

# Mental Health of Self-Employed

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We included 26 (three longitudinal and 23 cross-sectional) population-based studies of good quality, with data from 3,128,877 participants in total. A Swedish national register evaluation with 25 years follow-up, showed a higher incidence of mental illness among the self-employed compared to white-collar workers, but a lower incidence compared to blue-collar workers. In the second longitudinal study from Sweden the self-employed had a lower incidence of mental illness compared to both blue- and white-collar workers over 15 years, whereas the third longitudinal study (South Korea) did not find a difference regarding the incidence of depressive symptoms over 6 years. A higher prevalence of mental disorders among the self-employed compared to employees was true for the Asian and older European cross-sectional studies. However, most of the European cross-sectional studies from the last decade found lower or similar prevalence estimates among the self-employed. The majority of the American and Australian cross-sectional studies found a similar prevalence of mental disorders among the self-employed and the employees.

Keywords: incidence ; mental disorders ; mental health ; mental illness ; prevalence ; self-employed ; small business

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## 1. Introduction

A considerable proportion of the global workforce consists of self-employed individuals <sup>[1]</sup>. In 2018, the proportion of self-employed among the Organisation for Economic Cooperation and Development (OECD) countries varied from 6% in the United States, 32% in Spain and to 52% in Columbia <sup>[2]</sup>. Some individuals actively choose self-employment for the greater independence compared to being an employee, whereas for others self-employment is the only way out of unemployment <sup>[3]</sup>. However, both groups are exposed to economic uncertainties <sup>[3][4]</sup>. Due to their autonomy, the self-employed may be more committed and have a higher job satisfaction in comparison to employees, but often they are also exposed to more work-family conflict and longer working hours <sup>[5]</sup>. The more unregulated the market, the higher the competitive pressure tends to be for the self-employed. Sickness presenteeism is a considerable health risk and seems to be displayed more often by the self-employed <sup>[6]</sup>. These conditions may cause chronic stress leading to negative mental and/or physical health effects <sup>[3]</sup>.

Mental illness, with a 12-month prevalence of 18–30% globally and 27% in Europe is the primary reason for prolonged sick leave in the OECD-countries <sup>[6][7]</sup>. Thus, a large proportion of costs are explained by absenteeism or a loss of productivity due to mental disorders <sup>[7]</sup>. According to Leignel et al., 80% of all American employed and self-employed workers experienced work-related stress <sup>[8]</sup>. Apart from working hours, general job and income uncertainties, psychosocial stress may also be related to high job requirements, insufficient human resources and insufficient training and skills to meet work-related challenges <sup>[8]</sup>. Perceived psychosocial stress can lead to mental health problems, increased absenteeism and decreased productivity <sup>[8][9][10]</sup>. Some studies showed that the self-employed, especially small business owners, may experience more negative stress than employed workers <sup>[11][12][13][14]</sup>. Besides other mental health problems <sup>[11]</sup>, a possible consequence of stress at the job is depression, a condition that has been increasing in recent decades <sup>[7][15]</sup>. Whether the prevalence of anxiety and depressive disorders is higher or lower among the self-employed compared to employed workers seems unclear <sup>[15][16][17][18]</sup>.

Suicide is significantly associated with mental disorders, with over 90% of affected individuals having suffered from a mental disorder, such as affective disorders, schizophrenia or personality disorders <sup>[19][20][21]</sup>. Occupational risk factors for suicide include high work demands or overwork in combination with a low level of job autonomy, or financial problems <sup>[19][22]</sup>. There are some indications for more suicidal ideation or suicides among the self-employed <sup>[23][24]</sup>.

In general, the current literature about the extent of mental health problems among the self-employed is heterogeneous, incomplete and partly contradictory <sup>[3][25]</sup>. A stringent systematic review including adequate population-based studies as a basis for the development of targeted prevention strategies is lacking. Provisions in occupational health and safety legislation, such as regular risk assessments and occupational health management, generally do not cover the self-employed. Self-employment and atypical employment are increasing worldwide at the same time as rapid technological and social change and increasing global competition, thus requiring special attention from social policy and preventive medicine decision makers <sup>[26]</sup>.

## 2. Mental Health of Self-Employed

### 2.1. Longitudinal Studies

Whereas both Swedish longitudinal register studies showed that the self-employed were less likely to develop mental disorders than blue-collar workers their results regarding the comparison of the self-employed's mental health with white-collar employees seemed contradictory. Different definitions of the outcome in the two studies may have been responsible. The national registry study by Tiikkaja et al., which analyzed data from the entire Swedish population, showed that self-employed had a higher incidence of hospitalization for a psychiatric diagnosis than white-collar employees [27]. In contrast, the twin registry study by Samuelson et al. showed that self-employed workers were less likely to receive a disability pension due to psychiatric illness than white-collar employees [16]. One possible explanation for the difference could be that the self-employed with mental disorders are less likely to file disability pension claims than employees. Employees with mental illnesses may receive assistance in filing applications through intervention from their company by supervisors, colleagues or company medical officers. This may lead to more frequent or earlier recognition compared to the self-employed who lack this workplace environment for support. The amount of the expected disability pension may also play a role. In Sweden, the self-employed appear to have twice the poverty rate (defined as below 60% of average income) than employees [28]. Since a disability pension represents only about 80% of the average income [29], the associated financial losses could be another explanation for why the self-employed are less likely to file such claims than employees.

The comparison of the two Swedish studies showed an overall better methodological quality of the national register study by Tiikkaja et al. The authors of the twin registry evaluation, Samuelson et al., pointed out several fundamental methodological limitations of their study. In particular, the results for mental diagnoses should be interpreted cautiously because the precision of the outcome estimators was low (as indicated by relatively wide confidence intervals). They also emphasized the regional differences in Sweden with respect to disability pensions. For example, the incidence for disability pensions due to mental health diagnoses was higher in western and southern Sweden than in the rest of the country. Despite adjustment for age, sex and family factors, the reasons for this difference remain unclear. There is evidence that the type of treatment, forms of rehabilitation, or decisions of local social insurance agencies about the granting of disability pension may differ between regions [30][31]. In addition, it should be emphasized that the study population of the twin registry study is in principle not generalizable to Sweden. Only twins born in Sweden are included in this registry. Not including migrants, who are more likely to receive disability pensions due to mental health diagnoses than non-migrants, would probably have influenced the results of their study, especially since migration status might also be associated with self-employment [32][33]. Compared with the twin registry study, Tiikkaja's national registry study of hospitalizations included the entire Swedish population, regardless of possible migration background [27].

Unlike the two Swedish studies, the third longitudinal study, a study from South Korea, showed no difference between self-employed and employed persons. This could be due to the fact that Jang et al. only looked at depressive symptoms as an outcome while the Swedish study included all major mental disorders [34]. However, it is also conceivable that the definition of depressive symptoms as an outcome in the South Korean study resulted in no difference between the two groups. Depressive symptoms were assessed with an established instrument, the Center for Epidemiologic Studies Depression Scale (CES-D 11), but they were analyzed for the present study with a much lower cut-off than recommended in the validated version of the CES-D [35][36]. With a too low-threshold cut-off and thus the recording of rather mild and moderate depressive symptoms, differences in the severe forms of depression, which may have led to hospital admissions, were no longer discernible. Other mental disorders were not examined. Furthermore, the observation period of 6 years in the South-Korean study may have been too short to detect long-term mental health effects. In comparison, the two Swedish studies were much longer with 15- and 25-year follow-up assessments, respectively [16][27][34]. It is also possible that the Korean study did not find an association between self-employment and depression or anxiety, because it did not differentiate between white- and blue-collar employees. However, future follow-up assessments of this South Korean longitudinal study considering different employment categories, and assessing other mental disorders as well may lead to findings that might be more comparable with those from the national Swedish register study by Tiikkaja et al. [27].

In general, more longitudinal studies examining the influence of self-employment on mental disorders in different settings are needed as this study design is clearly superior to cross-sectional designs. Cross-sectional studies assess the exposure (e.g., employment status, or other potentially influential factors) and the outcome (e.g., mental disorders) only at one point in time. The validity of retrospectively collected information on the beginning and severity of exposure and/or outcome is likely to be limited by recall or other information bias. Thus, in cross-sectional studies it is challenging to assess clearly if the exposure started before the outcome or vice versa. On the contrary, the strength of longitudinal (i.e., cohort) studies is the prospective collection of data that can be regarded as more valid information. Cohort studies allow judging the temporal cause of both the exposure(s) as well as the onset and development of a new disease and its severity. In case of assessing the employment status in population-based studies over years or decades, a cohort study will also allow to assess more validly possible changes between self-employment and employment. In other words, longitudinal studies would much better allow examining whether the employment status may cause mental disorders or whether mental disorders may cause or force individuals to become self-employed, because employed positions are more difficult to obtain or to keep.

## 2.2. Cross-Sectional Studies

The difference between the older and more recent European studies may be related to changes in the social security system of some European countries in the last 10–20 years. These changes include measures that provide better coverage for accidents at work, disability, and unemployment for the self-employed [26]. In addition, since 2005, the self-employed in Europe have benefited from more favorable tax and social security conditions and have had to overcome fewer bureaucratic hurdles than before [29][37]. From 2005 to 2008, European self-employed workers were subsidized to the tune of EUR 750 million [29]. Since 2003, Germany has had subsidy programs for start-ups (“Ich-AG”) to facilitate the path to self-employment [38]. Effects of these subsidies may have led to improved living conditions, less work-related stress, and lower prevalence of mental illness among the self-employed in recent years. However, there are no comparisons within the same European countries over the past 20 years that specifically examined the impact of these programs on the mental health of the self-employed. The German study by Stahmeyer et al. is an exception. They evaluated physician-diagnosed depression among members of one of the largest German statutory health insurance companies. The results showed that the prevalence of depression in the overall population increased from 2006 to 2015. However, the increase over this period was much smaller among the self-employed, who now appear to be less affected by depression compared with employees than in the initial analysis with data from 2006 [45].

In contrast to Europe, the Asian studies, all from South Korea and published from 2016 to 2019, showed that the self-employed were more frequently affected by depression and self-rated poor general mental health than employees [17][18][39]. Unlike Europe, which has compulsory social insurance for all workers (self-employed and salaried), self-employed workers in South Korea are not required to purchase insurance by law. However, they can voluntarily choose from different social insurances and acquire, for example, coverage for work injury or coverage for unemployment [40][41][42]. Further, employment has become more unstable after the financial crisis in 1997, forcing many waged-workers to retire in their mid-40 s and start self-employment [43][44]. Many waged-workers who entered self-employment after retirement often quit self-employment because they could not overcome competition from other self-employed and large corporations. This may have contributed to the high risk of mental illness among the self-employed in South Korea.

The risk of mental illness among the self-employed may differ from country to country depending on the specific socioeconomic and employment situation. It is important to analyze the mental health risk taking into account this situation in each country. The studies from North/Central America and Australia did not show a better mental health status of the self-employed compared to employees. However, the different socioeconomic conditions for the self-employed in different countries need to be considered. In Central America, there is generally no social insurance for the self-employed [45]. Furthermore, in low-income countries, the self-employed appear to have a significantly lower average income than employees [46]. Since income is a strong motivator for entrepreneurs, the goal of maximizing profits in this group of individuals often comes at the expense of health [11][47]. However, health risks for the self-employed also exist in economically stronger countries, such as in North America. For example, in the United States, twice as many self-employed individuals are uninsured compared to employees. Programs, such as “Affordable Care Act” (since 2014) are intended to mitigate this discrepancy in recent years [48]. However, the positive effects of these offerings were likely not yet incorporated in the studies included in the present review (from 2013 to 2016). Despite relatively good income protection for older people, only 28% of the younger unemployed individuals receive unemployment benefits in North America. In comparison, 64% of the unemployed in Western Europe receive government assistance. In Australia, the self-employed are less likely to be covered by health and social insurance than employees, as the employer often bears the cost of contributions, whereas the self-employed must pay them out of their own pocket [49][50]. Furthermore, the self-employed receive the fewest health insurance benefits in Australia compared to employees [49].

Self-employed sole proprietors showed lower, whereas entrepreneurs with personnel showed higher stress levels than employees [14][51]. These results are in line with Cocker et al. (2013), who described high or very high psychological distress among 37% of owners or managers of small-to-medium enterprises. This study was not included in our review because of the lack of an employed control group [7]. Several studies showed that amongst workers more responsibility at the job may reduce the level of stress experienced by workers [7][12][13][14][52][51][53]. Among some self-employed individuals, in particular entrepreneurs, a greater autonomy (decision-making latitude) may actually decrease stress levels [13][54]. This may explain part of the inconsistent results of the studies examining sole proprietors and small business owners. Future research on mental health effects of the self-employed needs to examine these relevant subgroups among the self-employed further, particularly with regard to the role of sociodemographic factors such as gender, educational level and family status.

In addition to the division of the self-employed into sole proprietors and those who employ others, the self-employed may also be classified into groups according to their professions. A study from Sweden showed clear differences in mortality rates among the self-employed of different industrial sectors. Suicide, for example, was markedly lower among the self-employed in personal services compared with those who worked in agriculture or trade [55]. These results were confirmed by a South Korean study (Yoon JH 2016) that reported a lower prevalence of suicidal ideation among self-employed versus employed sales and service workers [56]. On the contrary, another South Korean study found a higher prevalence of suicidal ideation among the self-employed. The lack of stratifying the results for specific subgroups may explain the differing findings [24]. For medical doctors, a study from Germany found better outcomes in terms of less burnout among

the self-employed when compared to employed physicians [57]. Among occupational drivers in a study from Taiwan, the self-employed (usually sole proprietors) showed a higher prevalence of neurotic problems, psychiatric diagnosis and substance misuse compared to employed drivers [58].

### 3. Conclusions

As a basis for targeted prevention strategies, further longitudinal population-based studies in different settings of self-employment are strongly required to understand the development of mental health disorders for specific self-employment categories such as sole proprietors, small entrepreneurs, farmers, family businesses and others.

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