician engagement with technology are necessary for widespread adoption across EP care.

4.2 A TECHNOLOGY-ENHANCED INTERVENTION TO REDUCE THE DURATION OF UNTREATED PSYCHOSIS THROUGH RAPID IDENTIFICATION & ENGAGEMENT

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Background: Reducing the duration of untreated psychosis (DUP) is essential to improve long-term outcome in young people with first episode of psychosis (FEP). The US "standard of FEP care" focuses on targeted provider education regarding FEP signs and symptoms to motivate referrals to FEP coordinated specialty care (CSC) services. However, a recent US multisite CSC trial showed a median DUP of 74.5 weeks, suggesting the current approach to engage referral sources is not sufficient to reduce DUP to proposed international standards of 12 weeks. This cluster-randomized controlled trial assesses whether standard targeted provider education plus novel technology-enhanced screening using the Prodromal Questionnaire-Brief version (PQ-B) identifies more individuals with FEP, earlier in their illness, compared to standard targeted provider education alone.
Methods: Twenty-two sites were randomized within 3 strata [community mental health, CMH (N=10), middle/high schools, SCH (N=8), primary care, PC (N=4)] to 1 of 2 intervention arms [Education alone (TAU) vs Education + Electronic Screening (Active)]. Active sites screened eligible individuals ages 12–30 at initial presentation for mental health concerns and referred those who passed a liberal PQ-B cut off score for phone evaluation by the CSC clinic. TAU sites referred individuals for phone evaluation based on clinician judgment. Phone evaluations assessed eligibility for FEP services and DUP. Preliminary analyses examined the number of FEP referrals and length of DUP in each arm.
Results: Active sites effectively implemented electronic screening within their settings. Of the 822 individuals electronically screened at Active sites between June 2015 and July 2017, 43.2% scored above the PQ-B cut-off (mean±SD PQ-B score=21.25 ± 20.75; median=15; range = 0–95; IQR = 3–35). One in 8 individuals who completed the tablet were identified as experiencing threshold psychosis. Across both Active and TAU sites, 511 individuals were identified, 422 individuals agreed to be referred, and 319 completed a phone interview to determine eligibility: 33.23% reported attenuated and 36.68% fully psychotic symptoms. Active sites identified significantly more individuals with threshold psychosis ($p<.001$) than TAU. No difference in median days of DUP was observed across arms.
Discussion: Preliminary results show the feasibility of electronic screening across various community settings and showed a 3.5 times higher identification rate for electronic screening of self-reported psychosis spectrum symptoms than clinician-based identification alone. Reasons for the lack of difference in DUP will be discussed. While the screening method may shorten the time from entry into mental health care and referral to specialty care treatment, significant DUP reduction may require interventions to reduce time to the first mental health contact. The next phase of the project will examine impact of clinic-based versus community-based treatment engagement to reduce barriers to initiating CSC care.

4.3 ENHANCING SOCIAL FUNCTIONING AND LONG-TERM RECOVERY IN YOUNG PEOPLE WITH FIRST EPISODE PSYCHOSIS (FEP) AND YOUNG PEOPLE AT ULTRA HIGH RISK (UHR) FOR PSYCHOSIS: A NOVEL ONLINE SOCIAL THERAPY APPROACH

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Background: Specialized early intervention services have demonstrated improved outcomes in first episode psychosis (FEP); however, functional recovery lags behind symptomatic remission, and many FEP patients remain socially isolated with poor functional outcomes. Similarly, psychological and pharmacological treatments have been demonstrated to reduce rates of transition to psychosis in Ultra High Risk (UHR) patients. However, recent research shows that UHR patients have a poor functional outcome regardless of transition to psychosis. These findings have resulted in widespread calls for new treatments aimed at improving functioning in both FEP and UHR patients.
The aim of these studies was to determine the safety, acceptability, feasibility and treatment effects of an advanced online social media based intervention specifically designed to enhance social functioning in FEP and UHR patients.
Methods: Our multi-disciplinary team of 35 researchers, software engineers, professional writers, clinical psychologists, comic developers, experts in human-computer interaction and young people has developed novel online social media platforms for young people with FEP (Horyzons), and UHR patients (Momentum). Our interventions integrate: i) peer-to-peer social networking, ii) tailored therapeutic interventions, iii) expert and peer-moderation, and iv) new models of psychological therapy (strengths-based models, self-compassion and mindfulness). The acceptability and safety of these platforms have been evaluated through 2 pilot studies in FEP (N=20; 1 month intervention), and UHR (N=15; 2 months intervention). In addition, the effectiveness of Horyzons is currently being evaluated in a large 5 year RCT in FEP (N=170; 18 months intervention).