associated with suicide is depression. It is crucial to develop clinical tools that can provide objective data to assess suicide risk in clinical settings. Depression and high suicide risk may lead to physiological changes that can affect the speech pattern. Prior research has indicated that the acoustic and prosodic characteristics of speech may hold potential clues for assessing suicide risk. Additionally, specific speech parameters may serve as discriminators for identifying individuals at risk. In recent years, deep learning-based models have yielded successful results in identifying such alterations in speech signals.

Objectives: The aim of our study was to examine specific voice analysis parameters between control, depressive and high suicide risk groups. We also aimed to investigate the effect of voice-related variables in predicting suicidal behavior in patients with depression using an artificial intelligence model. The results of voice analysis are intended to serve as a starting point for the development of future artificial intelligence algorithms.

Methods: The study sample consisted of 30 near-term suicidal patients, 30 patients with major depression and 30 healthy controls. The participants were presented with a pre-determined text and a voice recording was carried out. Feature extraction and model training for three tasks, namely depression or not, suicide or not, and depression or suicide were carried out. Mel-Frequency Cepstral Coefficients (MFCCs), deep learning-based (VGGish), formant and prosodic features were extracted to analyze the sound characteristics of the participants. The Support Vector Machine was used as the machine learning algorithm for classification and the three models were trained for each task. A 10-fold cross-validation was carried out and presented by metrics including accuracy, precision, sensitivity and specificity.

Results: Among the metrics examined, MFCCs for the "Suicide or not" task were found to be more successful with rates of 0.90, 0.88, 0.93 and 0.86 for accuracy, precision, sensitivity, and specificity, respectively. MFCCs were also more successful for the "Depression or suicide" task with rates of 0.68, 0.66, 0.76, and 0.60 for accuracy, precision, sensitivity, and specificity, respectively. Among the metrics examined for the "Depressed or not" task, VGGish was more successful with rates of 0.73, 0.81, 0.70, and 0.76 for accuracy, precision, sensitivity, and specificity, respectively.

Conclusions: To the best of our knowledge, our study is the first to compare the VGGish and other features of speech (MFCCs, prosodic, formant features) between high suicide risk, depression and control groups. Classification parameters developed using the VGGish and MFCCs features of speech could be useful in predicting suicide risk in future studies.

Disclosure of Interest: None Declared

O0035

Deliberate self-harm and suicide in people with immigrant background: how can reason for immigration and country of origin differentiate the risks?

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Introduction: A growing body of research have devoted into suicide and deliberate self-harm in immigrant population, but no study has examined how reason for immigrating to the host country differentiates the risks.

Objectives: To gain firm insight into suicide and deliberate self-harm among peopel with immigrant background.

Methods: Norwegian registers were interlinked to identify all individuals who died by suicide in 1992-2018 and who received emergency treatment for non-fatal deliberate self-harm (DSH) in 2008-2018, and to construct the respective databases via a nested case-control design. Rates and relative risks of suicide and DSH were assessed according to immigrant background, country of birth and reasons of immigration, and in the context of personal socioeconomic status.

Results: People with an immigrant background accounted for 11.6% of all suicides in 1992-2018 and 17.9% of all DSH incidents treated in hospital emergency departments in 2008-2018. The rates of both suicide and DSH were highest in people born abroad with two Norway-born parents (mean rate: 19.4/100 000 for suicide and 280.9/100 000 for DSH) and lowest in the second-generation immigrants. Compared with the native Norwegians, suicide risk was significantly higher for those foreign-born with two Norway-born parents (HR=1.50) and those born in Norway with 1 one foreign-born parent (HR=1.20), but was significantly lower for the first- and second-generation immigrants. The associated risks remained almost unchanged when the data were adjusted for personal differences in education, marital status, income and place of residence in Norway. The analyses on deliberate self-harm exhibited similar patterns of results as for suicide, although the estimated reduced risks in the first- and second-generation immigrant is somewhat smaller. Evidently, the risks for suicide and DSH varied significantly by reason of immigration and country of origin. Immigrants coming for education had the lowest risk for suicide and self-harm, and those coming for work the second lowest. The risks for immigrants coming for family unity were lower than the natives, but significantly higher than counterparts coming for job or education from the same country. Among immigrants coming to Norway as a refugee or asylum seeker, the risk of suicide was comparably high as those coming for work, but the relative risk for self-harm was significantly higher. The increased risks associated with the mixed immigration background tended to be slightly higher in females than in males, and were likely confined to adoptee population.

Conclusions: Risks for suicide and deliberate self-harm in people with an immigrant background differs significantly by reason of immigration and country of origin. The findings should be taken into account in efforts of mental healthcare and suicide prevention targeting immigrant population.

Disclosure of Interest: None Declared

O0036

Prospective mortality in patients with non-fatal deliberate self-harm: a national cohort study

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Introduction: Deliberate self-harm (DSH) is a strong indicator of psychological distress and constitutes a significant risk factor for subsequent mortalities.

Objectives: In this study we want to gain insights into cause-specific mortalities in self-harming patients and to disentangle important factors differentiating the risks so that to inform follow-up care and mortality prevention.

Methods: Retrospective data from nationwide registries were inter-linked to follow all patients presenting to specialist healthcare with non-fatal DSH from January 2008 through December 2018. Data on cause of death, personal socioeconomic status, clinical features of DSH and other medical covariates were retrieved. The Fine and Gray competing risks model was used to identify significant factors impacting subsequent mortality risk by specific causes of death in the cohort.

Results: The cohort of 43153 DSH patients comprised 24286 females and 18867 males, with 45.3% being 10-34 years old, 38.1% being 35-64 years old and 16.6% above 65 years old at index DSH episode. Of these patients, 7041 died during the follow-up period, including 2290 within the first 1-year, corresponding to a mortality rate of 31.9 per 1000 person-years in the follow-up period and 54.9 per 1000 person-years in the first year. Common causes of death included suicide (n=911), other external causes (n=1020), cancer (n=896), cardiovascular diseases (n=1523), respiratory disease (n=787) and mental and substance misuse disorders (n=463), but the causes of death varied greatly by age groups and other factors. The risk of dying by suicide was highly associated with middle-age, male gender, tertiary education, psychiatric history, and DSH by injury, clear intent of self-harm, comorbid affective or personality disorder, referral to psychiatric treatmen, as well as DSH repetition during the period of follow-up. Significant risk factors for death by other external causes included male gender, old or middle age, single marital status, lowest quartile income, history of psychiatric treatment, and DSH by injury and comorbid substance misuse. For death by natural causes, the relative risk was highest among the elderly and the middle-aged, with other significant risk factors including male gender, single marital status, low education, lowest quartile income, and comorbid substance misuse. Attendance in psychiatric treatment after DSH appeared to be beneficial reducing the risk for mortality by suicide, other external causes and natural causes as well.

Conclusions: Patients with DSH represent a high-risk group for suicide, other external and natural cause mortalities. Mental healthcare is essential in follow-up care and personalized care should take into account patients´ socio-demographic background and clinical features of self-harm.

Disclosure of Interest: None Declared

E-mental Health

O0037

Co-design of a digital violence prevention and management tool for psychiatric inpatient care: focus on supporting integration into electronic health record system

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Introduction: Violence in psychiatric inpatient settings is a global challenge. Several methods have been developed and tested to help staff prevent the occurrence of violence on the wards. One novel and effective method is eDASA+APP, originating from Australian forensic psychiatric settings (Maguire *et al.* Int J Ment Health Nurs 2019; 281186-1197, Griffith *et al.* Psychiatr Serv 2021; 72 885-890). This electronic method contains an instrument (DASA) to assess the risk for imminent violence and includes evidence-based violence risk management methods for risk levels. It is important to ensure that this electronic intervention is integrated into daily clinical practice. This can be done in co-design between all that are involved e.g., staff and experts by experience, and by encouraging them to achieve a common goal and gain benefits by working together.

Objectives: This prevention gives an overview of how the Finnish version of eDASA+APP was co-designed with healthcare staff and experts by experience, focusing on integration into the electronic patient health record system. The presentation is part of a larger research project testing eDASA+APP in Finnish psychiatric inpatient care.

Methods: Co-design workshops focusing on three major themes: 1) identifying current practices and how eDASA+APP would fit in those, 2) producing a linguistically and culturally appropriate version of eDASA+APP, and 3) preferred use of eDASA+APP in an electronic patient health record system. Notes were kept during the workshops by researchers. Qualitative material were analysed with deductive content analysis. Results from the third theme are shared in this presentation.

Results: Staff and experts by experience described that integration of eDASA+APP in electronic patient health record system is supported if it 1) brings clear and fast information to the staff about the violence risk of a patient, 2) is a visible measure that is concretely in sight in electronic patient health record system, 3) provides information about which violence prevention and management interventions have worked with a patient, 4) involves patient preferences, and 5) consist of joint decisions that have been agreed multi-professionally.

Conclusions: Integration of eDASA+APP in the electronic patient health record system has the potential to succeed if it is realized in cooperation with staff and experts by experience, is technically easy to use, and the users have an understanding of its benefits to everyone involved.

Disclosure of Interest: None Declared

O0038

Guidance on how to involve people with lived experience in research on digital mental health interventions

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