The Effects of Diagnosing a Young Adult with a Mental Illness: Evidence from Randomly Assigned Doctors

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Abstract

In the developed world, the diagnosis of mental illness is widespread among young adults. This paper estimates the long-term causal effects of being diagnosed during young adulthood for those at the margin of diagnosis. We follow all Swedish men born between 1971 and 1983 matched to administrative panel data on health, labor market, and family outcomes to estimate the impact of a mental illness diagnosis on subsequent outcomes. Exploiting the random assignment of 18-year-old men to doctors, we find that, for people at the margin, a mental illness diagnosis increases the future likelihood of internal death, hospital admittance, being sick from work, and unemployment while also lowering expected income and the propensity to be married or have children. We find that diagnosis increases the use of psychiatric medication in the 36 months right after diagnosis. A possible interpretation of our results is that the amount and type of treatment used for marginal diagnosis may be inadequate, or inappropriate.

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1 Introduction

In developed nations, the prevalence of mental illness diagnoses among young adults is widespread. For instance, recent survey evidence indicates that 7.9% of young adults in the United States use antidepressant medication (Brody and Gu (2020)). Similarly, in Sweden, our data reveals that 8.5% of 18-year-olds were diagnosed with a mental illness in 2015.[1] Furthermore, in a policy response to mental health concerns exacerbated by the pandemic, the U.S. Department of Health and Human Services has recently recommended the implementation of mental health disorder screenings for all individuals below the age of 65, including adolescents aged 8 to 18 (Baumgaertner (2022)). Motivated by these observations, this paper estimates the long-term effects of being diagnosed with a mental illness diagnosis during young adulthood.

How can a diagnosis affect long-run outcomes?

On the one hand, diagnosis opens the path to treatment and medication which has been shown to have positive effects. For example, treatment with anti-depressant medication is associated with reduced rates of suicide (Ludwig, Marcotte and Norberg (2009)), lower anxiety (Stefánsdóttir, Ivarsson and Skarphedinsson (2022)), and increased employment (Galarraga et al. (2006)). On the other hand, some evidence finds medication prescribed to treat mental illness to have no effect (Leichsenring et al. (2022) and Currie, Stabile and Jones (2014)) or unintended negative effects. For example, there is evidence that adolescents who are diagnosed with a mental illness receive drugs that are not FDA-approved for their age (Cuddy and Currie

[1] In 2018, one in five Australians were prescribed medicine to treat a mental health condition (Eek et al. (2021)). Among U.S. adults aged 18-34, 2.59% were given outpatient treatment for depression in 2007 (Marcus and Olfson (2010)) and 10.9% had a mental health-related doctor visit between 2012-2014 (Cherry, Albert and McCaig (2018)). Among adults aged 20 to 25 in Ontario Canada billing records indicate that in 2017 13.7% were diagnosed with anxiety or depression (Phillips and Yu (2021)).

(2020)). Furthermore, in 2007, the FDA ordered that all antidepressant medications carry a warning about an increased risk of suicidal symptoms in young adults 18 to 24 years of age (Friedman and Leon (2007). Psychotropic medication has been shown to cause weight gain and metabolic abnormalities (Mazereel et al. (2020)). ADHD medication is associated with sleep problems and mood disturbances (Cascade, Kalali and Wigal (2010)) and has been linked to sudden unexplained deaths in children and adolescents (Gould et al. (2009)).

Besides medication some evidence suggests that the stigma of being diagnosed with a mental illness can negatively affect a person's life through the way others treat them (Markowitz (1998) Bharadwaj, Pai and Suziedelyte (2017)) or the way a person perceives themselves (Drapalski et al. (2013) Mechanic et al. (1994) Yanos, Roe and Lysaker (2010)). In addition, future medical treatment may be adversely affected if signs of physical illness are misattributed to the previously diagnosed mental illness (Thornicroft, Rose and Kassam (2007)).

Challenges to Answering the Question

Despite the prevalence with which mental illness is diagnosed in young adults, little is known about its long-term effects on their lives. The absence of this evidence stems from three key challenges. First, in most empirical settings, estimating an association between diagnosis and long-term outcomes will not capture an accurate measure of the effect of diagnosis because people self select into medical assessment. If people select into medical assessment based on attributes that are unobserved by the econometrician, these differences can account for a correlation between diagnosis and life outcomes. We address this challenge by exploiting the fact that between 1986 and 2006, Sweden had mandatory military conscription for all 18-year-old men. During conscription, *all* individuals were screened for mental health disorders to determine their fitness to serve in the military.

Second, there are few datasets that include information about *both* diagnosis and a broad range of long-term economic and life outcomes. We link the Swedish enlistment data to six administrative datasets that track health, labor market, and family outcomes for the Swedish population from 1960 to 2016. This enables us to provide a comprehensive account of the effect of diagnosis by using a wide range of outcomes measured over age horizons from 18 to 38 years of age.[2]

Third, correlations between diagnosis and long-term life outcomes are likely to be due to other factors, such as a person's underlying mental health, and therefore cannot be interpreted as causal effects. To overcome this identification challenge, we implement an examiner-type empirical strategy that exploits the quasi-random assignment of conscripts to doctors who vary in their tendency to diagnose a mental illness as an instrumental variable for the diagnosis.[3] We measure the tendency to diagnose mental illnesses with a leave-out measure based on the diagnoses of all conscripts reviewed by each doctor at the same regional conscription office within the same year. This measure is highly predictive of the diagnosis of a mental illness during conscription and is uncorrelated with a conscript's predetermined characteristics and with a doctor's tendency to diagnose physical illness.

Interpretation of Estimates

Interpretation of our causal estimates is complicated by the fact that the effect of a diagnosis for a person at the margin of diagnosis is likely to differ from the average person who is diagnosed because the net benefit of diagnosis will vary based

[2]By contrast, the data available to previous researchers who study the economics of mental health is limited to a narrow range of outcome measures (e.g., suicide (Berndt et al. (2015) and Ludwig, Marcotte and Norberg (2009)) and emergency room visits Currie and MacLeod (2020)).

[3]The empirical strategy we employ is essentially the same as that used by papers to study the causal effect of incarceration (Kling (2006), Aizer and Doyle (2015), Dobbie, Goldin and Yang (2018), and Bhuller et al. (2018)), bankruptcy protection Chang and Schoar (2008), (Dobbie and Song (2015), and Dobbie, Goldsmith-Pinkham and Yang (2017)), military conscription Hjalmarsson and Lindquist (2019), disability insurance (Dahl, Kostøl and Mogstad (2014), child foster care (Doyle (2007) and Doyle (2008)), and high-cost debt Liberman, Paravisini and Pathania (2016).

on a person's underlying mental health. For example, Paris (2020) argues that severe cases of mental illness will benefit from diagnosis and treatment while mild cases may experience no net benefit and may even be harmed. Our empirical strategy yields estimates of local average treatment effects (LATE) of diagnosis among compliers of the instrument; that is, individuals at the margin of diagnosis who are diagnosed only because they are assigned to a doctor who is more prone to diagnose a mental illness.[4] Measuring long-term effects for the person at the margin of diagnosis has the benefit that this has the potential to help assess the optimality of policy changes such as an increase in resources for treatment or a revision of the threshold for diagnosis.

Results Summary

Overall, our results indicate that the diagnosis of a mental illness at age 18 has negative long-term effects on the marginal patient. We start by measuring the effect on outcomes at age 30.[5] We find that diagnosis causes a statistically significant increase in death from internal illness,[6] visiting the hospital as an outpatient, and reporting sick from work. We also find a statistically significant increase in unemployment lasting longer than twelve months and a decrease in the likelihood of being married. Most other point estimates (suicide, schooling, income, living with parents) also indicate a welfare reduction but with less statistical power. We then measure the effect of diagnosis on our set of outcomes at each age from 18 to 38. Most statistically significant estimates indicate a reduction in welfare (increased morbidity, increased illness, higher unemployment, and decreased likelihood of marriage). While none of these results, in isolation, provides a definitive measure of welfare, in combination,

[4] In order to interpret our coefficients as local average treatment effects we make the identifying assumption of monotonicity. We provide evidence to support this assumption in Section 3.

[5] We choose this age as a starting point because other research has shown a high correlation between outcomes at age 30 and subsequent lifetime labor-market outcomes e.g. permanent income (see Böhlmark and Lindquist (2006) for Sweden and Haider and Solon (2006) for the US).

[6] common internal causes of death among this group are e.g. mental and behavioral disorders due to opioids, multiple drug use, and epilepsy.

they indicate that the marginal patient is made worse off by diagnosis.

Accounting for the Effect of Military Service

By design, in our empirical setting, the diagnosis of a mental illness reduces the chance of undertaking military service by approximately 32.9%. In turn, military service can potentially alter economic outcomes, for example by affecting individuals' education or human capital, or by creating personal networks.[7] We rule out the possibility that our effects are primarily mediated by the (avoidance of) military service by separately estimating the causal effect of military service on the full set of outcomes in our primary analysis. We do this by following the empirical strategy first used by Hjalmarsson and Lindquist (2019). We take the estimated effect of military service multiplied by the probability reduction due to diagnosis and subtract this from our original estimate. The resulting estimated "direct" effect of diagnosis, after removing the effect of military service, indicate that diagnosis causes a statistically significant increase in incidence of internal death (1.1 percentage points), being admitted to hospital as an outpatient (18.6 percentage points), and the expected number of sick days (8.9 days). In addition, the likelihood of a spell of long-term unemployment is increased 8 percentage points while the likelihood of being married is reduced by 8.9 percentage points).[8] Once again, the effects across all outcomes and age horizons is most consistent with diagnosis being harmful for the marginal patient.

Mechanism

We provide suggestive evidence related to three channels through which a diagnosis may affect a person's life. First we show that diagnosis causes an increased use of psychiatric medication in the twenty four months after screening occurs. This supports the possibility that the the negative long-term outcomes we observe could

[7] See, e.g., Angrist (1990); Angrist and Chen (2011); Imbens and Klaauw (1995); Grenet, Hart and Roberts (2011); Bauer et al. (2012); Card and Cardoso (2012).

[8] All points estimates measured for outcomes at age 30.

be unintended side effects of this medication. This is also consistent with our finding that morbidity due to internal illness is higher as a result of diagnosis. Second, we show that some of our primary results are only statistically significant for conscripts whose parents did not have a previously-diagnosed mental illness. This suggests that the effect of diagnosis may operate by altering a person's perception of themselves since for these conscripts diagnosis is likely to alter their self-perception the most. Finally, we show that the effect of diagnosis is not lower for conscripts from families with higher social economic status. This suggests that diagnosis does not operate by constraining a person's mental or financial bandwidth.

The fact that the military service medical interview is highly structured and is conducted only in order to determine eligibility for military service is a distinct advantage in isolating the causal effect of diagnosis. Doctors in our setting do not undertake any treatment or prescribe any medication; instead, all diagnoses are referred to physicians outside the military.[9] This limits the possibility that differences in doctor treatment skill explain the variation caused by diagnosis tendency.

Our paper is closely related to a handful of other recent papers that have estimated the causal effect of a marginal diagnosis. A marginal diagnosis has been shown to have no beneficial effects in the case of ADHD Persson, Qiu and Rossin-Slater (2021) and diabetes (Alalouf, Miller and Wherry (2019) and Iizuka et al. (2021)) and has been shown to have positive effects for babies being classified as low birth weight Almond et al. (2010).

Our paper is also related to a broad literature that argues whether mental illness is under or over diagnosed, however most of the literature focuses on providing evidence of an incorrect labelling of an underlying condition rather than estimating the effects

[9] As Currie and MacLeod (2020) stress, both of these factors will affect patient outcomes and are ambiguously correlated.

of diagnosis. Schwandt and Wuppermann (2016) show that ADHD diagnosis rates vary among German children either side of school age cutoffs, indicating misdiagnosis. Several papers in the medical literature ask whether patients diagnosed with a mental illness meet an established set of criteria (see for example Mojtabai (2013), Aragones, Pinol and Labad (2006), Merten et al. (2017), Asch et al. (2003), and Paris (2020)).

In contrast to the focus of our paper on diagnosis, there are several papers that estimate the economic effects of mental illness (see for example Biasi, Dahl and Moser (2021), Bartel and Taubman (1986), and Doran and Kinchin (2017)).

The remainder of the paper is structured as follows. Section 2 provides an overview of the empirical setting, describes the data, and presents summary statistics. Section 3 describes our empirical strategy, and Section 4 presents the results. Section 5 describes the tests to disentangle the effects mediated military service, Section 6 provides evidence on the mechanism through which diagnosis affects outcomes, and Section 7 concludes. Additional tables and figures are available in an Internet Appendix.

2 Setting, Data and Summary Statistics

2.1 The Swedish Military Service Enlistment Process

Our empirical strategy is based on the mandatory military enlistment process for Swedish males. Enlistment was instituted in Sweden in 1901, operated throughout the years of our sample period, and remains in place today. Under this program, all non-disabled Swedish males were required to report to an assigned regional test office shortly after turning 18 to determine if they would be required to serve in the Swedish military and, if so, in what service category. The specific reporting date and office was based only on the conscript's month and year of birth, municipality of residence

at age 17, and, in some cases, the expected date of high school graduation.[10]

The testing procedure typically took two days. Day one began with a set of written tests measuring verbal, spatial, logical, and technical ability. Each conscript carried a folder containing personal records through each of these steps. When a conscript completed these tests, he placed his folder in a box to wait for a medical examination with a doctor. Within each regional test office, multiple doctors were on duty to conduct these examinations. The assignment of a conscript to a doctor within the office is orthogonal to the attributes of the conscript and was simply determined by the timing of when conscripts had completed their other tests and placed their file in the box, in combination with which doctor happened to be free to pick up the next file. We confirm the orthogonality of conscript attributes to doctor assignment formally in Section 3.2.2.

2.2 The Diagnosis of a Mental Illness

The medical examination assessed the physical and mental health of each conscript in order to determine if he was fit to serve. The doctors who conducted these medical examinations were all fully accredited general practitioners. The doctor did not have access to the conscript's prior medical history, although the conscript was permitted to bring a note or records from a personal physician. Each examination followed a detailed medical protocol that dictated the methods and questions to be used in the exam.[11] The doctor would record his/her diagnosis of any physical and/or mental illness(es) with a code from the International Classification of Diseases (ICD), combined with an assessment of the severity of each illness. All doctors used the same

[10] A fraction of men deferred enlistment by a year. Between 1997 and 2001, the fraction who deferred draft by one year was 20%. While deferment is endogenous, it does not threaten our identification strategy because it occurs prior to being assigned to a doctor and hence affects the pool of conscripts seen by high- and low-tendency doctors equally.

[11] The medical protocol is not publicly available to avoid conscripts training for the tests.

standardized system of diagnosis codes and severity scores. While each diagnosis code and associated severity score were not disclosed to the conscript, doctors are obliged to inform the conscript of any mental or physical illness diagnosis. In the case of a mental illness, the doctor would recommend the conscript to see a doctor outside the military in the Swedish regular health care system. The assessing doctor can not prescribe any medication or schedule any follow-up appointments with the conscript. If a conscript was diagnosed with an illness but was ultimately selected to serve in the military, the doctor responsible for the conscript's assigned unit would be informed of the diagnosis. On the second day of testing each conscript met individually with a test officiator who decided whether the conscript was fit to serve based on the previous evaluations, and if so, his assigned service category. Each man judged fit to serve left the center with an assigned service category and a starting date.

2.3 Data Sources

Our main analysis data are an individual-level merge of military service enlistment outcomes to health, labor market, and family outcomes. Data for the Swedish enlistment process are maintained by the Swedish Military Archive for enlistments occurring before 1997 and by the Swedish Defense Recruitment Agency for 1997 and later. The data correspond to multiple cross-sections of 18-year-old individuals and include a conscription center identifier and identifiers for the doctor, and officiator assigned to each conscript.

The data on the Swedish enlistment process is matched based on the conscripts' social security numbers to three distinct data sources; Statistics Sweden (background variables), the National Board of Health and Welfare (diagnoses and prescriptions) and the National Death Registry (dates and causes of death).[12] A list of definitions

[12]The merge process is conducted internally by the Swedish government agencies to preserve the

for all the variables used in our analysis is provided in Table A1.

2.4 Sample Selection

We make four sample restrictions to the data. First, we drop conscripts who lack information on their military service doctor.[13] Second, we select individuals who were drafted between 1987, the year ICD-9 was implemented in the Swedish military service, and 2001, since a new decision process was implemented after this year. We also dropped observations from the 1997 draft, because many of the mental-illness diagnoses are missing from the data in that year. Third, we restrict our sample to include individuals assigned to doctors who see a minimum of 500 conscripts per year to ensure we can measure their tendency to diagnose a mental illness accurately.[14] We also drop doctors who, after the 'seeing 500 conscripts' restriction is applied, are the only remaining doctors at their draft center in that year. After these restrictions, the analysis sample contains 400,104 unique individuals who are assessed by 102 doctors over 14 years. In any given year, there are a median of 25 doctors working in the six enlistment centers across Sweden. The median number of conscripts per doctor is 1,870.5 during the sample period. On average, each center by year has 7.34 doctors, while the median center by year has 5 doctors.

2.5 Summary Statistics

Table 1 presents summary statistics of the main variables used in our analysis for the full analysis sample. The first set of variables shows the characteristics observable

confidentiality of the data.

[13] The proportion of draftees who are not associated with a doctor's ID is stable over time throughout our sample, at around 2%.

[14] We have verified that our results are robust to alternative definitions of this cutoff, including 100 individuals and 1,000 individuals.

during military conscription. Overall, the proportion of individuals who are diagnosed with a mental illness at conscription is 2.85% in our sample. While 60.1% of all conscripts go on to do military service, this is percentage is 32.9% lower for those who are diagnosed with a mental illness. This raises the possibility that the causal effect of diagnosis operates by altering the probability of serving. This motivates the analysis in Section 5, which rules this out as a primary explanation for our results. The rest of Table 1 shows summary statistics for each of the outcomes we study.[15]

Table 2 summarizes the distribution of diagnosis in our sample by type and severity. 34% of conscripts who are diagnosed are deemed to have a mild mental illness. These are primarily accounted for by diagnosed cases of depression, neurosis, anxiety, and psychosomatic disorders such as stress-induced ulcers or high blood pressure. As we show below, the variation across doctors in their tendency to diagnose comes primarily from different propensities to diagnose these mild conditions.

3 Research Design

3.1 Preliminaries

We exploit variation in the diagnosis tendencies of quasi-randomly assigned doctors during military service enlistment as an instrumental variable for diagnosis. The empirical design identifies a local average treatment effect (LATE), i.e., the causal effect of a mental illness diagnosis for individuals on the margin of being diagnosed.

[15] Where the data allows, Table 1 shows the average of each outcome at age 30. Where data limitations make this impossible, we measure on years that are as close as possible to age 30.

3.2 Instrumental Variable Calculation

We construct our instrument using a residualized, leave-out measure of a doctor's diagnosis tendency, while accounting for potential systematic geographic and time variation in the tendency to diagnose. Let the diagnosis of mental illness for individual i, after removing enlistment center-by-year fixed effects θ_{ct}, be denoted by:

$$Diagnosis^{\star}_{ict} = Diagnosis_{ict} - \gamma\theta_{ct}. \tag{1}$$

We define Z_{ict} as doctor j's leave-out tendency to diagnose a mental illness for individual i as:

$$Z_{ict} = \frac{\sum_{k \in N_{cjt}} Diagnosis^{\star}_{kct} - Diagnosis^{\star}_{ict}}{|N_{cjt}| - 1}, \tag{2}$$

where N_{cjt} is the set of military service conscripts attended by doctor j in center c in year t.

Figure 1 presents a histogram of Z_{ict}, winsorized between -4% and 4%. The histogram demonstrates a substantial degree of variation in doctors' tendency to diagnose a mental illness relative to the average diagnosis rate of 2.85%.

For Z_{ict} to be a valid instrument of the diagnosis of mental illness, we assume, 1) that Z_{ict} predicts the individual-level diagnosis (a relevant first stage), 2) that Z_{ict} affects individual i's outcomes only through the diagnosis (an exclusion restriction), and 3) that assigning a conscript to a doctor with a higher higher (lower) value of Z_{ict} never makes a diagnosis less (more) likely (monotonicity). Below, we examine each assumption.

3.2.1 First Stage

To examine the first-stage relationship between a doctor's tendency to diagnose mental illnesses and an individual's propensity to be diagnosed with a mental illness, we estimate the following equation for individual i, assigned to doctor d working at center c in year t using a linear probability model:

$$Diagnosis_{ict} = \pi Z_{ict} + \gamma\theta_{ct} + \epsilon_{ict}. \tag{3}$$

The coefficient of interest is π, which measures the change in the probability of a mental illness diagnosis from being assigned to a doctor with zero tendency to diagnose to a doctor with tendency equal to one. Figure 1 presents the first-stage relationship between the residualized measure of doctor's tendency to diagnose a mental illness and the residualized probability of diagnosis, accounting for center-by-year fixed effects. The figure shows a local linear regression of an indicator for diagnosis of mental illness at conscription on Z_{ict}, together with a 95% confidence interval. The figure demonstrates that assignment to a doctor with a higher tendency to diagnose a mental illness leads to a higher probability of diagnosis.

Table 3, column 1 formalizes the intuition conveyed by Figure 1, presenting the results of regression model (3). Assignment to a doctor with a Z_{ct} index of 1% leads to a 0.942 percentage point higher probability of being diagnosed, a 33% increase over the mean diagnosis rate, a result that is statistically significant at the 1% level. Column 2 of Table 3 shows that this relationship remains after controlling for predetermined characteristics of the conscripts.

3.2.2 Exclusion Restriction

The second assumption for identification is that doctor assignment only affects outcomes through the diagnosis of a mental illness. There are two potential violations of this assumption. First, strict exogeneity would be violated if doctors' tendency to diagnose is correlated with unobservable determinants of future outcomes. To investigate this possibility, we compare in Table 4 the raw mean differences in terms of predetermined observable characteristics of individuals assigned to doctors with a tendency to diagnose a mental illness that is above (column 1) or below (column 2) the median. These predetermined characteristics are parents' education and income and conscripts' mental and physical illness before the age of 17. Table 4 column 4 confirms no statistical differences in observable characteristics of conscripts opening the door to doctors who are more or less likely to diagnose. We more formally test for random assignment by regressing Z_{ict} on the same variables that are observable for an individual at the time of military service conscription, controlling for center-by-year fixed effects and standard errors clustered at the doctor level. Column 3 of Table 3 reports the results. We find that doctors who vary in their tendency to diagnose a mental illness are assigned individuals who are observably equivalent, as noted by the p-value of 0.119 of the F-test of joint significance of these variables. The relationship with both Education of Parents and mental illness before 17 is significant at the 5%, and 10% levels respectively, but both coefficients are economically small.

A second violation of the exclusion restriction would arise if doctors with differing tendencies to diagnose a mental illness can affect outcomes through channels other than the actual diagnosis. Although this assumption is fundamentally untestable, it is quite reasonable in our setting. Military service doctors meet with patients only once for a brief interview and with the explicitly stated objective of finding out whether

they are fit for military service. Importantly, these doctors do not provide or prescribe treatment for any illness they diagnose.

Given that doctors conduct a physical and a mental evaluation of the conscript, one possible alternative channel through which doctors can affect outcomes is through the diagnosis of a physical illness. That is, the exclusion restriction would be violated if doctors who are more likely to diagnose a mental illness were also more likely to diagnose a physical illness. We investigate this possibility by regressing the tendency to diagnose a mental illness on contemporaneous diagnosis of physical illnesses. The results are presented in Table A4. We find that the F test of the hypothesis that the coefficients on all physical diagnoses are not significantly different from zero cannot be rejected (p-value of 0.142). We do see that hearing loss, joint problems and asthma are significant at a 10%, and 5% level respectively, but the point estimates are economically negligible.

3.2.3 Monotonicity

In order to interpret our estimates as the LATE of diagnosis for a conscript on the margin of diagnosis requires the assumption that the effect of doctor assignment is monotonic across conscripts. In our setting this requires that any conscript who is diagnosed to a low-tendency doctor would also be diagnosed by a higher-tendency doctor, and that any conscript who is not diagnosed by a high-tendency doctor would also not be diagnosed by a lower-tendency doctor.[16] We provide several pieces of evidence to support the assumption of monotonicity.

[16]If the monotonicty assumption is violated, our two-stage least squares estimates would still be a weighted average of marginal treatment effects, but the weights would not sum to one (Angrist, Imbens and Rubin (1996)). The monotonicty assumption is therefore necessary to interpret our estimates as a well-defined LATE. The bias away from this LATE is an increasing function of the number of conscripts for whom the monotonicty assumption does not hold and the difference in the marginal treatment effects for those conscripts for whom the monotoncity does and does not hold.

An implication of the monotonicity assumption is that the first-stage estimates should be non-negative for all subsamples. To test this, in Table A2 we calculate and compare the residualized tendency of each doctor to diagnose within any year separately for the subsamples of conscript with above and below median parental income (Column 1), parental education (Column 2), a conscript's mental (Column 3) and physical (Column 4) illness before the age of 17. Monotonicity implies that shifting a conscript in either group from a low to high tendency doctor should increase the probability they are diagnosed. The evidence is consistent with monotonicty.

Another implication of monotonicity is that all doctors should agree on conscripts whose underlying mental health is at either extreme of the distribution and will differ in their diagnosis for conscripts with intermediate mental health. Since each doctor assigns a severity score to any diagnosis we can test this implication in our data in several ways.

First, we recalculate the tendency to diagnose separately for severe and mild mental illnesses and compare the two distributions in Figure A1. The tendency to diagnose severe illnesses exhibits less dispersion and concentrates more than 70% of its mass at 0. This suggests that doctors are significantly more likely to coincide in the diagnosis of severe illnesses but differ in their tendency to diagnose mild mental illnesses. Moreover, it suggests that the marginal diagnosis is a less severe illness, consistent with monotonicity.

Second, Figure A2 shows estimates from the first stage regression where the dependent variable takes on a value of one only when the diagnosed severity is equal to or above the value on the x-axis. Moving from left to right removes the mildest remaining batch of diagnoses. The figure indicates that tendency to diagnose has the most power to explain mild to intermediate diagnosis (ratings 1 to 4) and has only limited power to explain any variation in severe cases (ratings 5 and above). This

also suggests that our measure of tendency to diagnose captures a variation across doctors in their tendency to diagnoses mild mental illness.

Finally, monotonicity may be violated if the tendency to diagnose is correlated with skill. Suppose, for example, that the correlation between tendency and skill was positive. In that case, individuals with high underlying mental health could be more likely to be diagnosed by a low-skill low-tendency doctor than if they were assigned to a high-skill high-tendency doctor. We proxy for doctor skill using the number of patients a doctor sees per year and show that this is essentially uncorrelated with doctor tendency to diagnose in online Appendix Figure A3.

4 Main Results

In this section we present the estimates from the 2SLS regression model where the first stage is given by equation (3). The coefficients can be interpreted as the causal effect of a diagnosis for 18-year-old males at the margin of a diagnosis. We start by focusing on outcomes for conscripts at age 30 (unless noted otherwise). We choose this age for two reasons. First, other research has shown a high correlation between outcomes at age 30 and subsequent lifetime labor-market outcomes (see Böhlmark and Lindquist (2006) for Sweden and Haider and Solon (2006) the U.S.). Second, as a practical matter, this is the horizon at which we can measure all outcomes for every cohort of conscripts in our study. After presenting the results for conscripts at age 30, we will estimate the effect on all outcomes at a wide range of ages.

4.1 Health Outcomes at Age 30

Table 5 shows that diagnosis during military service has a statistically and economically significant deleterious effect on health outcomes at age 30. Column 1 shows

that diagnosis increases morbidity from death from internal illness between age 18 and 30 by 1.23 percentage points.[17] Column 2 and 3 indicate that we do not find a statistically significant effect on death caused by external factors or for suicide.[18]

Beyond morbidity, Table 5 shows that diagnosis has a pronounced and statistically significant effect on other health indicators at age 30: hospital outpatient admission (Column 4) and the number of sick days taken by those who work (Column 6).[19]

4.2 Labor Market and Family Structure at Age 30

Table 6 measures the effect that diagnosis has on labor market outcomes and family structure at age 30. Column 1 and 2 show that diagnosis causes a statistically significant increase in the likelihood of both short- and long-spell unemployment. As a consequence, expected total income is lower (Column 3). The estimated effect on years of schooling (Column 4) is statistically insignificant.

Diagnosis lowers the likelihood of being married at age 30 (Column 5) but does not have a statistically significant effect on the likelihood of being divorced, having children or living with parents by this age (Columns 6, 7, and 8). [20]

Taking the results of Table 5, and Table 6 together, all outcomes point toward diagnosis having a negative effect on the life of the marginal patient at age 30. This conclusion is subject to the caveat that any set of outcomes only partially captures a person's total welfare. It is possible, for example, that while diagnosis increases

[17] Table A3 shows the ten most common subcategories of internal death experienced by all conscripts.

[18] Death by external factors includes all deaths not caused by internal illness. Common examples include death from automobile accident, drug overdose, and suicide.

[19] Hospital outpatient visits, which includes visits to the ER, has been used as an indicator of underlying health (as opposed to diagnosed illness) in previous research (see Currie and MacLeod (2020)).

[20] While it is theoretically unclear whether a reduction in the probability of being married is detrimental to a person's welfare, marriage has been shown to be positively correlated with reported happiness (Frijters and Beatton (2012) and indicators of improved physical and mental health (Wilson and Oswald (2005), Huntington et al. (2022), and Pijoan-Mas and Ríos-Rull (2014)).

the likelihood of unemployment people consume more leisure and are happier as a result. It is also theoretically possible that lower rates of marriage are welfare-improving. However, it is hard to square these possibilities with other outcomes, such as the increased likelihood of death from internal illness, hospital admission, and sick days from work. We, therefore, conclude that all the outcomes taken in combination indicate that for the marginal patient, diagnosis at age 18 makes the marginal conscript worse off at age 30.

4.3 Outcomes at Other Ages

We now estimate the effect of diagnosis at shorter and longer horizons than age 30. To the extent that our data allow, we present these estimated effects in Figure A4, Figure A5, and Figure A6, where we estimate the 2SLS estimates for the same full set of outcome measures in Table 5, and Table 6 at each age for the first 20 years after diagnosis (ages 18 to 38). Each figure shows the estimated point estimate and 95% confidence interval for each outcome measured at every age in this range. Panel A of Figure 2 summarizes these results by reporting the sign (positive indicated by "+", negative indicated by "-") of all point estimates for which zero lies outside of the associated 95-percent confidence interval at any horizon. Statistically insignificant estimates are left blank. To aid visual interpretation, statistically significant coefficients that are most consistent with a negative (positive) welfare effect of diagnosis are colored red (green).

The effect on health outcomes at all age horizons is similar to what was estimated at age 30. A statistically significant increase in the incidence of internal death is estimated in 13 out of the 14 years between age 23 and 36. Increased hospital admission as an outpatient is estimated in 9 out of the 14 years between age 25 and 38.

Increased sick days from work is estimated for 11 of the 16 years between age 21 and 36. This confirms that the statistically significant health effects of diagnosis at age 30 are representative of the effect across many ages after conscription. In addition, a statistically significant increase in the incidence of hospital admission as an inpatient is estimated at 4 age horizons starting as early as at age 19 and has a positive point estimate in every year apart from age 38. No statistically significant effect on suicide or external death is estimated at any age horizon. Across all 126 age-outcome regressions, 38 show a statistically significant point estimate and 37 of these indicate a harmful effect of diagnosis on health outcomes. The single estimate that contravenes this pattern is a statistically significant reduction in hospital outpatient admission at age 18. Overall, this confirms the pattern that diagnosis at age 18 has a deleterious effect on the future health of the conscript on the margin of diagnosis.

The effect of a diagnosis on labor market outcomes estimated at age 30 is also representative of the effect at other age horizons. A statistically significant increase in both long- and short-spell unemployment is estimated for 12 and 9 (respectively) of the 12 years between ages 27 and 38. Similarly, there is a statistically significant reduction in income for 9 of the 11 years from age 27 to 38. There are only 2 isolated statistically significant estimates that indicate a countervailing positive effect on labor market outcomes: reduced long-spell unemployment at age 19 and reduced short-spell unemployment at age 23. Across all 84 age-outcome regressions, 33 show a statistically significant point estimate, and 31 of these indicate a harmful effect of diagnosis on labor market outcomes. Overall, this confirms the pattern that diagnosis at age 18 has a deleterious effect on the future labor market outcomes of the conscript at the margin of diagnosis.

The estimated effect of a diagnosis on the family structure at age 30 appears to understate the effect at other age horizons. The statistically significant reduction in

the likelihood of being married at age 30 is present for each of the 10 years from age 29 to 38. In addition to this, diagnosis causes a statistically-significant reduction in the probability of having children for each of the 7 years from age 32 to age 38, increases the propensity to be living with parents in 4 of the 6 years from ages 33 to 38. In addition, diagnosis increases the likelihood of divorce at ages 22 and 23 and living with parents.[21] Across all 84 age-outcome regressions, 23 show a statistically significant point estimate all of which indicate that diagnosis inhibits family formation later in life by lowering marriage, lowering the number of children, increasing the likelihood of divorce and living with parents. As an important caveat, the welfare interpretation of these measures of family structure is suggestive at best and it is possible that lowering marriage of the expected number of children may be associated with improved utility. However, combined with the results above, the most reasonable interpretation appears to be that in combination, diagnosis has a negative effect on the lives of conscripts at the margin of diagnosis.

5 The Effect of Diagnosis on Military Service

Our analysis so far has estimated the long-term effects of diagnosis for conscripts on long-term health, labor market and family-structure outcomes. By design, the diagnosis of mental illness lowers the probability that a draftee serves in the military. Conscripts who are diagnosed with a mental illness are 32.9% more likely to serve in the military than those who are not (see Table 1). It is possible therefore that the effect of a diagnosis could simply come from the effect of military service on outcomes later in life. To rule this out as the primary explanation of our results, we separately measure the effect of military service on the same outcomes measured in

[21] Blanchflower and Clark (2021) show that the sign of the correlation between having children and parental well-being depends on the parents' financial strength.

our main results and use this to estimate the direct effect of diagnosis after removing this channel.

5.1 Empirical Implementation

We use an empirical strategy based on the approach first employed by Hjalmarsson and Lindquist (2019).[22] Their method instruments military service using the random assignment of conscripts to test officiators who vary in their tendency to have the men assigned to them serve in the military. To do this, we measure officiator tendency in the same way we measured doctor tendency in our primary empirical strategy.

The resulting 2SLS estimates of the effect of military service on our primary outcome variables at age 30 are presented in Column 2 of Table 7. Consistent with the findings in Hjalmarsson and Lindquist (2019), the estimates indicate that military service has a beneficial effect on long-term outcomes. The most statistically significant effects come from lowering unemployment, increasing income, and reducing the probability of a conscript living with his parents at age 30. Notably the point estimates are considerably smaller than the negative effect of diagnosis.

5.2 Removing Military Service from the Effect of Diagnosis

We now combine our analysis that estimates the total effect of diagnosis (which includes the effect it has on serving in the military) with the independently estimated effect of serving in the military. To do this we use the fact that conscripts who are diagnosed with a mental illness are 32.9% less likely to serve in the military than

[22] We follow Hjalmarsson and Lindquist (2019) in their sample selection and utilize the time period 1990-1996, we drop individuals who see an officiator who sees fewer than 100 draftees, and those who did not finish their military service after 23.

those who are not.[23] We take the estimated effect of diagnosis on each outcome and subtract the estimated effect of military service on the same outcome multiplied by 32.9%.

The resulting "direct" effect of diagnosis on outcomes at age 30, after removing the effect meditated by military service, is presented in Table 7.[24] Column 1 of Table 7 shows the original total effect of diagnosis for each outcome, including the effect that comes from the reduced probability of military service. Column 2 contains the estimated effect of military service on each outcome. Column 3 of Table 7 shows the estimated direct effect of diagnosis after removing the effect of military service. The point estimates in column 3 are generally smaller in magnitude than those column 1 indicating that the reduced likelihood of serving in the military partially accounts for the initial estimated effect of diagnosis. For some outcomes this adjustment produces an estimate with reduced statistical significance (notably short-spell unemployment and income). In most cases, the negative effects of diagnosis remain highly statistically and economically significant. For example, the point estimates indicate that the direct effect of diagnosis is to increase the probability of internal death by 1.2 percentage points, increases hospital outpatient admission by 18.6 percentage points, and increase the expected number of sick days by 8.9 days. In addition, the incidence of long-spell unemployment is increased by 8.0 percentage points and the probability of being married is reduced by 8.9 percentage points.

Panel B of Figure 2 summarizes the results for all outcomes and all ages after

[23] If the effect of diagnosis on the probability of military service is decreasing in a conscript's underlying mental health, then this will overstate the effect of diagnosis on military service for the conscript on the margin of diagnosis.

[24] Standard errors are calculated assuming the 2SLS estimates are normally distributed and by bootstrapping the correlation between these two estimates. We bootstrap the correlation by drawing 500 random subsamples (with replacement) of 200,000 observations from our baseline sample and estimating each coefficient on these subsamples. The correlation is taken between these estimates across all 500 subsamples.

removing the effect of military service - showing the sign of each statistically significant point estimate at every age horizon. [25] Comparing to Panel A of Figure 2 shows that removing the effect of military service partially removes the negative effects (in red) on outpatient admission, unemployment, income, marriage, having children, and living with parents. Despite this, 67 of the 70 statistically-significant point estimates, are most consistent with a harmful effect of diagnosis. We conclude that most of the negative effects of diagnosis come through a channel other than simply altering the probability of serving in the military.

5.3 Robustness

5.3.1 Heterogeneous Effects of Military Service

A possible concern with this adjustment is that military service may have heterogeneous effects that are correlated with a conscript's underlying mental health. If this is the case, it is possible that military service has a larger effect on outcomes for conscripts at the margin of diagnosis than for the average conscript, and therefore the estimates in Column 2 of Table 7 may underestimate the degree to which military service accounts for the effect of diagnosis. We test for this possibility by separately measuring the effect of military service for conscripts depending on whether they were diagnosed. The rationale for our test is that if the effect of military service varies with underlying mental health then we should see this difference when comparing those who were and who were not diagnosed. The results of this test, where we interact predicted military service with diagnosis status are shown in Tables A5, A6, and A7. Looking at the estimated interaction effect in each regression indicates that there is no evidence to support the concern the heterogeneous effect of military service by un-

[25] Point estimates and 95% confidence intervals for all estimates are shown in Figures A8, A9, and A10.

derlying mental health plays a statistically significant role in explaining the estimates in Column 3 of Table 7.[26]

6 Mechanisms

We explore the mechanisms through which diagnosis produces the effects discussed in Section 4. However, due to a lack of additional sources of exogenous variation beyond doctor assignments, our analysis can only provide suggestive evidence.

6.1 Use of Psychiatric Medication

Our initial investigation explores whether diagnosis elevates the likelihood of psychiatric medication prescriptions, which may have adverse side effects. [27] A constraint in testing this channel is that our medical prescription data starts in 2005, while our baseline conscription sample ends in 2001, affecting our ability to track early medication use. Post 2001 mandatory conscript rates fell, introducing the possibility of selection into the conscription sample. With this caveat in mind, we utilize the 2005-2008 cohorts solely for the purpose of measuring the effect of diagnosis on the use of psychiatric medication in the months pre- and post-conscription. Figure 3 shows consistent with random assignment, that the propensity to use this medication is not different prior to conscription. However, a trend break occurs at the time of conscription whereby men who were assigned to a high-tendency doctor increase the

[26] Column 1 of Table A7 indicates that our estimates in Column 3 of Table 7 possibly over adjusts for the effect of military service on being married. The interaction term for having a child (Column 3 of Table A7) is also statistically significant, but this outcome is not statistically significant in Table 7.

[27] Evidence has linked psychiatric medication with increased risk of suicide (Friedman and Leon (2007) and Friedman (2014)), weight gain and metabolic abnormalities (Mazereel et al. (2020)), sleep problems and mood disturbances (Cascade, Kalali and Wigal (2010)), and sudden unexplained death in children and adolescents (Gould et al. (2009)).

propensity with which they are prescribed this medication relative to those assigned to low-tendency doctors. This effect continues for 24 months after diagnosis occurs. Table A9 shows the 2SLS estimates for this sample. The point estimates are positive in line with the patterns shown in Figure 3 but the point estimates are not statistically significant. Note that statistical inference is hampered by the small sample size with only 11 doctors that see 500 conscripts as well as their colleagues at the same time and center in this period.

In contrast, going back to our baseline sample, we find only muted evidence that diagnosis during conscription leads to increased diagnosis of mental illness and use of medication later in life. The estimates in Table 8 indicate that the probability of being diagnosed with any mental illness at age 30 or being in therapy at age 35 is not statistically different from zero (columns 1 and 4). There is some evidence that the diagnosis of depression at age 30 and the use of antidepressant medication at age 35 is higher (columns 2 and 3), although these estimates are of marginal statistical significance. Furthermore, after removing the estimated effect of military service, the residual effect is not statistically significant for any of these outcomes in Table 7 and in only one instance (mental illness at age 30) in Figure 2.[28] In sum, our data offers limited suggestive evidence that diagnosis at age 18 may operate by increasing exposure to psychiatric medication in the years directly following conscription.

6.2 Diagnosis Alters Self-Perception

Literature suggests that mental illness diagnosis can negatively impact self-perception and self-esteem (Drapalski et al. (2013) Mechanic et al. (1994) Yanos, Roe and Lysaker (2010)). To test this, we estimate diagnosis effects on conscripts with differently

[28]This is confirmed for estimates at other age horizons as shown in Figures A7 and A11 and summarized in Panel B of Figure 2.

diagnosed parents. We hypothesize that growing up without a parentally-diagnosed mental illness would amplify a conscript's diagnostic impact on self-view. Our 2SLS model, interacting with parental diagnostic history, provides moderate support for this (Table 9). Specifically, diagnosis has a lesser impact on work income, outpatient admission, and marriage rates among conscripts with diagnosed parents. The variance in other outcomes is not statistically significant, suggesting diagnosis may operate through multiple channels.

6.3 Diagnosis Reduces Bandwidth

Another potential channel is that diagnosis may tax mental and financial resources, as evidenced by Schilbach, Schofield and Mullainathan (2016). We assess this by comparing diagnosis effects on conscripts with high and low socio-economic status (SES), using a dummy variable for whether the conscript's father had 10 or more years of schooling. Rerunning our baseline 2SLS model with this SES dummy interaction yields minimal evidence for this hypothesis (Table 9).

7 Conclusion

This paper measures the long-term effect of being diagnosed with a mental illness for young adults at the margin of diagnosis. We follow all Swedish men born between 1971 and 1983 matched to administrative panel data on health, labor market, and family outcomes to estimate the impact of a mental illness diagnosis on subsequent outcomes. Exploiting the random assignment of 18-year-old men to doctors during military conscription, we find that a mental illness diagnosis for people at the margin increases the future likelihood of death from internal illness, hospital admittance, being sick from work, and unemployment. We find a similar pattern of negative

effects at age horizons from age 18 to 38. Using a separate identification strategy, we measure the effect of military service on the same set of outcomes to rule out that the effect of diagnosis in our setting is primarily mediated by altering the probability of serving. Our paper provides suggestive evidence that diagnosis may have long-term effects by increasing the use of psychiatric medication and by altering a person's self-perception. We do not find support for the hypothesis that the effect of diagnosis operates by exhausting their mental and financial bandwidth.

An important question is how to interpret our results that diagnosis of mental illness appears to primarily have deleterious long-term effects on the life of a young man at the margin of diagnosis. One possible interpretation is that the diagnosis was made in error and that diagnosis is harmful when a person is not mentally ill. This is difficult to assess since we do not have any independent measure of a conscript's underlying mental health. Another possible interpretation is that for a conscript on the margin of diagnosis, the side effects of diagnosis may outweigh the benefits. One way to relate this result to health policy could be to reconsider the threshold that is used when making a diagnosis. Our evidence suggests that lowering that threshold may be welfare-improving. Alternately, this may also indicate that the amount and types of treatment that were used for those at the margin of diagnosis may be inadequate or inappropriate. Determining which of these interpretations applies is beyond the scope of this paper.

Finally, it is important to offer a few caveats for our conclusions. Our results do not imply that diagnosis is harmful for people whose underlying mental health is well below the margin of diagnosis. It therefore does not imply that policies aimed at increasing access to mental health assessment and treatment would lower welfare. Similarly, more work is required to extrapolate these results to women and to people of different ages.

References

Aizer, Anna, and Joseph J. Doyle, Jr. 2015. "Juvenile Incarceration, Human Capital, and Future Crime: Evidence from Randomly Assigned Judges." *Quarterly Journal of Economics*, 130(2): 759–803.

Alalouf, Mattan, Sarah Miller, and Laura R Wherry. 2019. "What difference does a diagnosis make? Evidence from marginal patients." National Bureau of Economic Research.

Almond, Douglas, Joseph J Doyle Jr, Amanda E Kowalski, and Heidi Williams. 2010. "Estimating marginal returns to medical care: Evidence from at-risk newborns." *The quarterly journal of economics*, 125(2): 591–634.

Angrist, Joshua D. 1990. "Lifetime earnings and the Vietnam era draft lottery: evidence from Social Security administrative records." *American Economic Review*, 313–336.

Angrist, Joshua D, and Stacey H Chen. 2011. "Schooling and the Vietnam-era GI Bill: Evidence from the draft lottery." *American Economic Journal: Applied Economics*, 3(2): 96–118.

Angrist, Joshua D, Guido W Imbens, and Donald B Rubin. 1996. "Identification of causal effects using instrumental variables." *Journal of the American statistical Association*, 91(434): 444–455.

Aragones, Enric, Lluis Pinol, and Antonio Labad. 2006. "The overdiagnosis of depression in non-depressed patients in primary care." *Family practice*, 23(3): 363–368.

Asch, Steven M, Amy M Kilbourne, Allen L Gifford, M Audrey Burnam, Barbara Turner, Martin F Shapiro, and Samuel A Bozzette. 2003. "Underdiagnosis of depression in HIV." *Journal of general internal medicine*, 18(6): 450–460.

Bartel, Ann, and Paul Taubman. 1986. "Some economic and demographic consequences of mental illness." *Journal of Labor Economics*, 4(2): 243–256.

Bauer, Thomas K, Stefan Bender, Alfredo R Paloyo, and Christoph M Schmidt. 2012. "Evaluating the labor-market effects of compulsory military service." *European Economic Review*, 56(4): 814–829.

Baumgaertner, Emily. 2022. "Anxiety Screening Recommended for Younger Adolescents." *The New York Times*.

Berndt, Ernst R, Robert S Gibbons, Anton Kolotilin, and Anna Levine Taub. 2015. "The heterogeneity of concentrated prescribing behavior: Theory and evidence from antipsychotics." *Journal of Health Economics*, 40: 26–39.

Bharadwaj, Prashant, Mallesh M Pai, and Agne Suziedelyte. 2017. "Mental health stigma." *Economics Letters*, 159: 57–60.

Bhuller, Manudeep, Gordon B Dahl, Katrine V Loken, and Magne Mogstad. 2018. "Intergenerational effects of incarceration." Vol. 108, 234–40.

Biasi, Barbara, Michael S Dahl, and Petra Moser. 2021. "Career effects of

mental health." National Bureau of Economic Research.
Blanchflower, David G, and Andrew E Clark. 2021. "Children, unhappiness and family finances." *Journal of Population Economics*, 34(2): 625–653.
Böhlmark, Anders, and Matthew J Lindquist. 2006. "Life-cycle variations in the association between current and lifetime income: Replication and extension for Sweden." *Journal of Labor Economics*, 24(4): 879–896.
Brody, Debra J., and Qiuping Gu. 2020. "Antidepressant use among adults: United States, 2015-2018." *NCHS Data Brief*, 377.
Card, David, and Ana Rute Cardoso. 2012. "Can compulsory military service raise civilian wages? Evidence from the peacetime draft in Portugal." *American Economic Journal: Applied Economics*, 4(4): 57–93.
Cascade, Elisa, Amir H Kalali, and Sharon B Wigal. 2010. "Real-world data on: attention deficit hyperactivity disorder medication side effects." *Psychiatry (Edgmont)*, 7(4): 13.
Chang, Tom, and Antoinette Schoar. 2008. "Judge Specific Differences in Chapter 11 and Firm Outcomes." *Unpublished Working Paper*.
Cherry, Donald K, Michael Albert, and Linda F McCaig. 2018. *Mental health-related physician office visits by adults aged 18 and over: United States, 2012-2014*. US Department of Health and Human Services, Centers for Disease Control and ….
Cuddy, Emily, and Janet Currie. 2020. "Treatment of mental illness in American adolescents varies widely within and across areas." *Proceedings of the National Academy of Sciences*, 117(39): 24039–24046.
Currie, Janet M, and W Bentley MacLeod. 2020. "Understanding Doctor Decision Making: The Case of Depression Treatment." *Econometrica*, 88(3): 847–878.
Currie, Janet, Mark Stabile, and Lauren Jones. 2014. "Do stimulant medications improve educational and behavioral outcomes for children with ADHD?" *Journal of health economics*, 37: 58–69.
Dahl, Gordon B, Andreas Ravndal Kostøl, and Magne Mogstad. 2014. "Family welfare cultures." *The Quarterly Journal of Economics*, 129(4): 1711–1752.
Dobbie, Will, and Jae Song. 2015. "Debt Relief and Debtor Outcomes: Measuring the Effects of Consumer Bankruptcy Protection." *American Economic Review*, 105(3): 1272–1311.
Dobbie, Will, Jacob Goldin, and Crystal S. Yang. 2018. "The Effects of Pretrial Detention on Conviction, Future Crime, and Employment: Evidence from Randomly Assigned Judges." *American Economic Review*, 108(2): 201–40.
Dobbie, Will, Paul Goldsmith-Pinkham, and Crystal S. Yang. 2017. "Consumer Bankruptcy and Financial Health." *Review of Economics and Statistics*, 99(5): 853–869.
Doran, Christopher M, and Irina Kinchin. 2017. "A review of the economic impact of mental illness." *Australian Health Review*, 43(1): 43–48.
Doyle, Joseph J., Jr. 2007. "Child Protection and Child Outcomes: Measuring the Effects of Foster Care." *American Economic Review*, 97(5): 1583–1610.

Doyle, Joseph J., Jr. 2008. "Child Protection and Adult Crime: Using Investigator Assignment to Estimate Causal Effects of Foster Care." *Journal of Political Economy*, 116(4): 746–770.

Drapalski, Amy L, Alicia Lucksted, Paul B Perrin, Jennifer M Aakre, Clayton H Brown, Bruce R DeForge, and Jennifer E Boyd. 2013. "A model of internalized stigma and its effects on people with mental illness." *Psychiatric Services*, 64(3): 264–269.

Eek, Emma, Mieke van Driel, Magnus Falk, Samantha A Hollingworth, and Gregory Merlo. 2021. "Antidepressant use in Australia and Sweden—A cross-country comparison." *Pharmacoepidemiology and drug safety*, 30(4): 409–417.

Fiest, Kirsten M, Nathalie Jette, Hude Quan, Christine St Germaine-Smith, Amy Metcalfe, Scott B Patten, and Cynthia A Beck. 2014. "Systematic review and assessment of validated case definitions for depression in administrative data." *BMC psychiatry*, 14(1): 289.

Friedman, Richard A. 2014. "Antidepressants' black-box warning—10 years later." *New England Journal of Medicine*, 371(18): 1666–1668.

Friedman, Richard A, and Andrew C Leon. 2007. "Expanding the black box—depression, antidepressants, and the risk of suicide." *New England Journal of Medicine*, 356(23): 2343–2346.

Frijters, Paul, and Tony Beatton. 2012. "The mystery of the U-shaped relationship between happiness and age." *Journal of Economic Behavior & Organization*, 82(2-3): 525–542.

Galarraga, Omar, David S Salkever, Judith A Cook, and Stephen J Gange. 2006. "An instrumental variable evaluation of antidepressant use on employment among HIV-infected women using highly-active antiretroviral therapy in the United States: 1996-2004."

Gould, Madelyn S, B Timothy Walsh, Jimmie Lou Munfakh, Marjorie Kleinman, Naihua Duan, Mark Olfson, Laurence Greenhill, and Thomas Cooper. 2009. "Sudden death and use of stimulant medications in youths." *American Journal of Psychiatry*, 166(9): 992–1001.

Grenet, Julien, Robert A Hart, and J Elizabeth Roberts. 2011. "Above and beyond the call. Long-term real earnings effects of British male military conscription in the post-war years." *Labour Economics*, 18(2): 194–204.

Haider, Steven, and Gary Solon. 2006. "Life-cycle variation in the association between current and lifetime earnings." *American Economic Review*, 96(4): 1308–1320.

Hjalmarsson, Randi, and Matthew J Lindquist. 2019. "The Causal Effect of Military Conscription on Crime." *Economic Journal*, 129(622): 2522–2562.

Huntington, Charlie, Scott M Stanley, Brian D Doss, and Galena K Rhoades. 2022. "Happy, healthy, and wedded? How the transition to marriage affects mental and physical health." *Journal of Family Psychology*, 36(4): 608.

Iizuka, Toshiaki, Katsuhiko Nishiyama, Brian Chen, and Karen Eggleston. 2021. "False alarm? Estimating the marginal value of health signals." *Journal of*

Public Economics, 195: 104368.

Imbens, Guido, and Wilbert Van Der Klaauw. 1995. "Evaluating the Cost of Conscription in the Netherlands." *Journal of Business & Economic Statistics*, 13(2): 207–215.

Kling, Jeffrey R. 2006. "Incarceration Length, Employment, and Earnings." *American Economic Review*, 96(3): 863–876.

Leichsenring, Falk, Christiane Steinert, Sven Rabung, and John PA Ioannidis. 2022. "The efficacy of psychotherapies and pharmacotherapies for mental disorders in adults: an umbrella review and meta-analytic evaluation of recent meta-analyses." *World Psychiatry*, 21(1): 133–145.

Liberman, Andres, Daniel Paravisini, and Vikram Pathania. 2016. "High-Cost Debt and Perceived Creditworthiness: Evidence from the U.K." *Unpublished Working Paper*.

Ludwig, Jens, Dave E Marcotte, and Karen Norberg. 2009. "Anti-depressants and suicide." *Journal of health economics*, 28(3): 659–676.

Marcus, Steven C, and Mark Olfson. 2010. "National trends in the treatment for depression from 1998 to 2007." *Archives of general psychiatry*, 67(12): 1265–1273.

Markowitz, Fred E. 1998. "The effects of stigma on the psychological well-being and life satisfaction of persons with mental illness." *Journal of health and social behavior*, 335–347.

Mazereel, Victor, Johan Detraux, Davy Vancampfort, Ruud Van Winkel, and Marc De Hert. 2020. "Impact of psychotropic medication effects on obesity and the metabolic syndrome in people with serious mental illness." *Frontiers in endocrinology*, 11: 573479.

Mechanic, David, Donna McAlpine, Sarah Rosenfield, and Diane Davis. 1994. "Effects of illness attribution and depression on the quality of life among persons with serious mental illness." *Social science & medicine*, 39(2): 155–164.

Merten, Eva Charlotte, Jan Christopher Cwik, Jürgen Margraf, and Silvia Schneider. 2017. "Overdiagnosis of mental disorders in children and adolescents (in developed countries)." *Child and adolescent psychiatry and mental health*, 11(1): 1–11.

Mojtabai, Ramin. 2013. "Clinician-identified depression in community settings: concordance with structured-interview diagnoses." *Psychotherapy and psychosomatics*, 82(3): 161–169.

Paris, Joel. 2020. *Overdiagnosis in psychiatry: how modern psychiatry lost its way while creating a diagnosis for almost all of life's misfortunes.* Oxford University Press.

Persson, Petra, Xinyao Qiu, and Maya Rossin-Slater. 2021. "Family spillover effects of marginal diagnoses: The case of ADHD." National Bureau of Economic Research.

Phillips, Susan P, and Janelle Yu. 2021. "Is anxiety/depression increasing among 5-25 year-olds? A cross-sectional prevalence study in Ontario, Canada, 1997-2017."

Journal of Affective Disorders, 282: 141–146.

Pijoan-Mas, Josep, and José-Víctor Ríos-Rull. 2014. "Heterogeneity in expected longevities." *Demography*, 51(6): 2075–2102.

Schilbach, Frank, Heather Schofield, and Sendhil Mullainathan. 2016. "The Psychological Lives of the Poor." *American Economic Review*, 106(5): 435–40.

Schwandt, Hannes, and Amelie Wuppermann. 2016. "The youngest get the pill: ADHD misdiagnosis in Germany, its regional correlates and international comparison." *Labour Economics*, 43: 72–86.

Stefánsdóttir, Íris Harpa, Tord Ivarsson, and Gudmundur Skarphedinsson. 2022. "Efficacy and safety of serotonin reuptake inhibitors (SSRI) and serotonin noradrenaline reuptake inhibitors (SNRI) for children and adolescents with anxiety disorders: a systematic review and meta-analysis." *Nordic Journal of Psychiatry*, 1–10.

Thornicroft, Graham, Diana Rose, and Aliya Kassam. 2007. "Discrimination in health care against people with mental illness." *International review of psychiatry*, 19(2): 113–122.

Wilson, Chris M, and Andrew J Oswald. 2005. "How does marriage affect physical and psychological health? A survey of the longitudinal evidence." *A Survey of the Longitudinal Evidence (June 2005)*.

Yanos, Philip T, David Roe, and Paul H Lysaker. 2010. "The impact of illness identity on recovery from severe mental illness." *American journal of psychiatric rehabilitation*, 13(2): 73–93.

8 Figures and Tables

Figure 1: First Stage

This figure reports the first-stage relationship between draftee outcomes and the measure of doctors' tendency to diagnose a mental illness. Doctor tendency to diagnose a mental illness is estimated using data from other draftees assigned to a doctor following the procedure described in Section 3. The solid line represents a local linear regression of an indicator for a mental illness diagnosis on doctor's tendency to diagnose. The indicator for a mental illness diagnosis and doctors' tendencies to diagnose are residualized using center-by-year fixed effects. Standard errors are clustered at the doctor level. The back plot shows a histogram of the distribution of the tendency to diagnose a mental illness, with equal weight on each doctor.

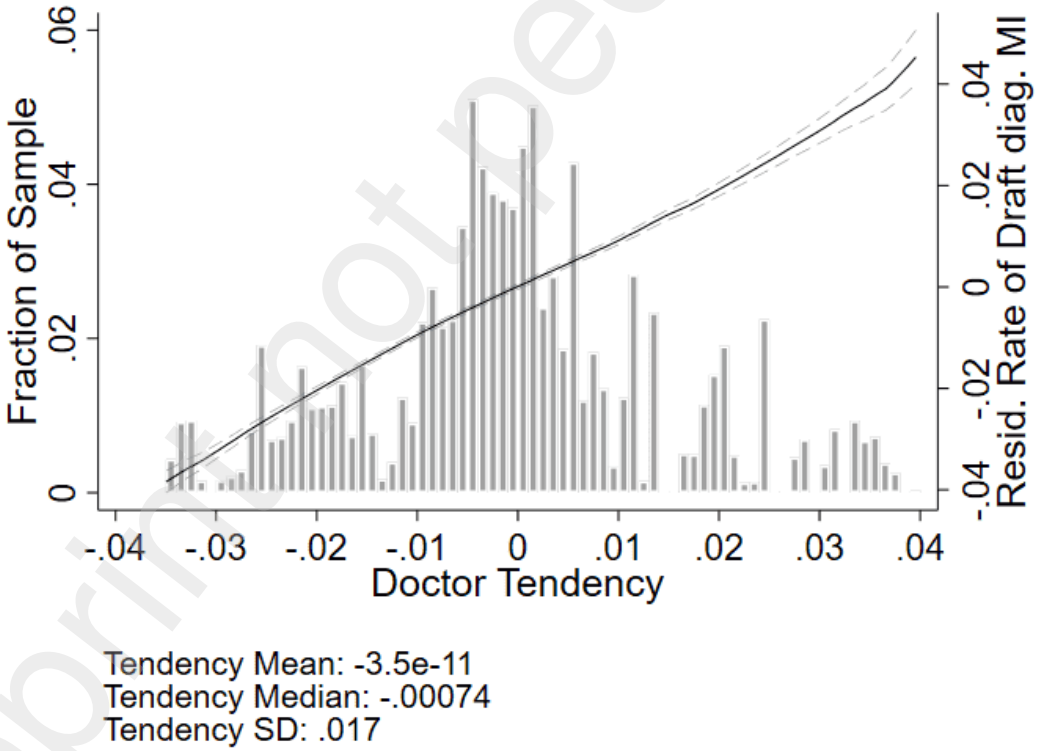
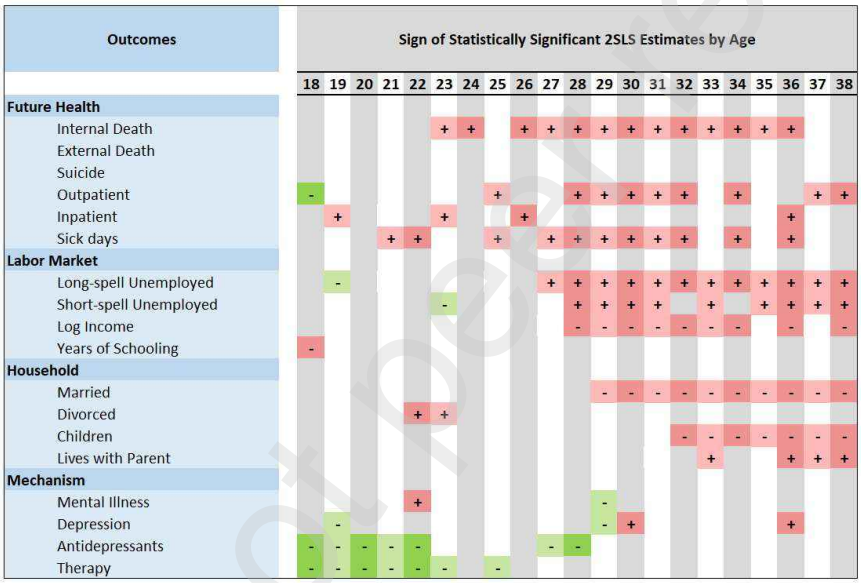


Figure 2: Summary of Event-time Evolution of 2SLS Diagnosis Estimates

This figure summarizes the estimated causal effect of diagnosis for all outcome variables at all age horizons. If an estimate is statistically significant (i.e., zero lies outside the 95 percent confidence interval) then the sign of the point estimate is recorded. Otherwise, when the estimate is statistically insignificant, the cell is left blank. The cell is colored red (green) if the sign of the coefficient implies a negative (positive) welfare effect. Panel A summarizes the 2SLS estimated total effect of diagnosis, including any effect mediated by avoidance of military service. Panel B summarizes the direct effect of diagnosis, after removing the effect of military service.

(a) Original Dianosis Effect



(b) Residual Effect Free from Military Effect

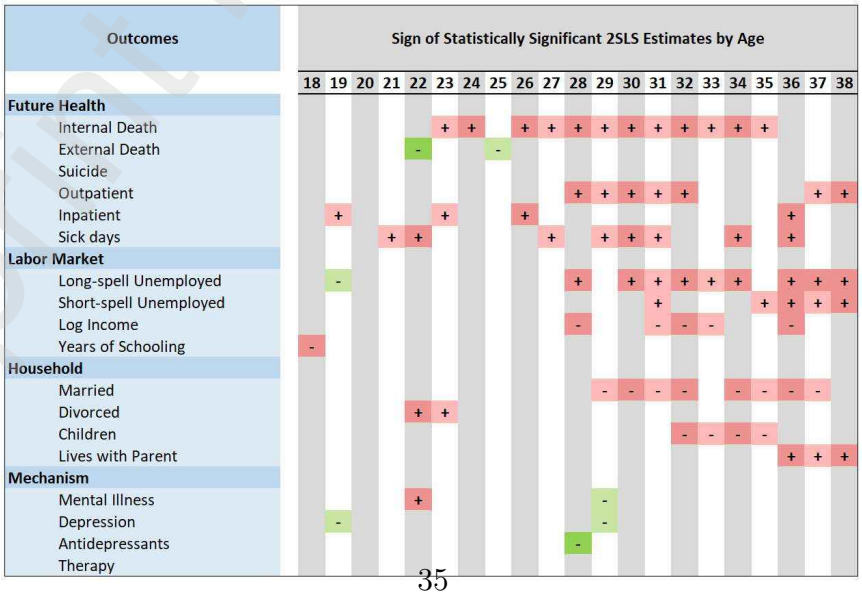
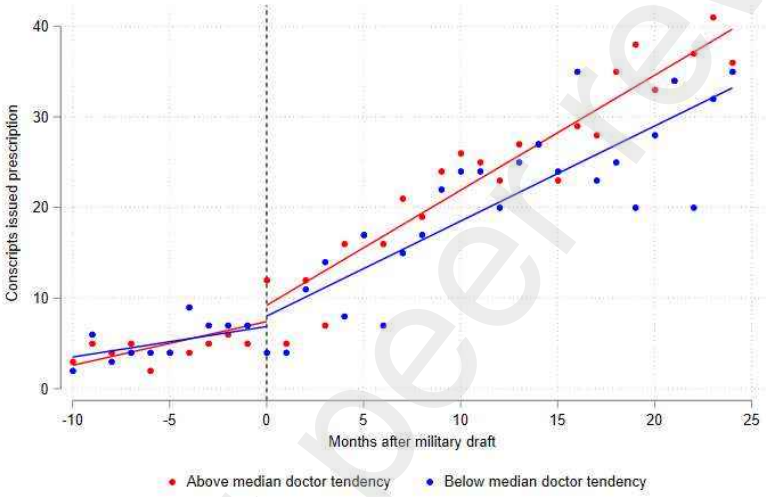


Figure 3: 2SLS Diagnosis Estimates — Use of Psychiatric Medicine After Conscription

The following figures illustrate the difference in the use of (a) psychiatric medicine and (b) antidepressants in the two years after conscription, between conscripts who were examined by above- and below-median tendency doctors. The sample contains conscripts in the time period 2005-2008.

(a) Psychiatric Medicine



(b) Antidepressants

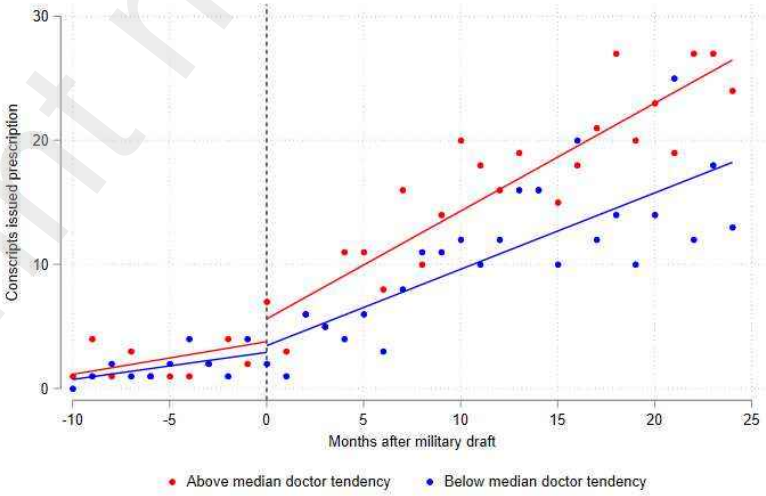


Table 1: Descriptive Statistics

This table reports the means of selected variables for individuals included in the full analysis sample (column 1). The standard deviations of each variable are shown for the full sample (column 2).

	Mean	SD
Military Conscription		
Draft diagnosis	0.0285	0.167
Served in the Military	0.6011	0.490
Undiagnosed	0.611	0.488
Diagnosed	0.282	0.450
Schooling, father	11.657	2.515
Schooling, mother	11.786	2.359
Income, father (SEK)	226,187	194,647
Income Mother (SEK)	146,415	87,977
Mental Illness before 17	0.0118	0.108
Physical Illness before 17	0.00230	0.0479
Psychological Capability (Normalized)	5.107	1.694
Physical Capability (Normalized)	6.059	1.462
IQ Test Score (Normalized)	5.151	1.890
Future Health		
Internal Death at Age 30	0.00139	0.0373
External Death at Age 30	0.00480	0.0691
Suicide before Age 30	0.00157	0.0395
Outpatient at Age 30	0.233	0.423
Inpatient at Age 30	0.0308	0.173
Sick days at Age 30	4.362	28.990
Labor Market		
Long-spell Unemployed at Age 30	0.0545	0.227
Short-spell Unemployed at Age 30	0.0560	0.230
Income (SEK) at Age 30	268,032	158,037
Years of Schooling at Age 30	12.770	2.072
Household		
Married at Age 30	0.184	0.387
Divorced at Age 30	0.0116	0.1073
Children at Age 30	0.363	0.4808
With parents at Age 30	0.0781	0.268
Mechanism		
Mental Illness at Age 30	0.0192	0.137
Depression at Age 30	0.00392	0.0625
Antidepressants at Age 35	0.0548	0.228
Therapy at Age 35	0.000181	0.0134
Observations	400,104	400,104

Table 2: Distribution of Mental Illness Diagnoses

This table reports the distribution of diagnoses of mental illness at military service conscription for the distribution of severity within a given diagnosis (columns 1 to 3) and all diagnoses (column 4). We use the ICD-9 categorization. Severity is assesed on a scale from 1 to 10 and our categories are defined as follows: Severe is 10, intermediate is 4-9 and mild is 1-3.

Diagnosis	Severe	Intermediate	Mild	All
Depression	2.959%	14.130%	10.417%	27.507%
Psychosomatic disorders	0.775%	9.372%	9.669%	19.817%
Psychological development disorders	12.502%	1.909%	0.440%	14.851%
Neurosis, anxiety disorders	1.095%	3.938%	8.459%	13.492%
Personality disorders	3.207%	0.605%	0.0440%	3.856%
Addiction	2.376%	8.283%	4.950%	15.610%
Other	3.212%	1.524%	0.132%	4.868%
All diagnoses	26.126%	39.761%	34.113%	100.000%

Table 3: First-Stage and Balance Tests

This table reports first-stage results and a balance test. We estimate first equation 1 $Draftdiagnosis_{ict} = \pi Z_{ict} + \gamma\theta_{ct} + \epsilon_{ict}$, where the outcome variable indicates if the conscript is diagnosed during conscription in column 1 and column 2. Second in column 3 we present the results of a balance test where we estimate the relationship between our instrument Z_{ict} and pre-test day characteristics of the conscripts. We also report the p-value of an F-test of the joint significance of the variables included in the regression at the bottom of the Table. Standard errors are clustered at the doctor level and reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Draft diagnosis (1)	Draft diagnosis (2)	Doctors' Tendency (3)
Doctors' Tendency	0.942***	0.929***	
	(0.00991)	(0.00864)	
Schooling, father		-0.000757***	4.535e-05**
		(0.000175)	(1.76e-05)
Schooling, mother		-0.000932***	-1.679e-05
		(0.000141)	(1.25e-05)
Work income, father		-9.82e-09***	3.138e-10
		(2.29e-09)	(2.49e-10)
Work income, mother		-2.28e-08***	6.868e-10
		(4.62e-09)	(8.85e-10)
Mental illness before 17		0.0417***	0.000605*
		(0.00691)	(0.000361)
physical illness before 17		-0.0166**	0.000378
		(0.00756)	(0.000558)
Observations	400,104	379,542	379,542
R-squared	0.0194	0.0209	0.000104
F-Statistic (Doctors' Tendency)	9033.297	11566.108	
P-value joint F-test	1.27e-100	5.46e-106	0.119
Center x year FE	Yes	Yes	Yes
Pre-test day variables	No	Yes	Yes
Nr of clusters	102	102	102

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Balancing Test of Conditional Random Assignment: Above M. Tendency and Below M. Tendency

This table reports the means of the balancing test variables the subsample of individuals who met above-median tendency doctors (column 1), and individuals who met below-median tendency doctors (column 2), the difference between sample mean above median and below median (column 3), and the p-values of the coefficients from the regressions which take the dummy of above or below median as the independent variable and the balancing test variables as the dependent variable (column 4).

	Sample mean			
Variable	Above Median (1)	Below Median (2)	Difference (3)	P-value (4)
Diagnosis tendency	0.0123	-0.0121	0.0244	0.000
Draft year	1994.101	1994.551	-0.449	0.542
Birth year	1976.049	1976.481	-0.431	0.751
Pre-test day variables				
Schooling, father	11.663	11.651	0.001%	0.890
Schooling, mother	11.779	11.793	-0.001%	0.849
Income, father	224,659.578	227,694.109	-0.0133%	0.655
Income, mother	145,149.843	147,662.875	-0.0170%	0.617
Mental illness before 17	0.0122	0.0114	0.0684%	0.195
Physical illness before 17	0.00239	0.00222	0.0740%	0.619

Table 5: 2SLS Diagnosis Estimates — Future Health

This table reports 2SLS estimates of the effect of a mental illness diagnosis during the mandatory draft in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (3) presented in section 3. The first stage relationships between the diagnosis of mental illness and the doctors' tendency are estimated by equation (3) in section 3, where the leave-out tendency measures are calculated according to equation (2) in section 3. All specifications control for center-by-year of enrollment fixed effects. Standard errors clustered at the doctor level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Internal Death before Age 30	External Death before Age 30	Suicide before Age 30
	(1)	(2)	(3)
Draft diagnosis	0.0123***	-0.00589	0.000803
	(0.00304)	(0.00524)	(0.00245)
Observations	400,104	400,104	400,104
Dep. Var mean	0.00140	0.00480	0.00156
Time x center FE	Yes	Yes	Yes
Nr of clusters	102	102	102

VARIABLES	Outpatient at Age 30	Inpatient at Age 30	Sick days at Age 30
	(4)	(5)	(6)
Draft diagnosis	0.195***	0.0367	9.423***
	(0.0621)	(0.0234)	(2.994)
Observations	397,855	397,855	387,940
Dep. Var mean	0.233	0.0308	4.362
Time x center FE	Yes	Yes	Yes
Nr of clusters	102	102	102

Table 6: 2SLS Diagnosis Estimates — Labor Market and Family Structure

This table reports 2SLS estimates of the effect of a mental illness diagnosis during the mandatory draft in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (3) presented in section 3. The first stage relationships between the diagnosis of mental illness and the doctors' tendency are estimated by equation (3) in section 3, where the leave-out tendency measures are calculated according to equation (2) in section 3. All specifications control for center-by-year of enrollment fixed effects. Standard errors clustered at the doctor level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Long-spell Unemployed at Age 30	Short-spell Unemployed at Age 30	Log Income at Age 30	Years of Schooling at Age 30
	(1)	(2)	(3)	(4)
Draft diagnosis	0.0894***	0.0603**	-1.0440**	-0.475
	(0.0315)	(0.0266)	(0.506)	(0.661)
Observations	397,855	397,855	393,033	387,814
Dep. Var mean	0.0545	0.0560	268,031.916 SEK	12.766
Time x center FE	Yes	Yes	Yes	Yes
Nr of clusters	102	102	102	102

VARIABLES	Married at Age 30	Divorced at Age 30	Children at Age 30	With parents at Age 30
	(5)	(6)	(7)	(8)
Draft diagnosis	-0.0957**	0.00962	-0.0695	0.0330
	(0.0407)	(0.00880)	(0.0612)	(0.0295)
Observations	397,855	397,855	400,104	387,940
Dep. Var mean	0.184	0.0116	0.363	0.0781
Time x center FE	Yes	Yes	Yes	Yes
Nr of clusters	102	102	102	102

Table 7: Diagnosis estimates at age 30 after Removing the Effect of Military Service

This table reports in column 1 the 2SLS estimates of the total effect of a mental illness diagnosis (T) during conscription on outcomes at age 30 (these are the same 2SLS estimates contained in Tables 5, 6, and 8). Column 2 presents the 2SLS estimates of the effect of military service (S) on the same outcome variables at age 30. For all regressions in column 2 standard errors are clustered at the officiator level (72 clusters in each) and All include time-by=center and time-by-county fixed effects. In column 3, we report the direct effect (D) of diagnosis after removing the effect mediated by military service. Since a diagnosis lowers the probability of serving by 32.9% we define $D = T + (-0.329)S$. Standard errors and confidence intervals in column (3) are generated by assuming that the two sets of 2SLS estimates are normally distributed. Using a bootstrap estimate of the correlation between the point estimates, we calculate the standard errors using $Var(D) = Var(T) + Var((-0.329)S) + 2Cov(T, (-0.329)S)$. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Draft Diagnosis (2SLS)	Military Service (2SLS)	Direct Effect
	(1)	(2)	(3)
Future Health			
Internal Death before Age 30	0.0123***	-0.00144	0.0118***
	(0.00304)	(0.00133)	(0.00308)
External Death before Age 30	-0.00589	-0.00624*	-0.00794
	(0.00524)	(0.00330)	(0.00544)
Suicide before Age 30	0.000803	-0.00195	0.000163
	(0.00245)	(0.00151)	(0.00252)
Outpatient at Age 30	0.195***	-0.0275*	0.186***
	(0.0621)	(0.0160)	(0.0625)
Inpatient at Age 30	0.0367	-0.00405	0.0354
	(0.0234)	(0.00917)	(0.0238)
Sick days at Age 30	9.423***	-1.482	8.936***
	(2.994)	(1.835)	(3.105)
Labor Market			
Long-spell Unemployed at Age 30	0.0894***	-0.0284**	0.0800**
	(0.0315)	(0.0103)	(0.0316)
Short-spell Unemployed at Age 30	0.0603**	-0.0312***	0.0500*
	(0.0266)	(0.00944)	(0.0268)
Log Income at Age 30	-1.0440**	0.420***	-0.905*
	(0.506)	(0.139)	(0.509)
Years of Schooling at Age 30	-0.475	0.197	-0.410
	(0.661)	(0.176)	(0.664)
Family Structure			
Married at Age 30	-0.0957**	0.0216	-0.0886**
	(0.0407)	(0.0195)	(0.0413)
Divorced at Age 30	0.00962	0.00327	0.0107
	(0.00880)	(0.00407)	(0.00895)
Children at Age 30	-0.0695	0.0529*	-0.0521
	(0.0612)	(0.0286)	(0.0625)
With Parents at Age 30	0.0330	-0.0383***	0.0205
	(0.0295)	(0.0122)	(0.0299)
Mechanism			
Mental Illness at Age 30	0.00762	-0.0145**	0.00285
	(0.0173)	(0.00655)	(0.0173)
Depression at Age 30	0.0112**	-0.00361	0.0100*
	(0.00518)	(0.00351)	(0.00531)
Antidepressants at Age 35	-0.0889*	-0.0157	0.0838*
	(0.0490)	(0.00968)	(0.0490)
Therapy at Age 35	-0.00158	0.000444	-0.00143
	(0.00103)	(0.000530)	(0.00101)

Table 8: 2SLS Diagnosis Estimates — Mechanism

This table reports 2SLS estimates of the effect of a mental illness diagnosis during the mandatory draft in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (3) presented in section 3. The first stage relationships between the diagnosis of mental illness and the doctors' tendency are estimated by equation (3) in section 3, where the leave-out tendency measures are calculated according to equation (2) in section 3. All specifications control for center-by-year of enrollment fixed effects. Standard errors clustered at the doctor level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Mental Illness at Age 30	Depression at Age 30
	(1)	(2)
Draft diagnosis	0.00762	0.0112**
	(0.0173)	(0.00518)
Observations	397,855	397,855
Dep. Var mean	0.0192	0.00392
Time x center FE	Yes	Yes
Nr of clusters	102	102

VARIABLES	Antidepressants at Age 35	Therapy at Age 35
	(3)	(4)
Draft diagnosis	0.0889*	-0.00158
	(0.0490)	(0.00103)
Observations	326,443	326,443
Dep. Var mean	0.0547	0.000181
Time x center FE	Yes	Yes
Nr of clusters	102	102

Table 9: 2SLS Diagnosis Estimates — Interactions

This table reports 2SLS estimates of the effect of a mental illness diagnosis during conscription on subsequent outcomes with interactions on i) parents' prior diagnosis and ii) socioeconomic status. Parents' diagnosis refers to whether either parent has a prior mental-illness diagnosis (Columns 1 and 2). Following Hjalmarsson and Lindquist (2019) we define high Socio-Economic Status (SES) as the father having at least 10 years of schooling (Columns 3 and 4). The 2SLS estimates for columns (2) and (4) are based on the equation

$$Y_i = \alpha + \beta Diagnosis_i + \gamma Parent_i + \delta Diagnosis_i X Parent_i + \omega\theta_{ct} + \epsilon_i, \qquad (4)$$

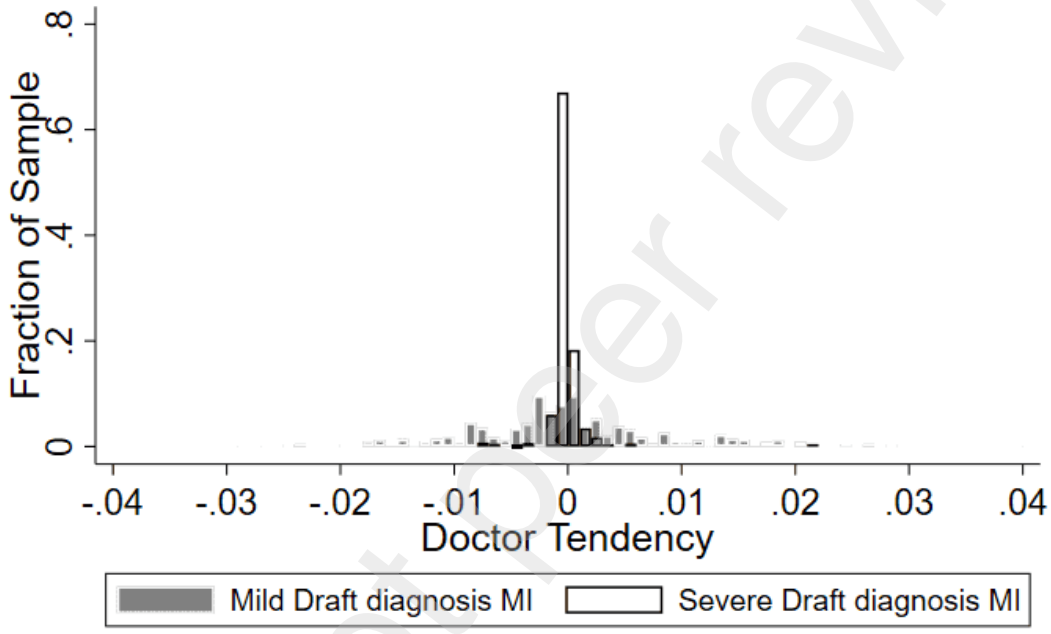
where $Diagnosis_i$ is the instrumental variable for the diagnosis of mental illness, and $Parent_i$ represents the dummy variable for parents' diagnosis in Column (2), and a dummy for socioeconomic status in column (4); All specifications control for center-by-year of enrollment fixed effects. Standard errors clustered at the doctor level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Variable	Coefficient	Interaction	
		Parents' Diagnosis	Socioeconomic Status (SES)
	(1)	(2)	(3)
Future Health			
Internal Death before Age 30	0.0123***	0.00776	0.00430
	(0.00304)	(0.0166)	(0.00643)
External Death before Age 30	-0.00589	0.0306	-0.00256
	(0.00524)	(0.0280)	(0.0101)
Suicide before Age 30	0.000803	0.00859	-0.00908*
	(0.00245)	(0.0133)	(0.00524)
Outpatient at Age 30	0.195***	-0.334**	0.00554
	(0.0621)	(0.132)	(0.0850)
Inpatient at Age 30	0.0367	-0.0372	-0.0267
	(0.0234)	(0.0470)	(0.0503)
Sick days at Age 30	9.423***	-16.413	4.193
	(2.994)	(10.0797)	(9.423)
Labor Market			
Long-spell Unemployed at Age 30	0.0894***	-0.0692	0.0290
	(0.0315)	(0.0648)	(0.0585)
Short-spell Unemployed at Age 30	0.0603**	-0.0180	-0.0554
	(0.0266)	(0.0689)	(0.0410)
Log Income at Age 30	-1.0440**	1.095	-0.160
	(0.506)	(0.727)	(0.860)
Years of Schooling at Age 30	-0.475	0.793	0.719
	(0.661)	(0.599)	(1.120)
Family Structure			
Married at Age 30	-0.0957**	0.210**	-0.0735
	(0.0407)	(0.0930)	(0.0724)
Divorced at Age 30	0.00962	0.00113	-0.0366
	(0.00880)	(0.0288)	(0.0228)
Children at Age 30	-0.0695	0.0856	-0.0582
	(0.0612)	(0.132)	(0.100)
Live With Parents at Age 30	0.0330	-0.0301	-0.0363
	(0.0295)	(0.0728)	(0.0415)
Mechanism			
Mental Illness at Age 30	0.00762	-0.0886	0.0494*
	(0.0173)	(0.0567)	(0.0284)
Depression at Age 30	0.0112**	-0.0342*	0.00401
	(0.00518)	(0.0195)	(0.0104)
Antidepressants at Age 35	0.0889*	-0.0909	0.0662
	(0.0490)	(0.102)	(0.0480)
Therapy at Age 35	-0.00158	-0.00432	-0.00315
	(0.00103)	(0.00357)	(0.00230)

A Additional Results

Appendix Figure A1: Monotonicity — Tendency To Diagnose by Severity

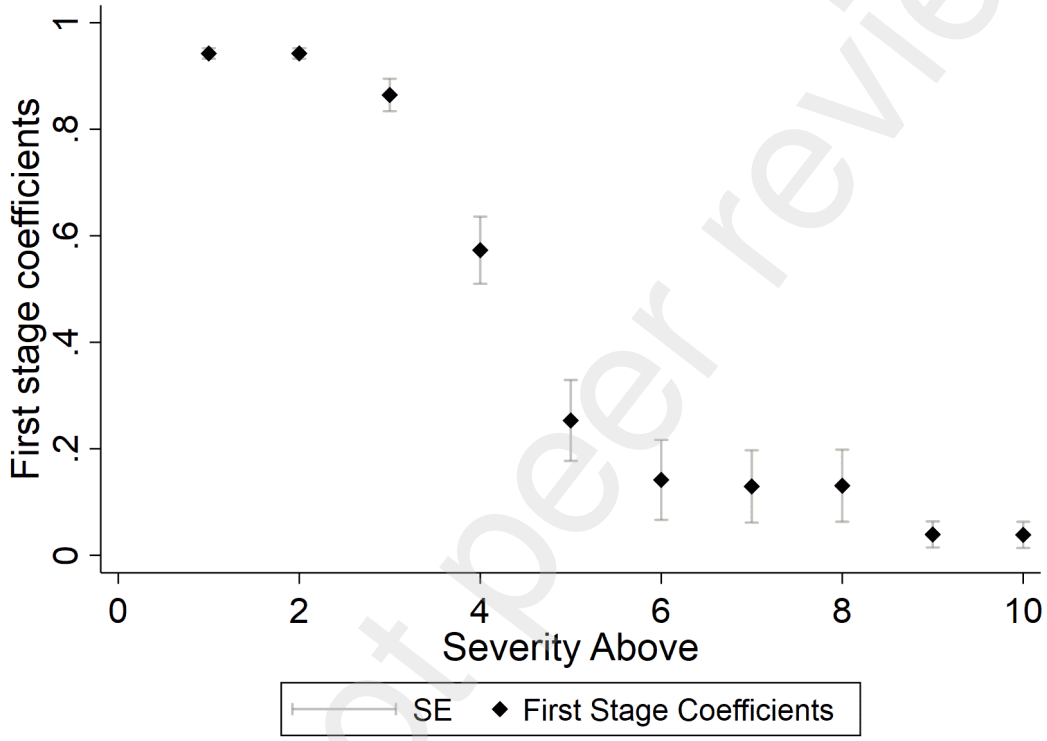
This figure illustrates how the variation of the measure of tendency to diagnose varies by severity of the diagnosis. The figure compares the histograms of tendency to diagnose calculated with severe (severity 10) and mild diagnoses (severity 1-3).



Mild, Mean: -2.6e-11 Median: -.0007 SD: .0089
Severe, Mean: -1.3e-11 Median: -2.1e-16 SD: .0019

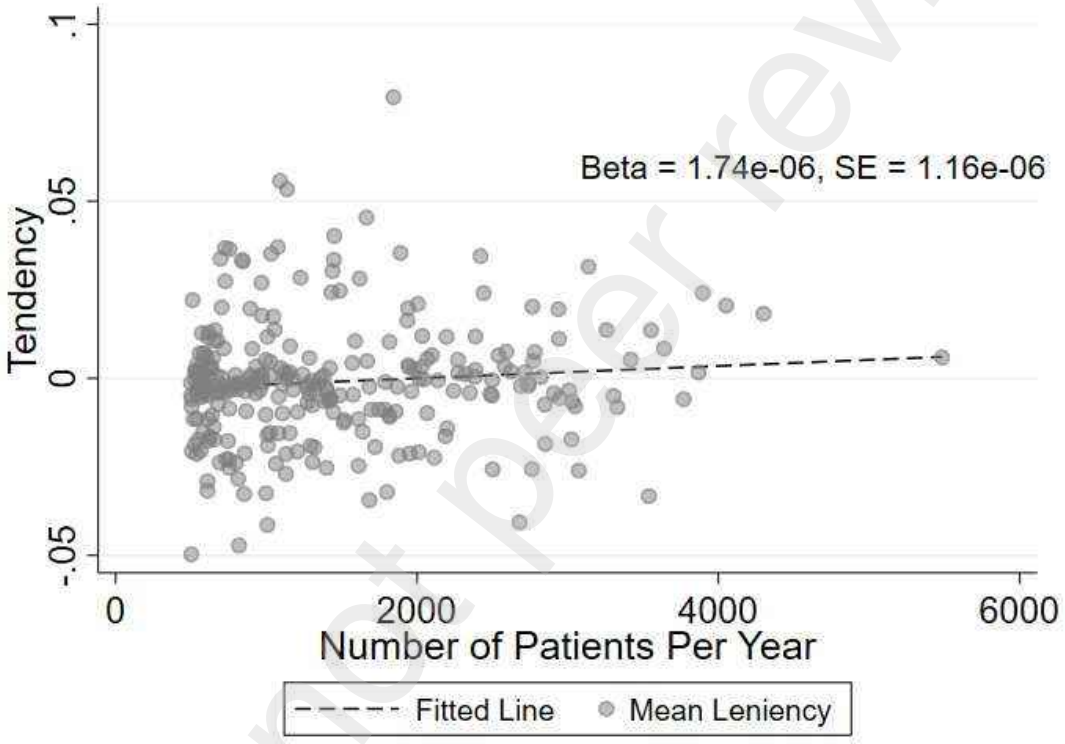
Appendix Figure A2: Monotonicity — First-Stage Estimate for Different Severities

This figure shows the estimates from the first-stage equation 3, calculated for different minimum levels of diagnosed severity of mental illness. The dependant variable for each regression takes a value of one only if a conscript is diagnosed and assessed with a severity of diagnosis at or above the value of the x-axis.



Appendix Figure A3: Monotonicity — Tendency to Diagnose and Number of Conscripts

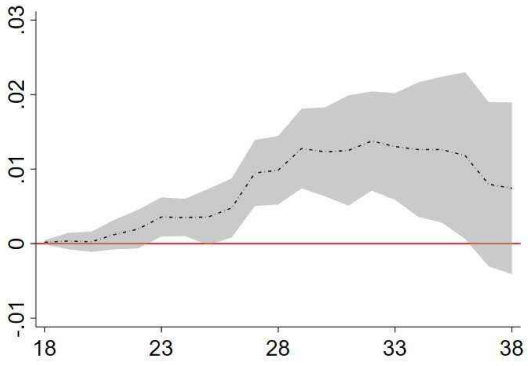
This figure shows the relation between mean doctor tendency to diagnose by year and the number of conscripts evaluated by the doctor each year. Each dot represents an individual doctor-year. The line of best fit between the number of conscripts and tendency to diagnose (shown in the dashed line) has a slope of 0.00000174 (standard error of 0.00000116 and p-value of 0.135).



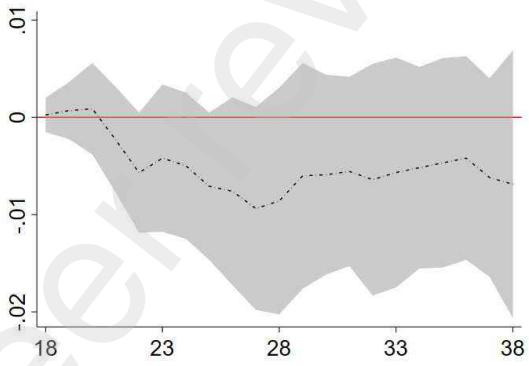
Appendix Figure A4: Event-time Evolution of 2SLS Diagnosis Estimates — Future Health

Each of these panels is the graphical representation of 20 different 2SLS estimations that correspond to the 2SLS regressions presented in Table 5 and onwards, but here the age of the conscript at the time the outcome is measured varies from 18 to 38. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

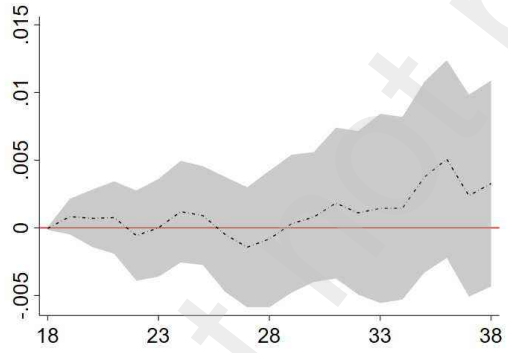
(a) Internal Death



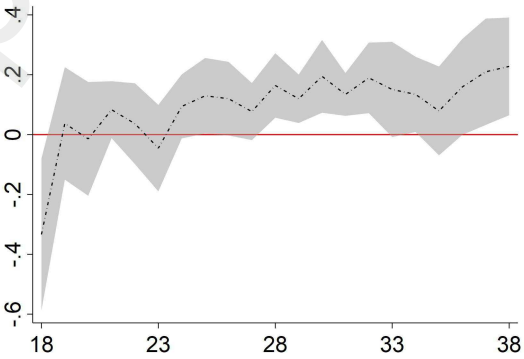
(b) External Death



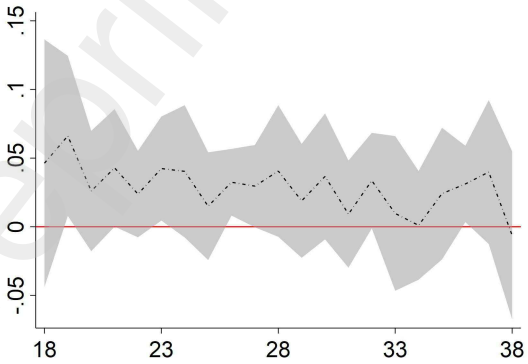
(c) Suicide



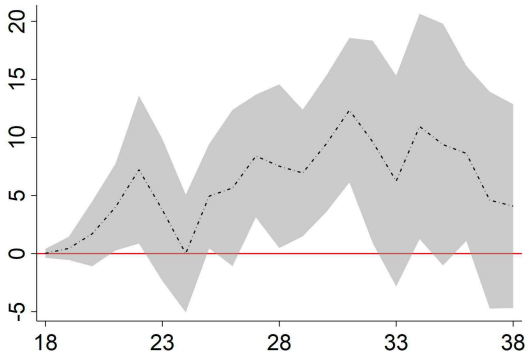
(d) Outpatient



(e) Inpatient



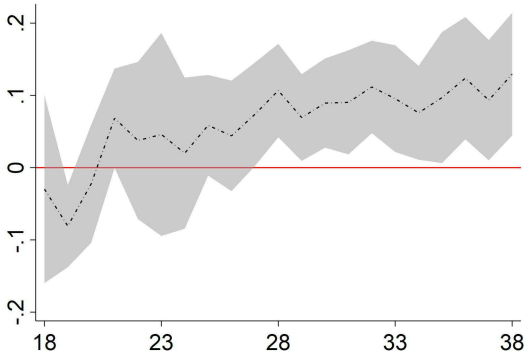
(f) Sick days



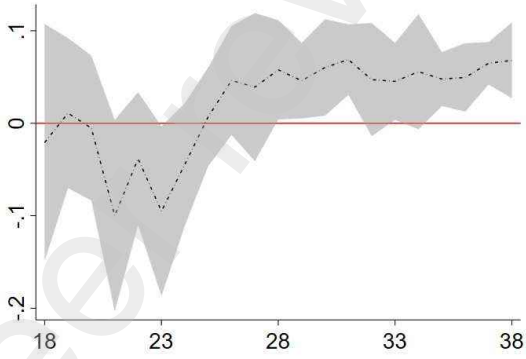
Appendix Figure A5: Event-time Evolution of 2SLS Diagnosis Estimates — Labor Market

Each of these panels is the graphical representation of 20 different 2SLS estimations that correspond to the 2SLS regressions presented in Table 5 and onwards, but here the age of the conscript at the time the outcome is measured varies from 18 to 38. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

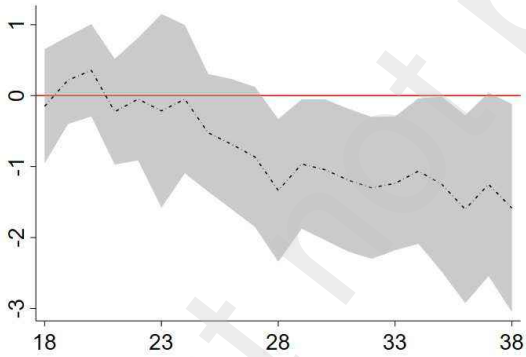
(a) Long-spell Unemployed



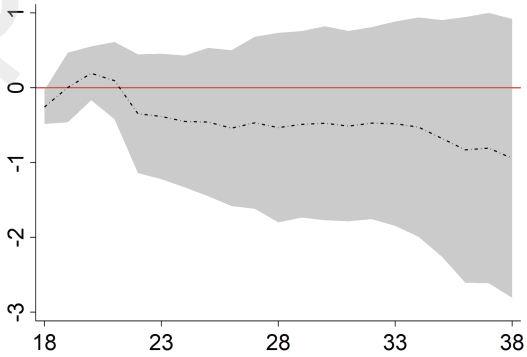
(b) Short-spell Unemployed



(c) Log Income



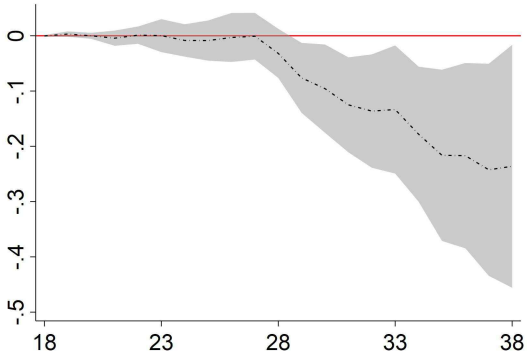
(d) Years of Schooling



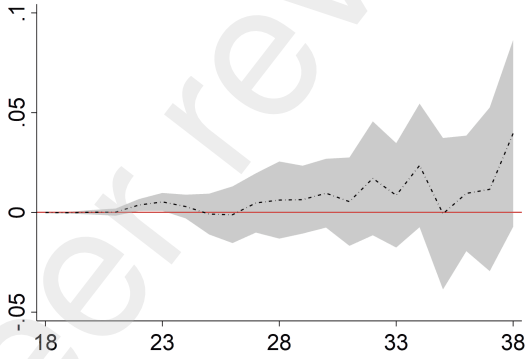
Appendix Figure A6: Event-time Evolution of 2SLS Diagnosis Estimates — Household

Each of these panels is the graphical representation of 20 different 2SLS estimations that correspond to the 2SLS regressions presented in Table 5 and onwards, but here the age of the conscript at the time the outcome is measured varies from 18 to 38. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

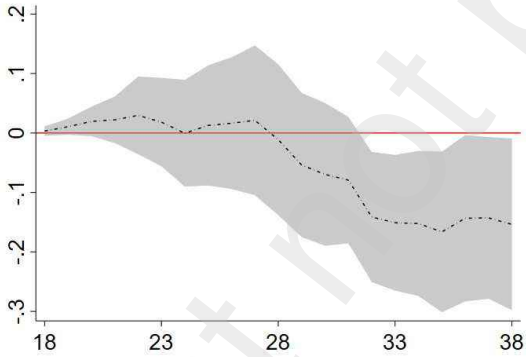
(a) Married



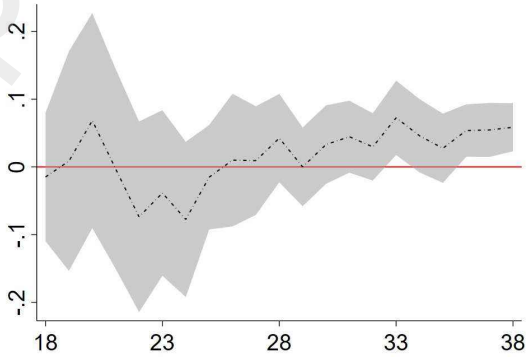
(b) Divorced



(c) Children



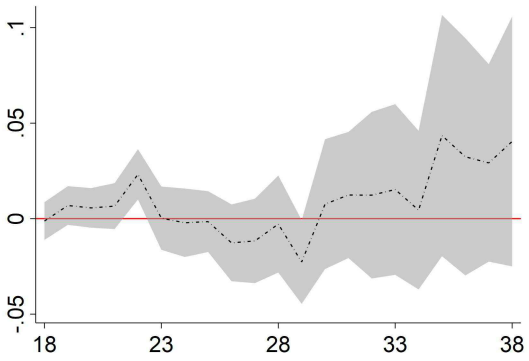
(d) With Parents



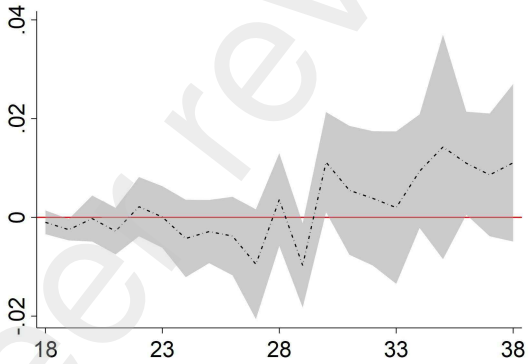
Appendix Figure A7: Event-time Evolution of 2SLS Diagnosis Estimates — Mechanism

Each of these panels is the graphical representation of 20 different 2SLS estimations that correspond to the 2SLS regressions presented in Table 5 and onwards, but here the age of the conscript at the time the outcome is measured varies from 18 to 38. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

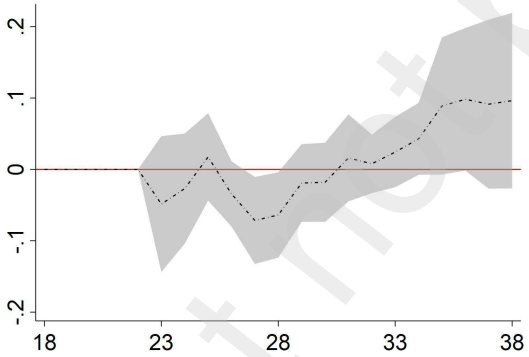
(a) Mental Illness



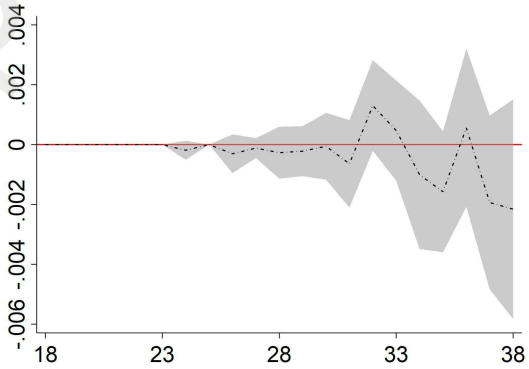
(b) Depression



(c) Antidepressants



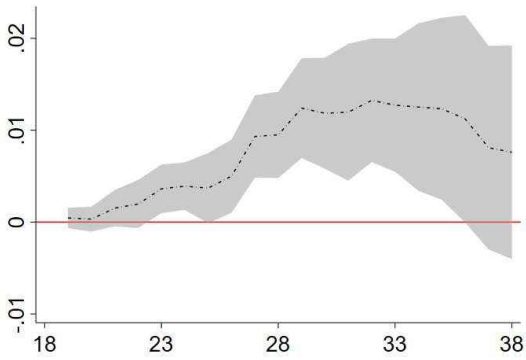
(d) Therapy



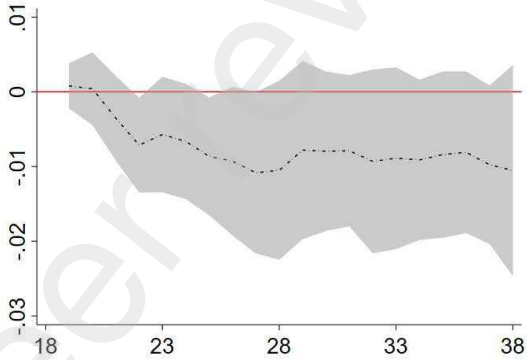
Appendix Figure A8: Diagnosis Direct Effect by Event Time — Future Health

Each of these panels shows the estimate of the direct effect of diagnosis after (after removing the effect of military service) for outcomes at every age from 18 to 38. The estimation methodology is the same as in Table 7 but the effect of diagnosis and the effect of military service are both estimated at each age horizon from conscription. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

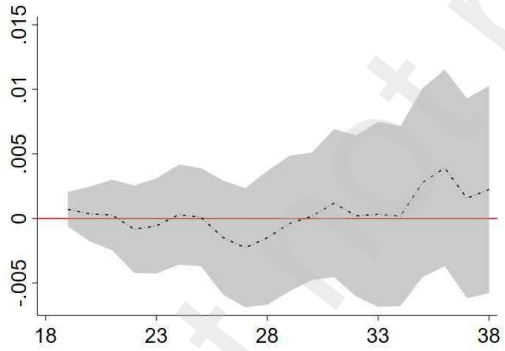
(a) Internal Death



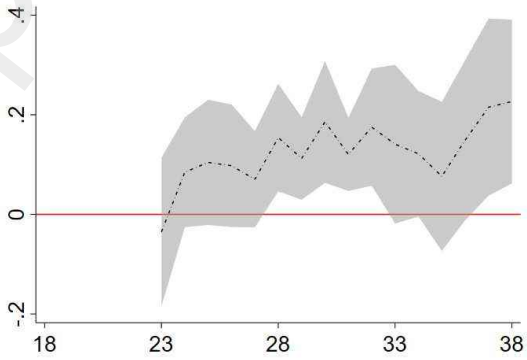
(b) External Death



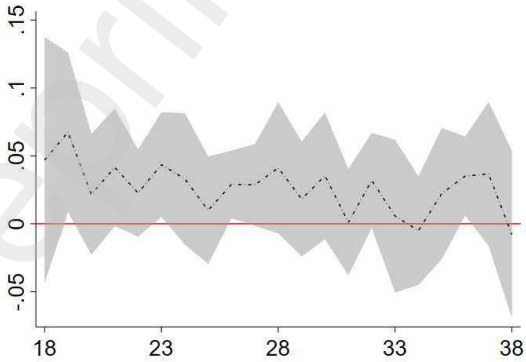
(c) Suicide



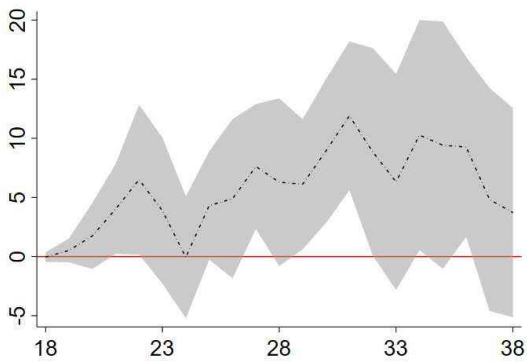
(d) Outpatient



(e) Inpatient



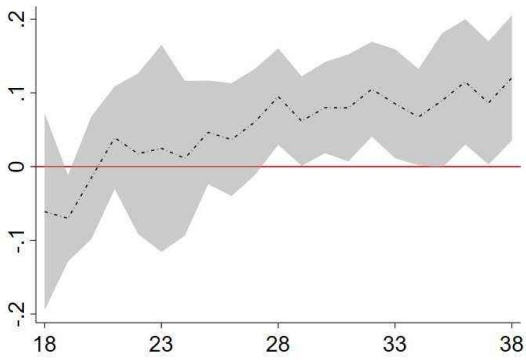
(f) Sick days



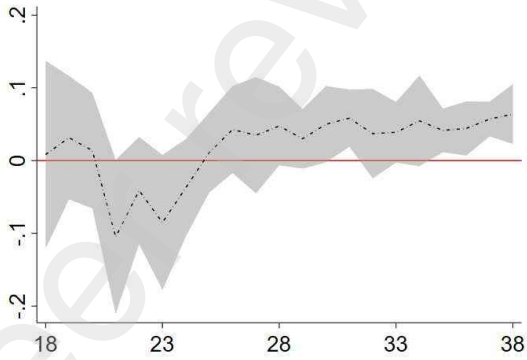
Appendix Figure A9: Diagnosis Direct Effect by Event Time — Labor Market

Each of these panels shows the estimate of the direct effect of diagnosis after (after removing the effect of military service) for outcomes at every age from 18 to 38. The estimation methodology is the same as in Table 7 but the effect of diagnosis and the effect of military service are both estimated at each age horizon from conscription. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

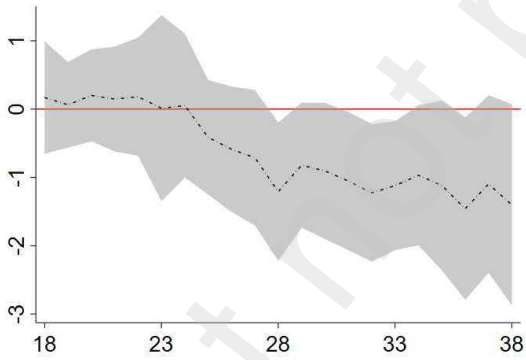
(a) Long-spell Unemployed



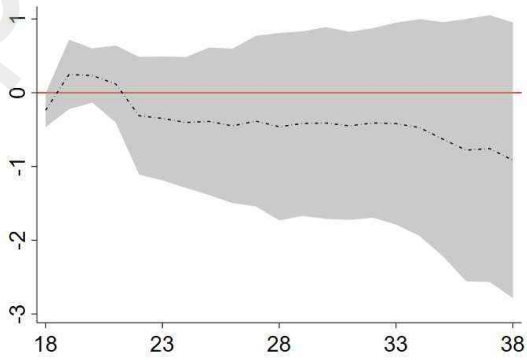
(b) Short-spell Unemployed



(c) Log Income



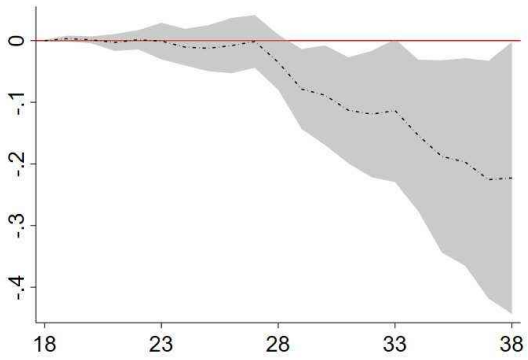
(d) Years of Schooling



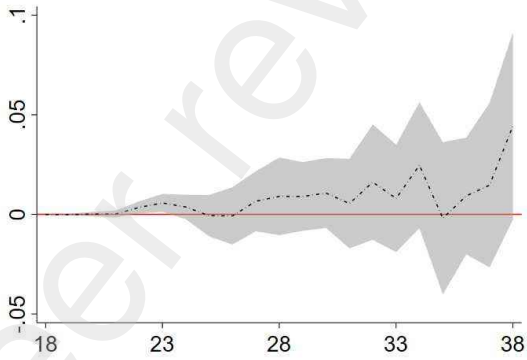
Appendix Figure A10: Diagnosis Direct Effect by Event Time — Household

Each of these panels shows the estimate of the direct effect of diagnosis after (after removing the effect of military service) for outcomes at every age from 18 to 38 (23 to 38 in Panel (d) due to data limitations). The estimation methodology is the same as in Table 7 but the effect of diagnosis and the effect of military service are both estimated at each age horizon from conscription. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

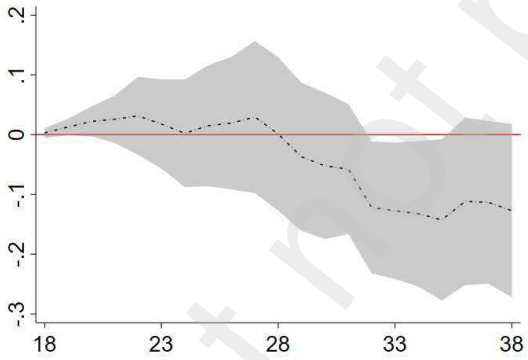
(a) Married



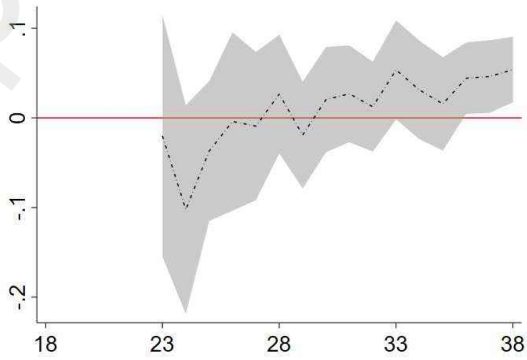
(b) Divorced



(c) Children



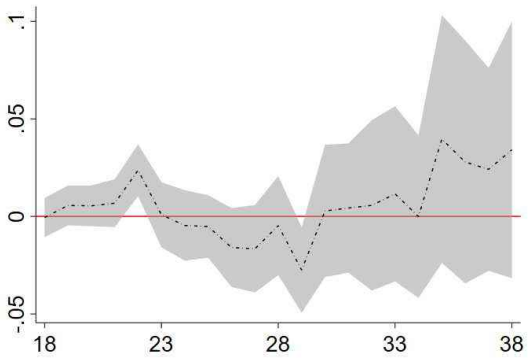
(d) With Parents



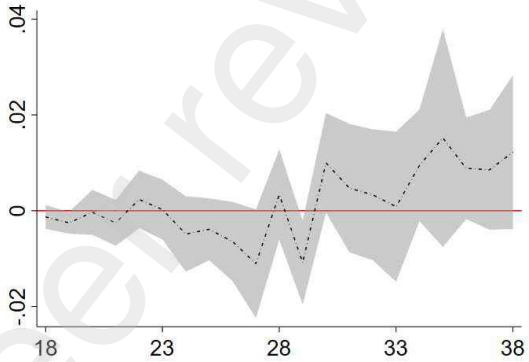
Appendix Figure A11: Event-time Evolution Diagnosis Direct Effect — Mechanism

Each of these panels shows the estimate of the direct effect of diagnosis after (after removing the effect of military service) for outcomes at every age from 18 to 38 (28 to 38 in Panels (c) and (d) due to data limitations). The estimation methodology is the same as in Table 7 but the effect of diagnosis and the effect of military service are both estimated at each age horizon from conscription. The solid line shows the point estimate at each horizon, and the associated 95 percent confidence interval is shown surrounding it.

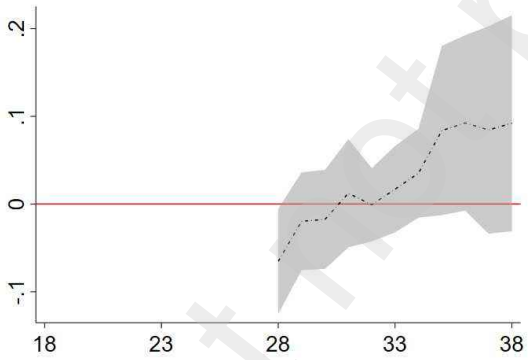
(a) Mental Illness



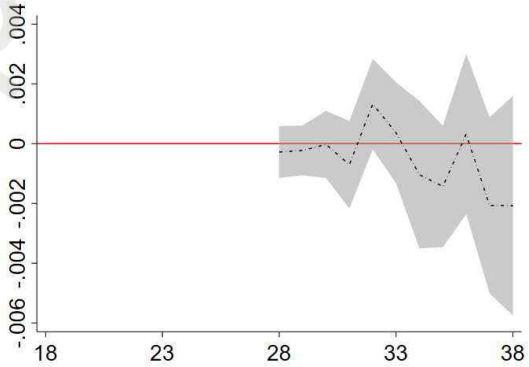
(b) Depression



(c) Antidepressants



(d) Therapy



Appendix Table A1: **Definitions of variables**

This table reports definitions of variables used in the article.

Variable	Definition	Registry
Antidepressants	A dummy variable that takes the value of one if the individual has received a prescription for Antidepressants classified under ATC code "N06A" in a given year; zero otherwise.	SoS (derived)
Birth Year	A numeric variable indicating the individual's year of birth	SCB
Children	A dummy variable that takes the value of one if the individual is a parent to at least one child; zero otherwise. The number of children of an individual is computed by merging the serial numbers of all individuals in the population registry to the serial numbers of conscripts.	SCB (derived)
Depression	A dummy variable that takes the value of one if an an individual is diagnosed with depression. We define a diagnosis of a mental illness as having a code in one's medical record that is included in the chapter V(F) of ICD-10 titled 'Mental and Behavioural Disorders.' For the subset of ICD codes that signify a depression diagnosis we use the list of ICD-10 diagnostic codes proposed by Fiest et al. (2014).	SoS (derived)
Divorced	A dummy variable that takes the value of one if the individual is divorced and not remarried; zero otherwise. The divorce status is derived from civil status variable, when it takes values 4, S, or SP.	RTB (derived)
Doctor Tendency	Draft doctor tendency to diagnose mental illnesses.	Equation (3)
Draft Diagnosis	A dummy variable that takes the value of one if a conscript is diagnosed with a mental illness by a draft doctor, zero otherwise. Mental illness is defined as diagnosed with a disease where the ICD-9 code lies between 290-319, or ICD-10 code is found in the F-chapter.	Riksarkivet, TRM (derived)
Draft Year	Numeric variable representing the conscript's military draft year (1989-2001). For conscripts in the TRM registry (1997-2010), draft year is extracted from the draft date variable $mofdat$. For conscripts who were drafted before 1997, the draft year is imputed by the formula $draftyear = birthyear + 18$.	TRM, SCB
Education	A numeric variable representing the maximum number of years of schooling obtained by the parents of an individual. i.e. Max(Schooling, mother; Schooling, father)	LISA (derived)
External Death	A dummy variable that takes the value of one if the individual has died an external death i.e. classified in Chapter 17 of the ICD-9 codes, or Chapter 19 of the ICD-10 codes; zero otherwise. As such, External death is set to one if variables $KAP17$ or $KAP19$, in the SoS registry, are not blank.	SoS (derived)
Height	A normalized ranking of height across conscript cohorts, taking values 0-9. This variable is called $KPRF\_LNGD$ in the Riksarkivet registry and $lngdkap$ in TRM.	Riksarkivet, TRM
Income	A numeric variable computed as the sum of an individual's total salary, business income, sick day pay, parental allowance, and contractual group health insurance compensation, in SEK. Found in the Income and Tax Registry as variable $CARB$.	IoT

Continued on next page

Appendix Table A1 – continued from previous page

Variable	Definition	Registry
Inpatient	A dummy variable that takes the value of one if the individual has a diagnosis or surgical procedure registered within the inpatient registry, zero otherwise. The inpatient dummy is found in the variable *sv* in the SoS registry	SoS
Internal Death	A dummy variable that takes the value of one if the individual has died an internal death i.e. any death that is not an external death (see External Death); zero otherwise. This is derived by removing external deaths from all deaths found in the SoS registry.	SoS (derived)
IQ	A normalized ranking of cognitive skill score across conscript cohorts, taking values 1-9. This variable is called $PPRF_PGRP$ in the Riksarkivet registry and *gkap* in TRM.	Riksarkivet, TRM
Long-Spell Unemployment	A dummy variable that takes the value of one if an individual is long-spell unemployed for a given year. Otherwise zero. Long-spell unemployment is captured in the occupational status variable $syssstatj == 6$.	LISA (derived)
Married	A dummy variable that takes the value of one if the individual is married; zero otherwise. The married status is derived from civil status variable, when it takes values 2, G, or RP.	RTB (derived)
Mental Illness	A dummy variable that takes the value of one if an individual is diagnosed with a mental illness for a given year, zero otherwise. Mental illness is defined as diagnosed with a disease where the ICD-9 code lies between 290-319, or ICD-10 code is found in the F-chapter.	Riksarkivet, TRM (derived)
Muscle Strength	A normalized ranking of muscle strength score across conscript cohorts, taking values 1-9. This variable is called $KPRF_MUSK$ in the Riksarkivet registry and *muskkap* in TRM.	Riksarkivet, TRM
Outpatient	A dummy variable that takes the value of one if the individual has a diagnosis or surgical procedure registered within the outpatient registry, zero otherwise. The inpatient dummy is found in the variable *ov* in the SoS registry	SoS
Physical Capability	A normalized ranking of physical capability scores across conscript cohorts, taking values 0-9. This variable is called $KPRF_FYSA$ in the Riksarkivet registry and $fyskap$ in TRM.	Riksarkivet, TRM
Physical illness	A dummy variable that takes the value of one if an individual is diagnosed with a physical illness; zero otherwise. Physical illness is defined by ICD-9 codes ranging from 1-289 and 320-759, as well as ICD-10 codes starting with any letter except F, P, R, S, T, U, V, W, X, Y, or Z	NPR
Psychiatric Medicine	A dummy variable that takes the value of one if the individual has received a prescription new psychiatric medication in a given year; zero otherwise. Psychiatric medications are classified under ATC code "N05A".	SoS
Psychological capability	A normalized ranking of psychological capability across conscript cohorts, taking values 0-9. This variable is called $PPRF_PF$ in the Riksarkivet registry and $psyf$ in TRM.	Riksarkivet, TRM
Schooling, father	A numeric variable representing the maximum number of years of schooling obtained by the father of an individual. Found in LISA as variable $sun2000niva$	LISA
Schooling, mother	A numeric variable representing the maximum number of years of schooling obtained by the mother of an individual. Found in LISA as variable $sun2000niva$	LISA

Continued on next page

Appendix Table A1 – continued from previous page

Variable	Definition	Registry
Served in the Military, Tax Records	A dummy variable that takes the value of one if the conscript served in the military; zero otherwise. Military service is derived from the tax records in the LISA registry, where the variable $VPLErs$ captures military service compensation. If $VPLErs! = 0$ for a given year, an individual was serving in the military.	LISA (derived)
Severity	A numeric variable indicating the severity of mental illness determined by doctor upon diagnosis, ranging from 0-9 (9 being most severe) This variable was derived by inverting the variable SJN from the Riksarkivet registry, i.e. $severity = 10 - SJN$, as well as the $grad$ variable from the TRM registry i.e. $severity = 10 - grad$.	Riksarkivet, TRM (derived)
Short-Spell Unemployment	A dummy variable that takes the value of one if the the individual is short-spell unemployed for a given year. Otherwise zero. Short-spell unemployment is captured in the occupational status variable $sysstatj == 5$.	LISA (derived)
Sick Days	The net number of days of paid sick leave. This is the number of days multiplied by the extent of leave (100%, 75%, 50%, etc.). Found in variable *sjukp_ndag* in the LISA registry.	LISA
Suicide	A dummy variable that takes the value of one if the individual has committed suicide; zero otherwise. Suicide is derived by ICD-9 codes starting with E95, and ICD-10 codes in the range X60-X84.	SoS (derived)
Therapy	A dummy variable that takes the value of one if the individual has taken therapy; zero otherwise. We define therapy as any treatments with the ICD-10 codes DU008, DU009, DU010, and DU011.	SoS (derived)
With Parents	A dummy variable that takes the value of one if the individual is living with their parents; zero otherwise. An individual is determined to live with its parents if the family status variable ($FamStall$) lies in the range 321-327, which are different classifications of children over 18.	RTB
Work income, father	A numeric variable representing the income from work earned by an individual's father, in SEK. See variable *Income from Work*.	IoT
Work income, mother	A numeric variable representing the income from work earned by an individual's mother, in SEK. See variable *Income from Work*.	IoT
Years of Schooling	A numeric variable representing the maximum number of years of schooling obtained by the parents of an individual. i.e. Max(Schooling, mother; Schooling, father)	LISA (derived)

Appendix Table A2: Monotonicity 7 — First Stage for Subsamples

This table shows the first-stage coefficient for different subsamples, i.e. we are regressing 1(Draft diagnosis > 0) on our leave-out tendency measure constructed using the procedure described in Section 3. All specifications control for center-by-year of enrollment fixed effects. Standard errors clustered at the doctor level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

SPLIT	Income of Parents		Education of Parents	
SUBSAMPLE	Above median	Below median	Above median	Below median
	(1)	(2)	(3)	(4)
Tendency	0.779***	1.0953***	0.752***	1.0691***
	(0.02353)	(0.0234)	(0.0136)	(0.0178)
Dep. Variable Mean	0.023	0.033	0.023	0.032
Observations	190,551	190,551	159,374	221,728
Clusters	102	102	102	102

SPLIT	Mental Illness Before Age 17		Physical Illness Before Age 17	
SUBSAMPLE	Above median	Below median	Above median	Below median
	(1)	(2)	(3)	(4)
Tendency	1.245***	0.929***	1.839***	0.931***
	(0.206)	(0.00883)	(0.347)	(0.00826)
Dep. Variable Mean	0.068	0.028	0.055	0.028
Observations	4,248	376,854	841	380,257
Clusters	102	102	87	102

Appendix Table A3: Top 10 Causes of Internal Death

This shows the most common types of deaths for conscripts who die of an internal death during our sample period.

Rank	Cause of Internal Death	Share
1	Malignant neoplasm: Brain, unspecified	6.137%
2	Mental and behavioural disorders due to use of opioids	5.160%
3	Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances	4.045%
4	Epilepsy, unspecified	2.371%
4	Myocarditis, unspecified	2.371%
5	Malignant neoplasm: Malignant melanoma of skin, unspecified	1.953%
6	Acute myocarditis, unspecified	1.813%
6	Malignant neoplasm: Bone and articular cartilage, unspecified	1.813%
7	Malignant neoplasm: Testis, unspecified	1.674%
8	Bronchopneumonia, unspecified	1.534%
8	drug dependence*	1.534%
9	Acute lymphoblastic leukaemia	1.395%
9	Acute myocardial infarction, unspecified	1.395%
9	Acute myeloblastic leukaemia	1.395%
10	Malignant neoplasm: Connective and soft tissue, unspecified	1.255%

Appendix Table A4: Tendency to Diagnose a Mental- and Physical-Illness Tests

This table reports the relationship between a doctor's tendency to diagnose a mental and top 10 physical illness during military conscription. The 2SLS regression estimates are based on the equation $Y_i = \alpha + \beta X_i + \epsilon_i$, where Y_i represents the outcome variable 'Doctors Tendency' that refers to the doctor's tendency to diagnose a mental illness (see section 3.2 for our calculation method); β represents the corresponding variable coefficients we have estimated and listed in the table. We also report the p-value of an F-test of the joint significance of the variables included in the regression at the bottom of the table. Standard errors are clustered at the doctor level and reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

Input variables	Doctors' Tendency
	(3)
389 (Hearing loss)	0.00155*
	(0.000868)
477 (Hay fever)	0.000311
	(0.000398)
370 (Eye problems)	0.000372
	(0.000770)
493 (Asthma)	0.00106**
	(0.000467)
724 (Back pain)	0.000651
	(0.000692)
728 (Disorder of muscle ligament and fascia)	-0.00139
	(0.00257)
719 (Joint problems)	0.00321*
	(0.00184)
692 (Dermatitis (skin))	0.000242
	(0.000751)
845 (Sprained ankle or foot)	0.000426
	(0.000792)
346 (Migraine)	0.000571
	(0.000698)
Dep. Variable Mean	-3.53e-11
Observations	400,104
p-value Joint F-test	0.142
Clusters	102

Appendix Table A5: 2SLS Military Service, Draft Diagnosis, and Interaction — Future Health

This table reports 2SLS estimates of the effect of military service, draft diagnosis mental illness, and their interaction in Sweden on subsequent outcomes. The 2SLS estimates are based on the equation

$$Y_i = \alpha + \beta Service_i + \gamma Diagnosis_i + \delta Service_i X Diagnosis_i + \omega\theta_{ct} + \epsilon_i, \quad (5)$$

where $Service_i$ is the instrumental variable first exploited by Hjalmarsson and Lindquist (2019); $Diagnosis_i$ is an dummy variable of doctors' diagnose on mental illness; $Service_i X Diagnosis_i$ is the interaction of service variable and diagnose variable; θ_{ct} is the center time and county time fixed effects; β, γ, and δ are the corresponding coefficients and their estimates are listed in the following tables. All specifications control for center-by-year of enrollment and county-by-year of enrollment fixed effects. Standard errors clustered at the officiator level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES Age	Internal Death Before Age 30	External Death Before Age 30	Suicide Before Age 30
	(1)	(2)	(3)
Military service	-0.00145	-0.00551*	-0.00139
	(0.00142)	(0.00321)	(0.00138)
ServiceXDiagnosis	0.000408	-0.0351	-0.0265
	(0.00900)	(0.0366)	(0.0294)
Draft diagnosis	-0.000799	0.0180	0.0139
	(0.00498)	(0.0196)	(0.0157)
Observations	265,207	265,207	265,207
Dep. Var mean	0.00124	0.00447	0.00138
Time x center FE	Yes	Yes	Yes
Time x county FE	Yes	Yes	Yes
Nr of clusters	72	72	72
VARIABLES Age	Outpatient At Age 30	Inpatient At Age 30	Sick days At Age 30
	(4)	(5)	(6)
Military service	-0.0282*	-0.00119	-1.445
	(0.0160)	(0.00931)	(1.828)
ServiceXDiagnosis	0.0411	-0.138*	-1.314
	(0.112)	(0.0756)	(10.480)
Draft diagnosis	0.00299	0.0817**	3.0874
	(0.0605)	(0.0398)	(5.611)
Observations	263,851	263,851	257,466
Dep. Var mean	0.224	0.0285	4.448
Time x center FE	Yes	Yes	Yes
Time x county FE	Yes	Yes	Yes
Nr of clusters	72	72	72

Appendix Table A6: 2SLS Military Service, Draft Diagnosis, and Interaction — Labour Market

This table reports 2SLS estimates of the effect of military service, draft diagnosis mental illness, and their interaction in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (5). All specifications control for center-by-year of enrollment and county-by-year of enrollment fixed effects. Standard errors clustered at the officiator level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Long-spell Unemployed	Short-spell Unemployed	Log Income	Years of Schooling
Age	At Age 30	At Age 30	At Age 30	At Age 30
	(1)	(2)	(3)	(4)
Military service	-0.0277***	-0.0318***	0.4130***	0.197
	(0.0102)	(0.00981)	(0.134)	(0.183)
ServiceXdraft diagnosis	-0.0295	0.0334	0.270	-0.129
	(0.0794)	(0.0655)	(1.00602)	(0.789)
Draft diagnosis	0.0333	-0.0165	-0.375	-0.488
	(0.0415)	(0.0352)	(0.524)	(0.440)
Observations	263,851	263,851	259,546	257,424
Dep. Var mean	0.0488	0.0555	11.761	12.794
Time x center FE	Yes	Yes	Yes	Yes
Time x county FE	Yes	Yes	Yes	Yes
Nr of clusters	72	72	72	72

Appendix Table A7: 2SLS Military Service, Draft Diagnosis, and Interaction — Family Structure

This table reports 2SLS estimates of the effect of military service, draft diagnosis mental illness, and their interaction in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (5). All specifications control for center-by-year of enrollment and county-by-year of enrollment fixed effects. Standard errors clustered at the officiator level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES Age	Married At Age 30	Divorced At Age 30	Has Child At Age 30	With Parents At Age 30
	(1)	(2)	(3)	(4)
Served in the Military	0.0307	0.00239	0.0653**	-0.0406***
	(0.0196)	(0.00403)	(0.0284)	(0.0128)
ServiceXdraft diagnosis	-0.441**	0.0443	-0.591**	0.111
	(0.206)	(0.0358)	(0.271)	(0.0884)
Draft diagnosis	0.235**	-0.0181	0.336**	-0.0575
	(0.108)	(0.0190)	(0.144)	(0.0472)
Observations	263,851	263,851	265,207	257,466
Dep. Var mean	0.183	0.0111	0.362	0.0733
Time x center FE	Yes	Yes	Yes	Yes
Time x county FE	Yes	Yes	Yes	Yes
Nr of clusters	72	72	72	72

Appendix Table A8: 2SLS Military Service, Draft Diagnosis, and Interaction — Mechanism

This table reports 2SLS estimates of the effect of military service, draft diagnosis mental illness, and their interaction in Sweden on subsequent outcomes. The 2SLS estimates are based on equation (5). All specifications control for center-by-year of enrollment and county-by-year of enrollment fixed effects. Standard errors clustered at the officiator level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Mental Illness	Depression
Age	At Age 30	At Age 30
	(1)	(2)
Military service	-0.0143**	-0.00308
	(0.00642)	(0.00343)
ServiceXdraft diagnosis	-0.00463	-0.0253
	(0.0439)	(0.0209)
Draft diagnosis	0.0174	0.0151
	(0.0228)	(0.0110)
Observations	263,851	263,851
Dep. Var mean	0.0151	0.00338
Time x center FE	Yes	Yes
Time x county FE	Yes	Yes
Nr of clusters	72	72
VARIABLES	Antidepressants	Therapy
Age	At Age 35	At Age 35
	(3)	(4)
Military service	-0.0149	0.000434
	(0.00997)	(0.000537)
ServiceXdraft diagnosis	-0.0337	0.000613
	(0.0807)	(0.00245)
Draft diagnosis	0.0506	-4.04e-05
	(0.0429)	(0.00125)
Observations	263,194	263,194
Dep. Var mean	0.0502	0.000163
Time x center FE	Yes	Yes
Time x county FE	Yes	Yes
Nr of clusters	72	72

Appendix Table A9: Diagnosis and Psych. Meds. age 18-21 — 2005-2008 Sample

This table reports 2SLS estimates of the effect of mental-illness diagnosis on antidepressants and psychiatric medications usage in the years right after conscription. For this purpose, we utilize a sample from the years 2005-2008. The 2SLS estimates are estimated from equation (3) presented in section 3. Standard errors clustered at the officiator level are reported in parentheses. *** = significant at 1 percent level, ** = significant at 5 percent level, * = significant at 10 percent level.

VARIABLES	Antidepressants usage age 18-21	Psychiatric Medicines usage age 18-21
	(1)	(2)
Served in the Military	1.506	2.164
	(1.348)	(1.977)
Observations	19,163	19,163
Dep. Var mean	0.0167	0.0332
Time x center FE	Yes	Yes
Nr of clusters	11	11