consent to collect data and Ethical Regulations allowed to access their medical records.

Results: Out of 1227 psychiatric consultations made during the 12-month period indicated above, 120 cases (10%) concerned cases of suicidality. Of these, 37 (31%) were classified as SBD and 83 (69%) as no-SBD suicidality cases (i.e., patients with suicidal ideation or proposals who did not initiate a suicide attempt during the last 24 months). Gender distribution did not differ in SBD group (females=30.5%) as compared to no-SBD group (females=69.5%), nor did age distribution (55.3±25.6 vs 61.9± 18.2 years). Frequencies of psychiatric diagnoses were similar in the two groups (respectively, 54.1% vs 60.2%). The presence of a negative external event in the period near to the hospitalization was more frequent in the SBD group (35.1%) than in no-SBD group (9.6%) (p<.003). A critical behavior (insight) towards suicidality was present at the time of the evaluation in 56.8% of SBD patients compared to 9.6% of no-SBD group (p<.001). Medical pathologies were less frequent (24.3% vs 47% (p<.05) and psychiatric disorders running in family (10.8% vs 1.2%) (p<.05) were more frequent in SBD vs no-SBD. Logistic regression analysis confirmed that a precipitating event was the strongest predictor of SBD (OR= 4.9, 95% CI= 1.6-8.9) while presence of a chronic physical disease was negatively associated with SBD (OR=0.34, 95% CI=0.13-0.93).

Conclusions: This study revealed the complexity of real-world manifestations of SBD [2,3]. In fact, a substantial proportion of patients with SBD had no psychiatric diagnoses and did not report suicidal behaviors in the months preceding the gesture until a precipitating event occurred. The fact that SBD patients showed critical behavior following their anti-conservative act in the immediate period before discharge indicate a cathartic effect. These data outline the need and usefulness of subtyping suicidal behavior to explore the potentially distinct mechanisms of suicide attempts and personalized treatment implications.

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P.574 Inverse relationship between lithium levels in drinking water and suicide rates

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Introduction: Suicide is an important public health problem in Lithuania and around the world. Lithuania ranks fourth in the world's suicide rate, while it has a second rank for the male suicide rate among all countries in the world [1]. Although suicide rate in Lithuania declined over the past few years from 30 suicides per population of 100,000 in 2015 to 28.3 in 2016 and 26 in 2017, the overall number of people taking their own lives remains rather high [2]. The findings across geographical regions provided evidence that higher lithium levels in the public drinking water may be associated with lower suicide rates [3,4,5]. Studies of environmental and neurobiological factors which may increase or decrease suicide risk may lead to a development of new suicide prevention methods.

Aim: To investigate an association of lithium levels in drinking water with suicide mortality rates in Lithuania.

Methods: Fifty-six samples from public drinking water systems were taken in all 54 districts municipalities of Lithuania. Lithium levels were determined using the ion chromatography method. For the statistical calculations, lithium levels were averaged per district municipality and plotted against suicide standardized mortality rates (SMR) per 100,000 populations, within the 5-year period from 2012 to 2016. In accordance with the International Statistical Classification of Diseases (ICD-10) we considered only suicide attempts that resulted in death with the ICD-10 codes from X60 to X84. Data on potential confounding factors of suicide risk that included unemployed rate, number of visits to psychiatrist, divorce rate, female/male proportion (number of females per 1000 males) were obtained from the Department of Statistics, and were averaged across the investigated time period.

Results: The mean lithium concentration in 56 drinking water samples was 11.5 (SD 9.9) μg/L ranging from 1.0 to 39.0 μg/L, median – 7.0 (IQR 3.5-20) μg/L. In 2012-2016, the average population per district municipality was 42,102 (SD 50,452) inhabitants, ranging from 2,756 to 316,916 people, median - 28,779 (IQR 20,432-42,257). The average of mean total, male, and female suicide SMR per 100 000 populations in the five-year period (2012 and 2016) was 39.5 (SD 10.9; range 16.9-65.5), 79 (SD 22.2; range 31.9-137.1), and 13.3 (SD 5.1; range 3.8-28.8), respectively. Due to differences in population size across the all 54 districts municipalities we employed the least squares linear regression weighted for local population size and including nonlinear terms into linear regression. Quadratic term was included in the linear regression model because the inverted U-shape relation of lithium to SMR. We initiated crude and adjusted models analysis of the association of lithium levels in drinking water

and suicide SMRs. Our findings demonstrate inverted relation between lithium levels in drinking water and suicide SMR. The significant inverse association between lithium levels in drinking water and suicide SMR was found at lithium levels higher than 14.5 μg/L.

Conclusion: Lithium concentrations in drinking water were significantly negatively associated with total suicide rates, only after it reached the level of 14.5 μg/L. Lithium intake with drinking water may affect suicide rates in some geographical areas.

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P.575 The median effect of social support on the loneliness of resilience in the elderly living alone

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Background: Resilience refers to an ability to resist difficult conditions such as loneliness and it develops over a lifetime [1]. Elderly living alone are inevitably likely to feel lonely, which reduces the quality of life or even increases mortality. Social support is known to reduce loneliness, but research on what sub-factors are affected by the resilience of the elderly is lacking.

Introduction: The current study identifies loneliness, resilience and social support among community dwelling living alone elderly, who are mentally sound and financially stable, and to examine the relationships of these variables.

Methods: A sample of mentally healthy(Korean version of Mini Mental State Examination for Dementia Screening$\geq$-1.5SD and Geriatric Depression Scale$<$10) 197 community-dwelling adults 65 years of age or older was recruited from two cities from July to August 2018. Instruments were the Multidimensional Indivisual and Interpersonal Resilience Measure(MIIRIM), the Medical Outcomes Study Social Support Survey(MOS-SSS), and the University of California, Los Angeles Loneliness Scale(LON). 5 sub-factors for MOS-SSS were Emotional Support(ES), Affection Support, Positive Social Interaction(PSI), Tangible Support, and Informational Support [2]. Descriptive statistics, t-test, ANOVA, Pearson correlation, and stepwise regression analysis were used for data analysis. Sobel test was used to verify whether mediator variable significantly carries the influence of an independent variable to a dependent variable.

Results:

1. Average age of the older adults was 71.9 years($\pm$4.0), and 59.4% were women. Of the participants, 96.4%(n=190) have been married, 63.2% were bereaved. 29.4% of participants had solitary period under 10 years.
2. The total mean of Resilience was 70.7($\pm$11.7) out of 111. The mean score for Social Support MOS-SSS was 60.2($\pm$21.4) out of 95. The mean score for the Loneliness was 38.5($\pm$11.9) out of 80.
3. For the Resilience (MIIRIM), there were statistically significant correlations among loneliness (r=.56, p$<$.01) and social support (r=.72, p$<$=.01).
4. Hierarchical analysis shows social support completely mediates the effect of resilience to loneliness; as the effect of resilience on loneliness in the 2nd step is significant (β=-.56, p$<$.001) but not in the 3rd step(β=-.11, p$>$.05) but the effect of the social support on the loneliness in 3rd step (β=-.62, p$<$.001) is significant.
5. Stepwise regression analysis represents affection emotional support(ES) and positive social interaction(PSI) have the highest descriptive power. (Table 1)

Conclusions: In conclusion, social support fully mediates between resilience and loneliness. The findings suggest developing social support intervention programs, especially which can give emotional support and positive social interaction, is effective and crucial to decrease loneliness for living alone elderly.

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P.576 Automated pupillometry to detect command following in neurological patients: A proof-of-concept study

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