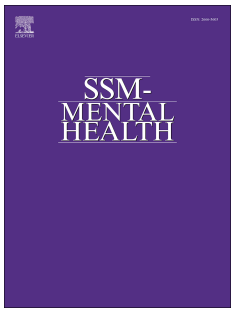

Changes in stigma and population mental health literacy before and after the Covid-19 pandemic: analyses of repeated cross-sectional studies

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Changes in stigma and population mental health literacy before and after the Covid-19 pandemic: analyses of repeated cross-sectional studies

Short title

Mental health literacy before and after the Covid-19

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Changes in stigma and population mental health literacy before and after the Covid-19 pandemic: analyses of repeated cross-sectional studies

Abstract

Aims: The Covid-19 pandemic and related social restrictions have been associated with increased rates of mental health problems, prompting a global surge in interest in mental well-being, which might have had a positive effect on population mental health literacy (MHL). We aimed to compare levels of mental health related stigma among the Czech general adult population before and after the Covid-19 pandemic, as well as recognition of own mental health problems, among those members of the general population who screened positively for mental disorders.

Methods: We conducted a comprehensive analysis of multiple almost identically designed cross-sectional surveys carried out on representative samples of the non-institutionalized adult population in Czechia in 2017, 2019, and 2022. Mental health problems were assessed using the Mini International Neuropsychiatric Interview (M.I.N.I.) in 2017 and 2022, while Self-identification of Mental Illness Scale (SELF-I) gauged self-recognition in 2017 and 2022. Mental health-related stigma was evaluated using the Reported and Intended Behaviour Scale (RIBS) and the Community Attitudes towards Mental Illness scale (CAMI) in 2019 and 2022.

Results: Attitudes towards individuals with mental health problems exhibited no statistically significant change; however, reported and intended behaviours, i.e. proxies of social distance, changed for the better. Also, self-recognition of mental health problems demonstrated statistically significant improvements among those screening positive for depression, anxiety, and suicide risk, but not among alcohol use disorders.

Conclusions: Population MHL remains low and recent positive changes are likely more attributable to the Covid-19 pandemic and related increase in interest in mental health than to deliberate efforts by government or state or other entities. This underscores the complex interplay between societal factors and mental health outcomes, warranting further exploration and reconsideration of public mental health strategies.

Keywords: mental health and illness, stigma, mental health literacy, Covid-19

Introduction

Mental health literacy includes positive attitudes towards mental health, knowledge and skills to obtain and maintain good mental health, understanding of mental disorders and their treatment, and an ability to seek mental health care effectively (Kagstrom et al., 2023; Jorm et al., 2012). Mental health stigma is the opposite of positive attitudes and it is linked to a wide range of negative outcomes (Thornicroft, Sunkel et al. 2022). For instance, within the realm of health and healthcare, stigma negatively correlates with help seeking behaviour; it is associated with a limited access to and provision of physical health care; and it appears to contribute to worse health outcomes (Gronholm, Thornicroft et al. 2017, Schnyder, Panczak et al. 2017, Schomerus, Leonhard et al. 2022).

Despite the evidence of effective interventions to reduce stigma (Thornicroft, Mehta et al. 2016, Janoušková, Tušková et al. 2017, Thornicroft, Sunkel et al. 2022), positive changes in attitudes and beliefs towards mental health and illness progress slowly and are difficult to facilitate. This holds even in countries that have invested in large, nationwide, state-of-art anti-stigma programs, such as England, Sweden, Catalonia and others, including Czechia where negative attitudes towards people with mental health problems are very high (Jorm, Jorm et al. 2005, Evans-Lacko, Corker et al. 2014, Hansson, Stjernswärd et al. 2016, Rubio-Valera, Fernández et al. 2016, Winkler, Formánek et al. 2021).

Developing essential mental health literacy is crucial for early detection and intervention in mental health issues (Dias et al., 2018). In contrast to stigma, however, research on other or all of the components of mental health literacy is limited, lacking evidence on population trends. Recognizing one's own mental health problems could serve as a proxy for understanding mental disorders, their treatment, and effectively seeking care. Thus, in 2019, the SELF-I questionnaire that assess self-recognition as a person potentially having mental health problems was incorporated into population studies in psychiatric epidemiology conducted by the National Institute of Mental Health in Czechia.

The Covid-19 pandemic and related measures, such as lockdowns, have had a detrimental impact on population mental health worldwide, particularly affecting certain groups, such as health care workers, children, or those with low socio-economic status (Dragioti et al., 2022; Panchal et al., 2023; Camara et al., 2023). This has also been the case in Czechia where mental health sharply declined during the first and second lockdowns compared to levels before the Covid-19 pandemic; although this decline might be partly attributed to differences in methods of data collection used during the lockdowns (Winkler, Formanek et al. 2020, Winkler, Mohrova et al. 2021, Potočár et al. 2023). Potential bias related to different methods of data collection was observed in our previous study, which demonstrated higher prevalence rates of mental disorders in online surveys compared to face-to-face (F2F) surveys (Potočár et al., 2023).

Theise in mental health problems has been linked to an increased focus on mental health and it has been seen as an opportunity to enhance mental health care services and prioritize mental health on the global agenda (Kola 2020, Moreno, Wykes et al. 2020, Hewlett, Takino et al. 2021, Latoo, Haddad et al. 2021, Zhu, Li et al. 2023). Preliminary evidence suggest that heightened interest in mental health may have contributed to a shift in public perception of mental health problems, resulting in more positive attitudes, perceptions and awareness about mental health and illness (O'Connor 2021, Bollettino, Foo et al. 2023, Huggard and O'Connor 2023). However, studies comparing mental health literacy or its components, such as stigma, before and after the Covid-19 pandemic are scarce and lack generalizability.

Our objective was to assess changes in both stigma and the recognition of one's own mental health problems among the general adult non-institutionalized Czech population. The present study builds on a series of cross-sectional studies conducted between 2017 and 2022 on representative samples of the general Czech non-institutionalized adult population and assessing mental health, stigma and recognition of personal mental health issues.

Methods

Study design, study populations and data sources

We analysed data from a series of cross-sectional studies conducted on the Czech general adult (18+) population in 2017, 2019, and 2022. We described the methodology of these surveys in detail elsewhere (Winkler et al., 2018, Winkler et al., 2022, Potočár et al., 2023), therefore here we provide a concise summary. Surveys in 2017 and 2019 were conducted face to face and respondents were recruited via two-stage sampling when individuals residing in randomly selected households were randomly chosen and asked for participation by a trained interviewer (paper and pencil interviewing – PAPI or computer-assisted personal interviewing – CAPI, respectively). We also conducted a survey in May and November 2020 (Winkler et al., 2020, Winkler et al. 2021, Potočár et al. 2023); however, because of pandemic related restrictions, the computer-assisted telephone interviewing (CATI) and mixed computer-assisted web interviewing (CAWI) were used and potential participants were sampled from a panel maintained by a professional data collection agency. In 2022, we also used probability sampling and both CATI and CAWI as well as face-to-face (CAPI) interviewing to collect data. To reduce the possibility of bias related to the method of data collection (F2F/PAPI-CAPI vs online/CATI-CAWI), we did not included the data from 2020 surveys, nor we included data from 2022 collected via CATI-CAWI methods into the present analysis. Thus, only data collected face to face in 2017, 2019 and 2020 were included in this study. Therefore, our final samples were as follows. In 2017 dataset consisted of 3306 Czech participants (RR = 60%), from which 5 were removed due to reporting age lower than 18. As for the 2019 sample, 1077 respondents were enrolled with response rate 59 %. The 2022 sample size consisted of 3063 participants with response rate 59%. All samples were representative of Czech noninstitutionalized adult population (aged 18 years and more) in terms of age, gender, education, and region of residence. Post-stratification weighting was applied on all samples to correct for small sampling imperfections and to align with the most recent population characteristics, i.e. representativeness in terms age, gender, level of education, and size of region of residence. All respondents provided informed consent, and all study protocols were approved by the Ethics Committee of the National Institute of Mental Health (registration numbers 97/18, 149/19 & 173/21).

Outcome measurement and covariates

We used the Reported and Intended Behaviour Scale (RIBS) and the Community Attitudes towards Mental Illness scale (CAMI) to measure levels of stigmatizing attitudes in the Czech population. We utilized the Mini International Neuropsychiatric Interview (M.I.N.I) to estimate the presence of mental disorders in the general population and we used SELF-I to understand the population's ability and willingness to consider themselves as potentially having mental health problems.

RIBS

The RIBS is an 8-item scale measuring reported experiences of living, working, and interacting with people with mental health problems and intended behaviour towards potential situations in the future. The scale is divided into two subscales focusing on reported and intended behaviour respectively (Evans-Lacko et al., 2011). The RIBS scale has been translated into Czech in previous research following WHO guidelines (Winkler et al., 2015). In our study, the RIBS reported and intended subscales were analysed separately. We merged the "do not know" answers on the reported behavior subscale with "no" responses to create nominal variables for each item with levels ''Yes'' and ''No''. This transformation allowed us to focus directly on the change in proportion of "Yes" answers over time. With respect to the intended behaviour subscale, we transformed the responses into values and created a composite score of the RIBS 5-8 items. This composite score refers to more positive intended behaviour regarding people with mental health problems. Therefore, the higher the composite score, the more willing is a person to perform described behaviour. We followed the instrument's guideline and assigned value 3 to the "do not know" (Winkler, Formánek et al., 2021). The final score ranged from 4 to 20.

CAMI

The CAMI is a 40-item scale used to measure community and public attitudes towards people with mental illness (Taylor and Dear, 1981). In our study we used the shortened 27-item version of the CAMI scale, which has previously been validated (Evans-Lacko et al., 2013). The CAMI scale has been translated into Czech in previous research (Winkler et al., 2016). CAMI items were transformed in the same manner as the RIBS 5-8 items, to allow for creation of a composite CAMI score, where a higher score would mean more positive attitudes towards the people with mental health problems. The score ranged from 14 to 60 with mean 40.9 and the standard deviation 7.23.

M.I.N.I.

The M.I.N.I is a short diagnostic structured interview used to assess the presence of mental health problems. The M.I.N.I follows diagnostic criteria in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and the 10th version of the International Classification of Diseases (ICD-10) (Sheehan et al., 1998).

We collected data on (1) a major depressive episode, (2) anxiety disorders (panic disorder, generalized anxiety disorder, agoraphobia, social phobia, posttraumatic stress disorder), (3) alcohol use disorders (alcohol dependence, alcohol abuse), and (4) suicidal thoughts and behaviours. The time frames are (1) the past two weeks for a major depressive episode, (2) the past month for panic disorder, posttraumatic stress disorder, social phobia, and suicidal thoughts and behaviours, (3) the past six months for generalized anxiety disorder, and (4) the past twelve months for alcohol use disorders (Sheehan et al., 1998).

SELF-I

SELF-I is a 5-item scale used to assess participants' perception and self-identification of mental illness or mental health issues (Schomerus et al., 2019). We reverse-coded items 1 and 3 and coded answers from 1 (strongly disagree) to 5 (strongly agree). Following the same procedure, we have transformed the SELF-I questionnaire values to create a composite score. The higher the score, the higher is the self-

identification of mental health problems. The score ranged from 5 to 25 with mean 12.55 and the standard deviation 3.56.

Other variables

Sociodemographic variables age, gender, size of place of residence, and education were relevant for ensuring the representativeness of the samples. To allow comparison across the years, the income variable was transformed into four ordinal categories with values one to four.

Statistical analyses

We applied chi-square tests for testing the differences between categorical variables over the years. For estimating the differences between continuous variables, the regression analyses were conducted. Furthermore, the ordinal categorical values were transformed to numbers for more convenient interpretation of the regressions' results (Robitzsch, 2020).

The ordinary least squares regression models were adjusted. If the best linear unbiased estimator assumptions were not met, further steps to optimize for the most precise estimate were utilised. Specifically, the outliers defined by the criterion of the observations' Cook's distance surpassing the value of 4/sample size were removed (Meer, Grotenhuis & Pelzer, 2010). In the case of model heteroskedasticity, the regression coefficients were estimated using the robust t-tests for reducing the bias of standard errors (White, 1980). Moreover, if the variance-accounted-for test suggested high multicollinearity for certain variables (equal to 10 or higher), they were removed from the regression models. For more details see Table S1 in the Supplement.

In addition, to assess whether our theoretical perspective—that there should be a relationship between individual components of MHL—is supported by the data, we conducted a correlation analysis to test the relationships between SELF-I and RIBS, as well as SELF-I and CAMI, in the 2022 datasets.After testing our primary research questions, we conducted several post-hoc exploratory analyses to further understand whether observed changes in mental health literacy were associated with age or gender of the respondents. These regression analyses were not pre-specified and were undertaken to provide additional context to our primary findings.

All analyses and data manipulations were conducted in RStudio.

Results

Participants

There were 3301 participants (53.7% females; 48 mean age) in 2017, 1077 participants (46.3% females; 48 mean age) in 2019 and 3063 participants (54.6% females; 49 mean age) in 2022 dataset. Presence of mental health problems was assessed only in the 2017 and 2022 samples. In 2017, 10.8% (95% CI: 9.78, 11.89) were estimated to have alcohol use disorder, 4.5% (95% CI: 6.87, 8.7) anxiety disorder, 4% (95% CI: 3.28, 4.62) depression, and 3.9% (95% CI: 3.21, 4.52) at suicide risk. In 2022, the corresponding numbers were as follow: 10.7% (95% CI: 8.97, 11.17) for alcohol use disorder, 7.7% (95% CI: 6.73, 8.64) for anxiety

disorders, 4.9% (95% CI: 4.17, 5.71) for depression and 6.3% (95% CI: 5.43, 7.17) for suicide risk. For descriptive statistics of weighted samples and prevalences see Table 1, for descriptive statistics of unweighted samples see Table S2 in the Supplement.

---Table 1 about here ---

Attitudes and social distance

Our data demonstrated no significant (p=0.68) change between population attitudes towards people with mental health problems in 2019 and 2022; composite CAMI scores are estimated at 40.82 (95% CI: 40.42, 41.23) and 40.92 (95% CI: 40.66, 41.19) respectively (Table 1). However, changes in all four reported behaviour items as well as for the intended behaviour composite scores were statistically significant (mean RIBS composite score 11.2 (95% CI: 10.99, 11.49) and 12.1 (95% CI: 11.92, 12.19) in 2019 and 2022 respectively, p<0.01; see Table 1 & 3 for more details). These changes were sustained when controlled for sociodemographic variables (Table 2).

---Table 2 about here ---

---Table 3 about here ---

Self-recognition of mental health problems

Our data demonstrated changes in self-recognition among those who were assessed as having mental health problems according to the M.I.N.I. For those screening positive for alcohol use disorders, SELF-I score decreased (mean SELF-I scores 13.8 (95% CI: 13.66, 14) and 11.5 (95% CI: 10.98, 11.94) in 2017 and 2022 respectively; p<0.01). In contrast, for those screening positive for anxiety disorders, SELF-I score increased (mean SELF-I scores 14.5 (95% CI: 14.26, 14.8) and 16.4 (95% CI: 15.91, 16.96) in 2017 and 2022 respectively; p<0.01), and same was true for those screening positive for depression (mean SELF-I scores 14.9 (95% CI: 14.54, 15.28) and 17.5 (95% CI: 16.93, 18.03) in 2017 and 2022 respectively; p<0.01) as well as for those at suicide risk (mean SELF-I scores 14.8 (95% CI: 14.42, 15.14) and 16 (95% CI: 15.42, 16.63) in 2017 and 2022 respectively; p<0.01). Changes were sustained when controlled for sociodemographic variables. See the Figure 1 for visual representation of the data as well as Tables S3-S10 in the Supplement for more details.

---Figure 1 about here ---

The age and gender effect

We found evidence of a greater positive change in the overall intended behaviour score among the younger population (Table EX4 in the Supplement). This trend was also observed in community attitudes towards people with mental disorders, which seemed to have slightly improved among younger adults

compared to older adults between 2019 and 2022 (Table EX8). Additionally, self-recognition of having mental health problems improved among younger adults who screened positively for anxiety disorders (Table EX20). However, age did not appear to influence self-recognition among those with depression or suicide risk (Table EX16 and Table EX24). For individuals who screened positively for alcohol-related problems, self-recognition improved among older adults, while it deteriorated among men between 2017 and 2022 (Table EX11 and Table EX12).

Association between self-understanding of mental health problems and stigma

We found significant correlations between self-recognition and stigma measures in the 2022 sample. SELF-I was weakly associated with the composite CAMI score, $r(3061) = .13$, $p < .01$. A slightly stronger correlation was found between SELF-I and the reported behaviour composite score, $r(3061) = .24$, $p < .01$, and SELF-I and the intended behaviour score, $r(3061) = .23$, $p < .01$. For an overview of the correlations (Table EX 26).

Discussion

Our data suggests that after the Covid-19 pandemic, Czech adults reported more frequent past contact as well as intended future contact with people with mental health problems. Additionally, our data suggest increased recognition of own mental health issues in this population. Those who screened positively for depression, anxiety, or suicide risk were more likely to self-identify as having a mental health problem. However, we note the opposite outcome when it comes to those with alcohol related mental health problems, where self-recognition has somewhat decreased. Community attitudes towards those with mental illness have not changed according to our data.

It appears that in our samples, the Covid-19 pandemic might have served as a catalyst for increased mental health literacy concerning common mental health issues, such as depression and anxiety, as expressed by better recognition of the presence of these problems in society and their manifestation within individuals. We found increased rates of reported past contact with people with mental health problems, greater readiness to acknowledge one's own mental health issues, and better-intended behaviour towards individuals with mental health issues. Past research already suggested that increased contact with people with mental health issues is linked to a greater intention for future contact (Evans-Lacko et al., 2013).

We did not observe a significant change in attitudes towards people with mental health problems. Previous research on stigma in the Czech general population from 2013 to 2019 indicated an improvement in attitudes, while intentions for future contact with individuals with mental health problems lagged behind (Winkler, Formánek et al., 2021). These changes were to some extent associated to the Czech national anti-stigma program 'Na rovinu' (On the Level), which specifically aimed to reduce stigma and discrimination against people with mental disorders, particularly severe ones like schizophrenia. Implementation of the On the Level program has been limited during the pandemic because of the social isolation measures in place. It is possible that the program still maintained some positive effects on population stigma, resulting in no negative change in attitudes, which seem to happen in England after Time to Change program was stopped. In contrast, the positive changes identified in the current study, especially regarding self-recognition of mental health issues, pertain more to common mental health problems, suggesting a shift in personal awareness rather than public attitudes towards people with severe mental illnesses.

We assume that improvements in population mental health literacy might be linked to the rise in common mental health problems in the general population during the pandemic (Potočár et al., 2023), which triggered public debate about mental health not just in Czechia but internationally. We assume that the increase of mental health problems in the general population during the pandemic may have had an impact on individuals' mental health literacy and perception of mental health issues in themselves. This would be in line with research on the impact of Covid-19, which found increase in awareness of mental health issues and improvements in believes on the cause and development of mental illness (O'Connor 2021, Huggard and O'Connor 2023). While this connection cannot be conclusively established based on our study's data, it merits further investigation.

Correct identifying of mental health issues is considered one of the key components of mental health literacy (and so is the above-mentioned stigma) (Jorm, 2012). Based on our data, increased self-identification seems to be present only for depression, anxiety, and suicide risk but not for alcohol use disorders. However, the distribution of the SELF-I data has shifted notably, becoming much less centralized. We speculate that this change might be due to increased MHL, which may have reduced uncertainty and, in turn, resulted in a less centralized distribution. To understand this phenomenon, we can draw from studies on general attitudes towards alcohol usage in eastern European countries and cultures, where alcohol misuse is often considered within norm compared to other countries or cultures (Popova et al., 2007; Simons-Morton et al., 2009) and that might somewhat explain why alcohol related problems are not considered as mental health problems by the Czech population. Another part of the explanation might be that alcohol use disorder remains a condition with particularly severe stigma. Self-identifying as having an alcohol problem might thus carry a particularly high risk of self-stigma (Schomerus et al., 2019).Trend studies in the U.S. and Germany have shown that, while the stigma of depression has somewhat diminished (Schomerus et al., 2022), this is not the case for alcohol use disorder (Pescosolido et al., 2021; Schomerus et al., 2021).

Our study has several strengths, including the use of representative samples, established measures, and good reliability across all samples. However, it is not without limitations. First, it is possible that the noted changes in social distance were due to social desirability bias rather than a genuine change in public attitudes. However, if this was the case, we assume that there would be also changes in attitudes as assessed by CAMI. Second, the cross-sectional design means that we cannot determine the individual changes any of the outcomes or the causal pathways of these changes. Thirdly, it's important to note that our assessment did not cover all four components of mental health literacy. While we did evaluate help-seeking behaviour in our previous study based on the same datasets, the examination of components related to understanding mental disorders and their treatment, as well as the ability to maintain good mental health, was assessed only partially. It could be argued that heightened levels of self-recognition of one's mental health issues and reported interactions with individuals facing mental health challenges may only serve as proxies for these components.

Conclusion

We have observed some improvement in population mental health literacy, especially among younger adults. However, considering the societal burden of mental health problems on one hand and low availability of professional mental health services, mental health literacy still remains worryingly low. To tackle mental health issues of global populations we recommend that governments and societies invest

in mental health literacy programs and make them available everywhere people naturally find themselves, including in school facilities, workplaces, primary health care settings, social care facilities, and online.

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Figures and Tables: Changes in stigma and population mental health literacy before and after the Covid-19 pandemic: analyses of repeated cross-sectional studies

Table 1

Descriptive socio-demographic statistics of the weighted samples across data collections

		2017 (n=3301)	2019 (n=1077)	2022 (n=3063)
Age, mean (SD)		48.84 (17.2)	48.04 (16.4)	49.3 (16.9)
Gender, n (%)	Female	1692 (51.3 %)	525 (48.7 %)	1496 (48.8 %)
	Male	1609 (48.7 %)	552 (51.3 %)	1567 (51.2 %)
Education, n (%)	Elementary	287 (8.7 %)	121 (11.3 %)	329 (10.7 %)
	Lower secondary	1294 (39.2 %)	378 (35.1 %)	1037 (33.9 %)
	Upper secondary	1165 (35.3 %)	387 (35.9 %)	1045 (34.1 %)
	University	554 (16.8 %)	191 (17.7 %)	652 (21.3 %)
Size of the place of residence, n (%)	< 5000	1258 (38.1 %)	414 (38.5 %)	1226 (40 %)
	5000 – 99 999	1337 (40.5 %)	427 (39.7 %)	1191 (38.9 %)
	100 000 and more+	705 (21.3 %)	236 (21.9 %)	646 (21.1 %)
Work status, n (%)	Employed	1500 (45.4 %)	552 (51.3 %)	1567 (51.2 %)
	Self-employed	166 (5 %)	78 (7.3 %)	260 (8.5 %)
	Unemployed	125 (3.8 %)	23 (2.1 %)	68.5 (2.2 %)
	Student	129 (3.9 %)	52 (4.9 %)	143 (4.7 %)
	Retired	896 (27.1 %)	306 (28.4 %)	787 (25.7 %)
	Other	166 (5 %)	65 (6.1 %)	238 (3.9 %)
	Parental leave	111 (3.4 %)		119 (3.9 %)
Income category (CZK) , n (%)	20000 or less1 (lowest)		79 (7.3 %)	176 (5.8 %)
	20001-300002		240 (22.3 %)	852 (27.8 %)
	30001-400003		368 (34.1 %)	682 (22.3 %)
	40001 or more4 (highest)		170 (15.8 %)	742 (24.3 %)
	NA		220 (20.5 %)	
M.I.N.I disorders, n (%)	Alcohol use disorder	349 (10.8 %)		308 (10.7 %)
	Anxiety	260 (7.8%)		235 (7.7 %)
	Depression	132 (4 %)		151 (4.9 %)
	Suicide risk	126 (3.9 %)		193 (6.3 %)
	None	2645 (79.8 %)		2481 (80.1 %)
CAMI score		-	40.82 (6.8)	40.92 (7.5)
RIBS score		-	11.20 (4.2)	12.10 (3.7)

Table 2

Regression models assessing the CAMI score and the RIBS sore in 2019 (n=1077) and 2022 (n=3063)

		CAMI score				RIBS score			
		Estimate	SE	t-value	p-value	Estimate	SE	t-value	p-value
Intercept		36.89**	0.95	39.02	< .01	9.8**	0.51	19.3	< .01
Year (2022)		0.34	0.29	1.15	0.25	1.15**	0.15	7.62	< .01
Gender		1.91**	0.27	7.18	< .01	0.69**	0.14	4.98	< .01
Age		0.008	0.01	0.62	0.54	-0.004	0.006	-0.55	0.58
Size of place of residence		0.15	0.17	0.92	0.36	-0.08	0.09	-0.88	0.38
Education		0.85**	0.15	5.7	< .01	0.21**	0.07	2.84	< .01
Income		-0.01	0.21	-0.7	0.94	0.16	0.11	1.5	0.13
Work status	Self-employed	-0.53	0.53	-1.01	0.31	0.211	0.28	0.75	0.45
	Unemployed	-1.39	0.91	-1.53	0.13	-0.09	0.44	-0.2	0.84
	Student	-0.81	0.82	-0.99	0.32	0.4	0.43	0.92	0.36
	Retired	0.2	0.5	0.4	0.7	0.13	0.25	0.53	0.59
	Other	0.4	0.54	0.75	0.45	0.72**	0.27	2.71	< .01

Note: The referential year was 2019, gender category 'male' and work status 'employed'.

Table 3

RIBS - reported behaviour items (1-4) in 2019 and 2022

RIBS reported behaviour item, n (%)	**2019**		**2022**		**X^2**	**DF**	**p-value**
	Yes	**No**	**Yes**	**No**			
Are you currently living with, or have you ever lived with someone with a mental health problem?	77 (7.1 %)	1000 (92.9 %)	327 (11.1 %)	2614 (88.8 %)	13.3	1	< .01
Are you currently working with, or have you ever worked with someone with a mental health problem?	99 (9.19 %)	978 (90.8 %)	472 (17.4 %)	2246 (82.6 %)	39.7	1	< .01
Do you currently have, or have you ever had a neighbour with a mental health problem?	138 (12.8 %)	939 (87.2 %)	433 (16.4 %)	2209 (83.6 %)	7.3	1	< .01
Do you currently have, or have you ever had a close friend with a mental health problem?	170 (15.8 %)	907 (84.2 %)	637 (22.2 %)	2226 (77.8 %)	19.7	1	< .01

Figure 1

The density distribution of the SELF-I score in 2017 and 2022, of participants scoring positively for alcohol use disorder, anxiety, depression or suicide risk