

E-mental health

EPP0570

Insideout project: Using big data and machine learning for prevention in psychiatry

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Introduction: Social Media might represent an amazing and valuable source of information on mental health and well-being. Several researches revealed that adolescents aged 13 to 17 years old go "online" daily or stay online "almost constantly".

Objectives: The aim of this project is to identify distress in pre-clinical stages using Social media screening methods. The system can be modelled to centre on different several health-related topics.

Methods: We created a digital system able to analyse scripts written by adolescents on Twitter. InsideOut works using machine learning techniques and computational linguistic items to catch significant and sense of written messages and it improves its performances with iterations. The system is able to automatically identify semantic information relevant to different topics: in this case "distress in teenagers".

Results: The task of our system is considered correct when it is able to identify triples of Life Event, Sentiment and Experience of a tweet in agreement with the Gold Standard established among the annotators. The system has around 70% of accuracy in identifying triples. The analysis has been carried out both in Italian and English collecting over 4 million Italian tweets and 30 million English tweets. Comparative analysis with self-report questionnaires show that tweet analysis is able to suggest similar statistics.

Conclusions: This study analyzed contents of messages posted on Social Media Twitter meta-dating them with psychological and health-related information. Using InsideOut, we can plan clinical intervention in district and regions where high levels of uneasiness are revealed.

Keywords: distress; prevention; machine learning; e-mental health

EPP0569

Pending challenges to e-mental health in the COVID-19 era: Acceptability of a smartphone-based ecological momentary assessment application among patients with schizophrenia spectrum disorders

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Introduction: Concerns have been raised about ecological momentary assessment (EMA) acceptability among patients with schizophrenia spectrum disorders (SSD), which is of major relevance during the e-Mental health-focused COVID-19 pandemic.

Objectives: To investigate i) the levels of adherence to a passive smartphone-based EMA tool, the Evidence-Based Behavior (eB2), among SSD patients; and ii) putative predictors of this.

Methods: Sample: SSD (F20-29-ICD10) outpatients, age 18-64, without financial incentives, recruited over 17/06/2019-11/03/2020 at the Hospital Universitario Fundación Jiménez Díaz (Madrid, Spain). Those who accepted the eB2 installation -users- and those who did not -non-users- were compared in sociodemographic, clinical, premorbid adjustment, neurocognitive, psychopathological, insight and metacognitive variables by a multivariable binary logistic regression model.

Results: Sample (N=77): n=41 males; age: 47.69±9.76 years, n=24 users (31.2%). n=14 users (70%) had the eB2 installed at follow-up (median=14.50 weeks).

| Multivariable binary logistic regression model on 'user' as outcome | | | | | | |
|---|---------|-------|-------|-------|-------|-------------|
| | β | SE | Wald | p | OR | 95% CI |
| Age | -0.075 | 0.038 | 3.910 | 0.048 | 0.928 | 0.861-0.999 |
| Education level | -0.967 | 1.289 | 0.563 | 0.453 | 0.380 | 0.030-4.755 |
| Early adolescence premorbid adjustment | -0.285 | 0.110 | 6.695 | 0.010 | 0.752 | 0.606-0.933 |
| Trail Making Test A | -0.030 | 0.025 | 1.488 | 0.222 | 0.970 | 0.924-1.018 |
| Trail Making Test B | -0.005 | 0.010 | 0.278 | 0.598 | 0.995 | 0.976-1.014 |
| Cognitive Insight | 0.062 | 0.061 | 1.043 | 0.307 | 1.064 | 0.944-1.200 |

$X^2=25.296, df=6, p<0.001$. Nagelkerke- $R^2=44.7\%$. Correctly classified: 76.9%, users:54.5%, non-users:88.4%.

Conclusions: Acceptability of a smartphone-based EMA application among SSD patients was low. Age (young) and good premorbid adjustment predicted acceptability. e-Mental Health methods need to be tailored for patients with SSD. Otherwise, these highly vulnerable individuals may be neglected by e-health-based services in the post-COVID-19 years ahead.

Keywords: Schizophrenia spectrum disorders; acceptability; ecological momentary assessment

EPP0570

Online psychotherapy in times of COVID-19: professional's experience

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Introduction: The global pandemic of corona virus has brought on the imperative of swift organisational changes within mental health care institutions. Outpatient psychiatric care system with all its complex features was organized online. Patient's adjustment to different modality of treatment, and their benefit, was of our primary concern. Mental health professionals had many challenges in this process as well. Couple of months into providing this form of treatment, we were interested in therapist experience.

Objectives: The aim of this study was to highlight challenges faced by the various mental health professionals that were a part of interdisciplinary team at University Psychiatric Hospital Vrapče.

Methods: We used self-assessment scales to assess mental health professionals experience and to recognize some of the possible difficulties in this process. We have examined satisfaction with available technology, suitability of different psychotherapeutic background when providing online treatment, therapists competencies for this kind of treatment and levels of perceived stress. Mental health treatment comprised individual and group approach, and was provided by interdisciplinary teams of psychiatrists, clinical psychologists, social workers, social pedagogues, psychiatric nurses, and work therapists.

Results: The results show differences between professional's psychotherapy background, educational level and previous experience in perceived efficiency and experienced stress in the process of providing online treatment.

Conclusions: The findings of this study have proven that professionals perceive technical, organisational standards, previous experience, and education to be important for their efficiency. This should be taken into account when developing standards in online treatment within mental health institutions.

Conflict of interest: No significant relationships.

EPP0571

Diagnosis moderates the relationship between anxiety and digital communications in bipolar disorder and borderline personality disorder: A naturalistic remote-monitoring study

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Introduction: Differences in the relationship between mood and digital communication metrics have been shown to act as a diagnostic marker in Bipolar Disorder (BD) and Borderline Personality Disorder (BPD). Anxiety has been associated with mobile-phone use in non-clinical populations, although a potential association between anxiety and digital communications in BD or BPD populations hasn't been studied.

Objectives: To explore the association between self-reported anxiety symptoms and objective, naturalistic digital communications metrics in BD and BPD participants.

Methods: BD (n= 17) and BPD (n=17) cohorts were provided with a smartphone application which monitored phone call and SMS frequency and duration, alongside weekly self-reported anxiety (Generalised Anxiety Disorder 7-item scale). Linear mixed-effects regression models assessed the association between digital communications, anxiety state and interaction effects between anxiety and diagnosis.

Results: Self-reported anxiety state was negatively associated with decreased total call frequency (B=-5.150, p=0.002), cumulative total call duration (seconds; B=-1456.779, p<0.001), cumulative outgoing call duration (seconds; B=-1108.23, p<0.001), total SMS frequency (B=-31.412, p<0.001), outgoing SMS frequency (B=-16.443, p<0.001), cumulative total SMS length (characters; B=-1664.78, p=0.001) and cumulative outgoing SMS length (characters; B=-857.770, p=0.005) for BD, but not BPD, participants. Associations remained significant after adjusting for mood.

Conclusions: These results further suggest that BPD individuals, compared to BD individuals, exhibit persistent social interaction during mental distress. Together with previous findings, this effect appears to be common, but independent, for both self-reported anxiety and depression. These findings inform our understanding of the psychopathology of the two conditions, and may contribute to the development of tools to aid their diagnostic differentiation.

Conflict of interest: Prof Goodwin is a NIHR Emeritus Senior Investigator, holds shares in P1vital and P1Vital products and has served as consultant, advisor or CME speaker in the last 3 years for Compass pathways, Evapharm, Janssen, Lundbeck, Medscape, P1Vital, Sage, Servier.

Keywords: Digital phenotyping; bipolar disorder; Borderline personality disorder; Anxiety

EPP0572

Effectiveness of internet-based cognitive behavioural therapy for binge eating disorder

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Introduction: Binge eating disorder (BED) is the most prevalent specific eating disorder. It is characterized by recurrent episodes of binge eating and is associated with feelings of shame and a lack of control. Internet-based treatments are gaining increasing attention as a way to reach more patients with evidence based treatments. In 2020 we conducted a preliminary analysis on the effectiveness of an internet-based cognitive behavioural therapy treatment project (Jensen ES, Linnet, J, Holmberg TT, Tarp K, Nielsen JH,