The Effects of a Workplace Mental Health Screening Program: Evidence from Japan

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This research is highly preliminary

Introduction

- WHOは世界で8人に1人が精神障害を抱えていると推計しており、メンタルヘルスの問題は全世界的に重要 (WHO,2022a)

- メンタルヘルスの問題は経済学において重要か？
  - 個人の健康や医療費のコストだけではない
  - 労働者のプレゼンティズムや欠勤などにも影響

- 精神疾患の予防的ケア が解決策
  - 精神疾患を未然に防ぐ対策による予防
  - 職場でのメンタルヘルスのスクリーニングは一つの有力なアプローチである [1]

[1] WHO (2022b)

Introduction

- 職場でのメンタルヘルスのスクリーニングの有効性は明らかでない
  - サンプルサイズが小さい (Ketelaar et al. (2013))
  - 因果関係を示していない (Imamura et al. (2018))

- 企業が従業員のメンタルヘルス情報を活用するチャネルも考慮する必要
  - 企業は労働者の健康を観測できないという情報の非対称性 (Pichler and Ziebarth (2017), Barone (2023))
  - 企業はメンタルヘルスにかかるコストを削減したいが、情報が不足している

Research Questions

1. メンタルヘルスのスクリーニングは労働者のメンタルヘルスおよび労働アウトカムを改善するか？

2. アウトカムを改善するとしたらどのチャネルが重要か？
   - 個人への情報介入か？（individual channels）
   - 従業員のスクリーニング情報を用いた職場環境の改善か？ (Workplace channels)

- 日本のストレスチェック制度のケースで検証

Related Literature

- 職場ウェルネスプログラムの効果 (Jones et. al (2019), Simonsen and Slipper (2024))
  - Physical healthや労働アウトカムに対する平均的な効果はないが、ハイリスクの個人は外来の医療利用が減少
  - 健康な人ほどウェルネスプログラムに参加しがちというセレクションバイアス
- メンタルヘルスが労働アウトカムに与える影響 (Prudon (2024))
  - メンタルヘルス治療の待ち時間が長くなるほど労働アウトカムが悪化
- メンタルヘルススクリーニングの効果 (Ketelaar et al. (2013), Imamura et al. (2018))
  - 個人への情報介入よりも職場改善がより重要

Institutional Background ①

- ストレスチェック制度 (2015年12月-)
  - 常用労働者50人以上の事業所で毎年義務
  - 結果報告を怠ると最大50万円の罰金

- 義務化の範囲
  - ストレスチェック計画の策定
  - 調査票による労働者のストレスの評価
  - 労働者への結果の通知

    $\Longrightarrow$ 点数結果や高ストレス者への面接の勧奨

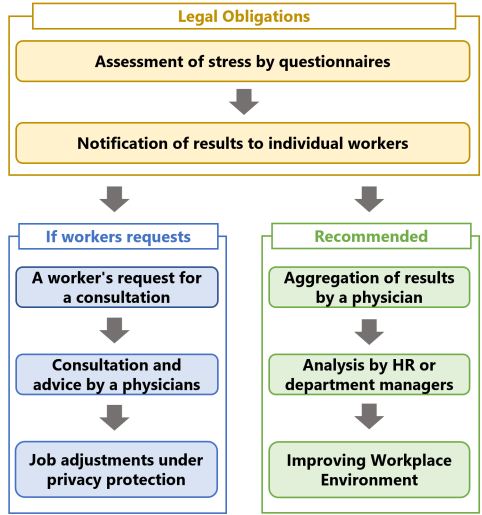


Figure 1: Overview of Stress Check Program

Institutional Background ②

- もし労働者が医師との面談を要望した場合は、事業所は受け入れる義務がある
  - もし労働者が承認すれば、医師は職場と労働条件等の調整ができる

- ストレスチェック結果の集計と分析
  - 医師が属性あるいは事業所別などで集計
  - 人事担当者あるいは部署の管理監督者に共有

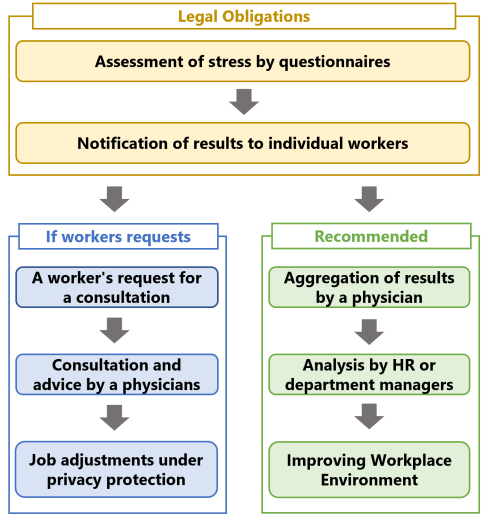
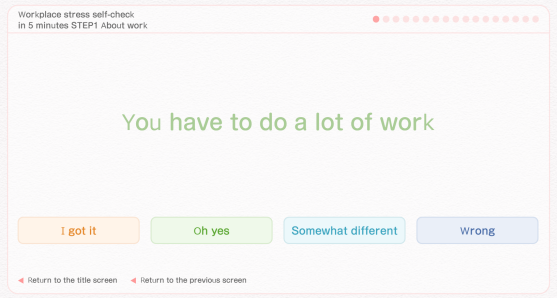
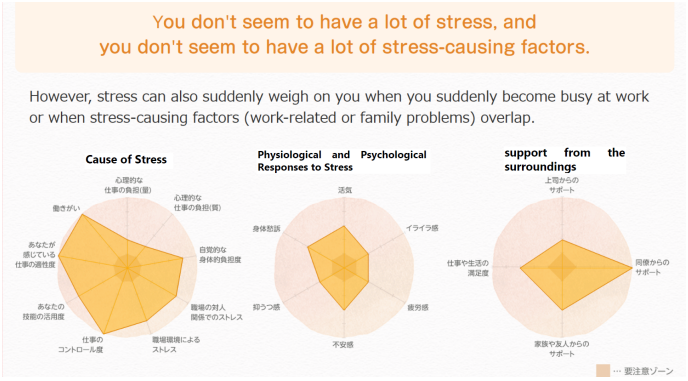


Figure 1: Overview of Stress Check Program

Stress Check Contents: Questionnaire



Stress Check Contents: Result Part



- 人事担当者や管理監督者は同意なしに個人の結果を見ることはできない
- 厚労省の調査によると, 80%の回答者が正直に答えていると回答

Data ①

- 労働安全衛生調査 ***(SISH)*** in 2013, 2015-2018
  - 厚生労働省が提供するミクロデータで、repeated cross-sectionデータ
- 事業所票
  - 事業所にストレスチェックの実施有無、メンタル由来の休職者数・退職者数、労働改善施策を質問
- 個人票
  - 事業所票の一部事業所から個人をランダムにサンプリング
  - 理由毎のストレスの有無、ストレスによる医師等への相談有無

Data ②

- 賃金構造基本統計調査 ***(BSWS)*** in 2012-2019
  - 厚生労働省が提供するミクロデータで、個人レベルのrepeated cross-sectionデータ
  - 賃金台帳に基づいて、個人の労働アウトカムを測定

- 経済センサス in 2014, 2016, and 2019
  - 上記のデータセットと事業所レベルでマッチングする
  - ストレスチェック導入直前の常用労働者数と事業所の情報を取得する

Data (Sample Construction)

- 分析サンプル
  - SISHとBSWSのサンプル構築を別々に行う
  - 企業の支店は除外
  - 正規労働者のみ
  - 常用労働者数が20〜80の事業所に絞り込み
  - 2019年からの働き方改革法案の影響を避けるため、影響を受ける小売は除外
- SISH establishments sample: 7,025 obs.
- SISH individuals sample: 5,637 obs.
- BSWS sample: 988,395 obs.

Identification Strategy

- 従業員数50人で発生する他の義務 (1970年代から)
  - 産業医の選任, 衛生委員会の設置, 衛生管理者の選任

- Difference-in-Difference
  - Parallel Trend Assumption
  - No-anticipation assumption

Event study

- Establishment level

$$Y_{ijt} = \alpha + \lambda_t + \delta D_{j2014} + \sum_{k \neq 2015} \beta_k \mathbb{1}[t = k] \cdot D_{j2014} + X_{ijt}\theta + Z_{j2014}\gamma + \varepsilon_{ijt} \quad (1)$$

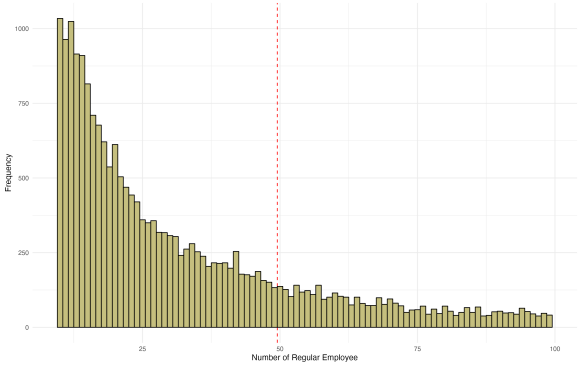
- Individual level

$$Y_{jt} = \alpha + \lambda_t + \delta D_{j2014} + \sum_{k \neq 2015} \beta_k \mathbb{1}[t = k] \cdot D_{j2014} + Z_{j2014}\gamma + \varepsilon_{jt} \quad (2)$$

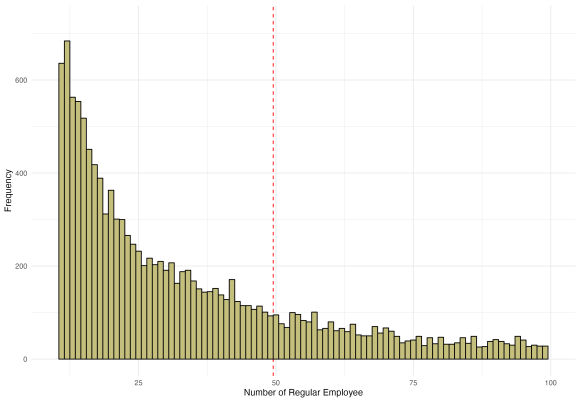
  - Y_{ijt}: The outcome of interest for individual i at establishment j in year t
  - D_{j2014}: takes 1 if the # of employee exceeds 50 for j in 2014
  - X_{ijt}: a vector of individual characteristics (gender, age, tenure)
  - Z_{j2014}: a vector of establishment characteristics (# of employees, year FE, industry FE, prefecture FE, etc.)

Distribution of Number of Employees in 2014

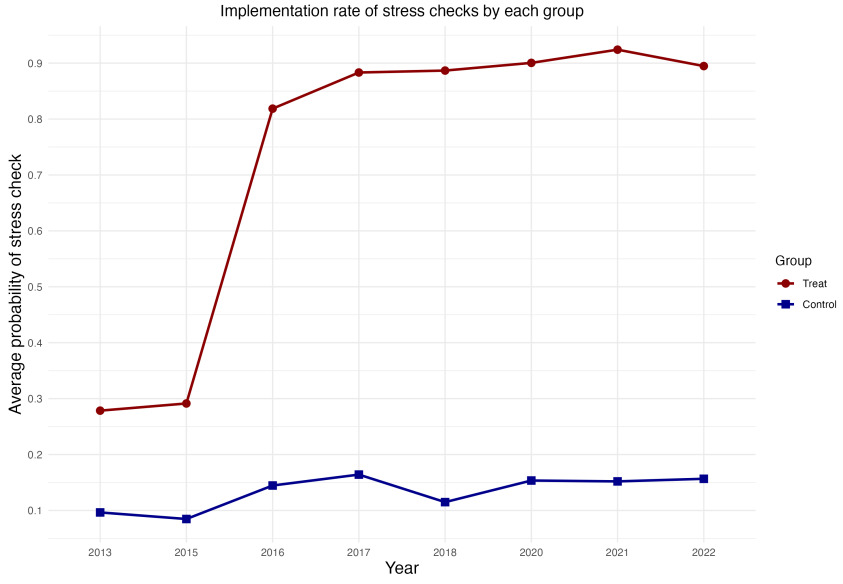
SISH sample



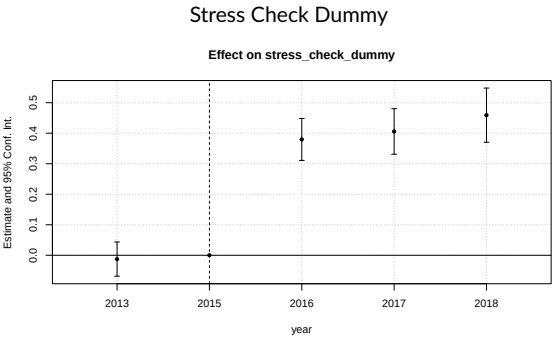
BSWS Sample



Stress check Implementation rate



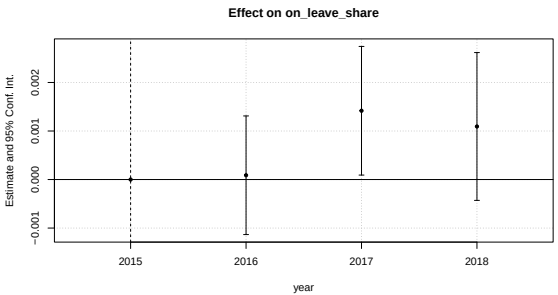
Result: Effect on Stress Check Implementation (1st Stage)



	(1)
2013 × *Treat*	-0.013
	(0.029)
2016 × *Treat*	0.380***
	(0.035)
2017 × *Treat*	0.406***
	(0.037)
2018 × *Treat*	0.459***
	(0.045)
Observations	6,915
Controls	✓
year fixed effects	✓
prefecture fixed effects	✓
industry fixed effects	✓

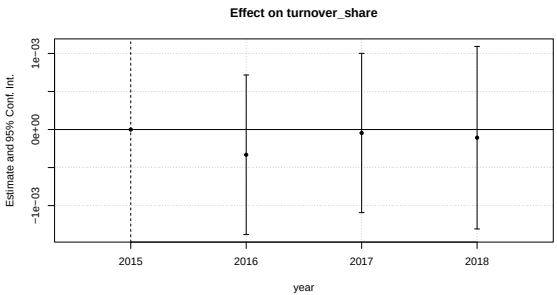
Result: Effect on Mental health-related outcomes

Proportion of Leave of Absence due to mental illness



DID estimate: 0.0006*, Control Mean: 0.002 $\Longrightarrow$ 30%

Proportion of Turnover due to mental illness

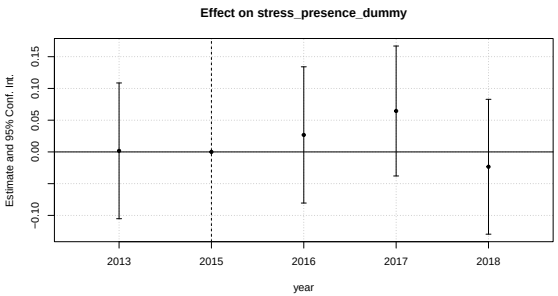


DID estimate: -0.0002, Control Mean: 0.001

- メンタル由来の休職が増加 $\Longleftarrow$ メンタル不調者の発見増加による可能性

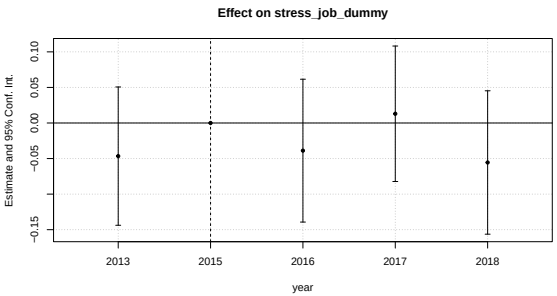
Result: Effect on Presence or Absence of Stress

Stress Presence Dummy



DID estimate: 0.023, Control Mean: 0.595

Stress Due to the Quantity and Quality of Job Dummy



DID estimate: -0.003, Control Mean: 0.322

Labor Market Outcomes (BSWS Sample)

- 実労働日数
  - 実労働日数はアブセンティーズムの改善で増加する可能性

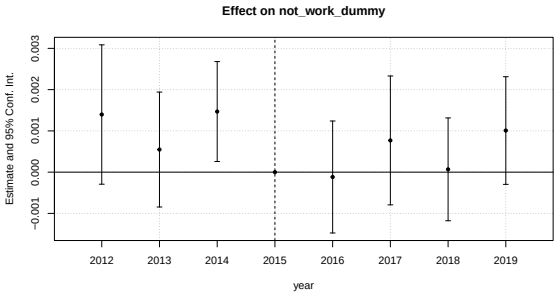
- 残業時間

  労働環境改善の一環として減少する可能性がある (Cygan-Rehm and Wunder (2018))

- 総労働時間
  - 総労働時間については、期待される効果の方向性は曖昧

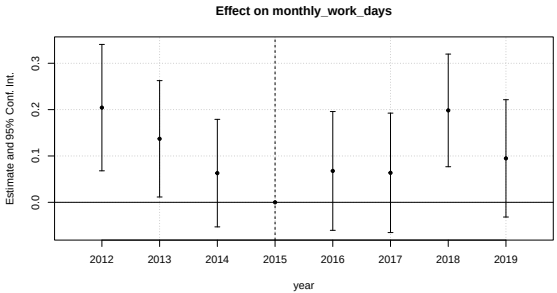
Effect on Labor Market Outcomes (BSWS Sample)

𝟙 (Monthly Working Days = 0)



DID estimate: -0.0004, Control Mean: 0.003

Monthly Working Days

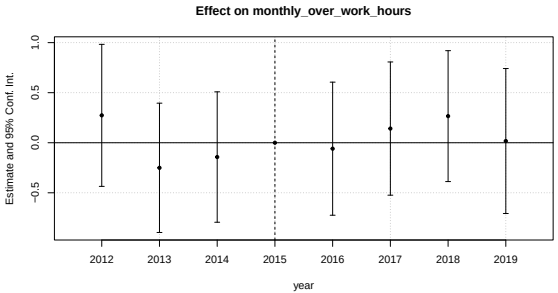


DID estimate: 0.014, Control Mean: 22.326

- 実労働日数の増加は見られず、相対的な増加幅も非常に小さい

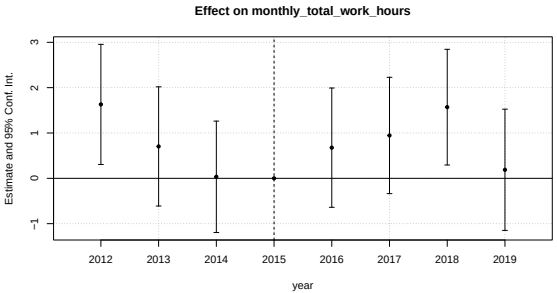
Effect on Labor Market Outcomes (BSWS Sample)

Monthly Over Working Hours



DID estimate: 0.136, Control Mean: 9.949

Monthly Total Working Hours

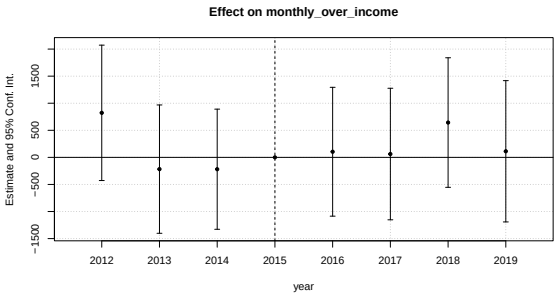


DID estimate: 0.076, Control Mean: 179.329

- 労働時間の増加は見られず、相対的な増加幅も非常に小さい

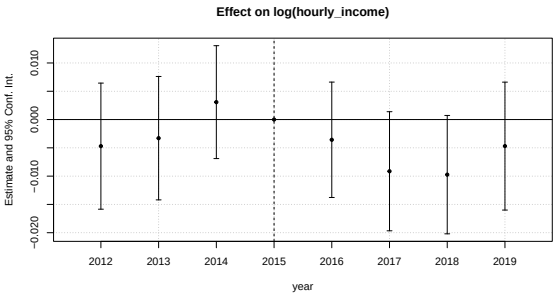
Effect on Labor Market Outcomes (BSWS Sample)

Monthly Overtime Pay



DID estimate: 204.8, Control Mean: 17,802.520

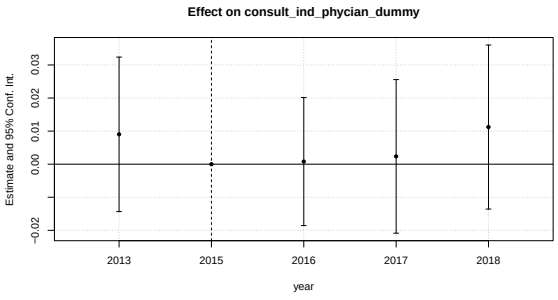
log (Hourly Income)



DID estimate: -0.004, Control Mean: 7.449

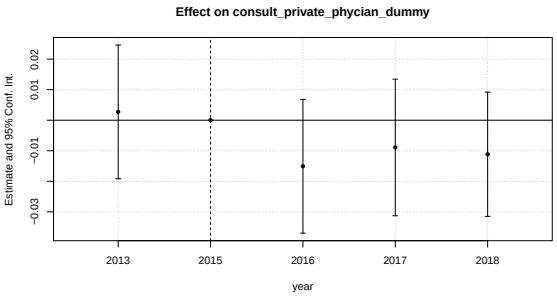
Mechanism: Effect on Visit to a Physician (Individual Channels)

Visit to an Industrial Physician



DID estimate: 0.0004, Control Mean: 0.007

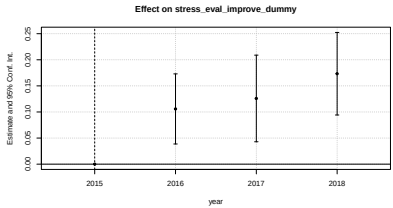
Visit to a Private Physician



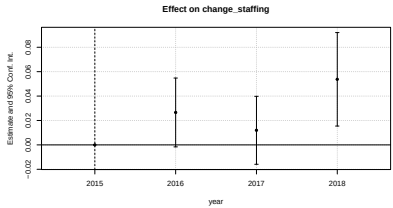
DID estimate: -0.013*, Control Mean: 0.010 $\Longrightarrow -130\%$

Mechanism: Effect on Workplace MH Policies (Workplace Channels)

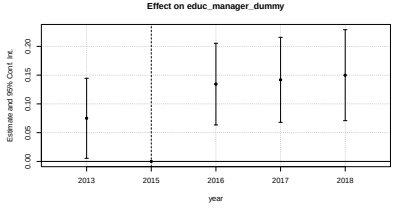
Utilization of workers stress check result (Dummy)



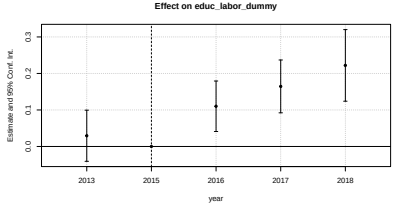
Improvement of Job Allocation for Employees (Dummy)



Implementation of MH education for Managers (Dummy)



Implementation of MH education for Employees (Dummy)



Heterogeneity by Age: Effect on Labor market outcomes

Dependent Variables:	not_work_dummy	monthly_work_days	log(monthly_total_income)	monthly_over_income	monthly_over_work_hours	monthly_total_work_hours	log(hourly_income)
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables							
Treat	0.0010***	-0.059*	0.014***	-1,070.2***	-0.615***	-0.868***	0.019***
	(0.0003)	(0.031)	(0.003)	(365.7)	(0.199)	(0.328)	(0.003)
Under 40	0.003***	-0.210***	-0.094***	450.0***	0.758***	-0.999***	-0.085***
	(0.0003)	(0.011)	(0.002)	(162.9)	(0.085)	(0.123)	(0.002)
Treat × Post	-0.0002	0.037	-0.005	86.5	0.089	0.192	-0.006
	(0.0003)	(0.034)	(0.003)	(392.0)	(0.213)	(0.362)	(0.004)
Treat × Under 40	-0.001***	0.028**	-0.020***	1,757.3***	0.947***	1.13***	-0.027***
	(0.0003)	(0.014)	(0.003)	(283.9)	(0.149)	(0.194)	(0.003)
Post × Under 40	0.0008**	-0.053***	0.005***	-1,043.8***	-0.621***	-0.902***	0.011***
	(0.0003)	(0.012)	(0.002)	(175.6)	(0.097)	(0.142)	(0.002)
Treat × Post × Under 40	-0.0004	0.031	6.8×10^{-5}	395.4	0.216	0.395	-0.003
	(0.0004)	(0.020)	(0.003)	(343.6)	(0.183)	(0.248)	(0.003)
Fixed-effects							
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	962,236	962,236	965,181	961,559	957,376	956,746	963,353
R^2	0.059	0.457	0.680	0.430	0.445	0.457	0.741

- 性別によるheterogeneityもない ➔ **Appendix**
- 医師への相談への影響についてもheterogeneityは見られない ➔ **Appendix**

Conclusion (Tentative)

- ストレスチェックの義務化によって、事業所によるメンタルヘルスのスクリーニングの実施率は大幅に上昇
- 産業医等への相談は増えないが、事業所は分析結果を活用し、マネージャーや従業員へのメンタルヘルス教育を増やした
- しかしながら、主要なメンタルヘルスと労働関連のアウトカムへの改善効果は見られない
- 少なくともメンタルヘルススクリーニングの政策において、個人への情報介入より職場を通じた改善効果が有効とは言えない
  - 企業が有効な労働改善施策を実施できていない
  - 有効でない労働改善政策が増えているのだとしたら非効率である可能性も

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Data: Outcomes

- Establishment-level variable (related to outcomes)
  - # of the leave of absence due to mental illness
  - Change in number of employees (difference between t and t-1)
  - # of turnover due to mental illness
  - # of workers with long working hours (over 45, 80, 100)
- Individual-level variable
  - Individual characteristics
  - Hospital visits (private physician, psychologist, industrial physician, etc.)
  - Stress presence dummy (with identifiable causes)
  - Smoking dummy

Data: Establishment policy variables

- Establishment policy variables
  - Stress check implementation dummy
  - # of interviews with physicians
  - Dummy for improving work allocation using results
  - Dummy for improved staffing structure using results

Summary Stats (SISH establishment)

Statistic	N	Mean	St. Dev.	Min	Max
num_of_regular	7,024	54.141	76.925	10	1,679
tot_num_of_emp	5,342	54.855	82.869	10	1,682
num_of_overtime_45_80	5,054	3.178	9.210	0	186
num_of_overtime_80_100	4,425	0.315	1.483	0	22
num_of_on_leave	5,424	0.161	0.644	0	14
num_of_turnover	5,355	0.096	0.398	0	5
stress_check_dummy	6,959	0.222	0.416	0	1
sanitation_manager	5,450	0.337	0.473	0	1
is_ind_physician	5,459	0.352	0.478	0	1
is_sanit_comitee	4,079	0.133	0.339	0	1
overtime_45_80_share	4,880	0.051	0.106	0.000	0.673
overtime_80_100_share	4,284	0.004	0.016	0.000	0.131
on_leave_share	5,258	0.002	0.008	0.000	0.062
turnover_share	5,170	0.001	0.006	0.000	0.053

Summary Stats (SISH individual)

Statistic	N	Mean	St. Dev.	Min	Max
is_male	5,632	0.704	0.457	0	1
is_age_over_40	5,637	0.594	0.491	0	1
num_of_regular_2014	5,637	44.998	15.727	21	80
stress_presence_dummy	5,614	0.607	0.488	0	1
stress_job_dummy	5,634	0.360	0.480	0	1
stress_relation_dummy	5,634	0.198	0.399	0	1
stress_position_dummy	5,634	0.135	0.341	0	1
stress_other_dummy	5,634	0.077	0.266	0	1
consult_colleague_dummy	5,407	0.515	0.500	0	1
consult_ind_phycian_dummy	5,407	0.013	0.113	0	1
consult_private_phycian_dummy	5,407	0.013	0.114	0	1
consult_counselor_dummy	5,407	0.007	0.085	0	1
smoking_dummy	5,618	0.307	0.461	0	1

Summary Stats (BSWS)

Statistic	N	Mean	St. Dev.	Min	Max
is_male	988,395	0.707	0.455	0	1
age	988,395	42.259	12.085	15	99
is_age_over_40	988,395	0.579	0.494	0	1
service_year	988,395	11.745	10.101	0	80
num_of_regular_2014	988,395	43.050	16.707	21	80
not_work_dummy	982,750	0.002	0.048	0	1
monthly_work_days	982,750	22.062	2.502	0	27
monthly_scheduled_work_hours	988,395	168.096	20.994	0	406
monthly_over_work_hours	977,879	10.195	15.974	0	77
monthly_total_work_hours	977,293	178.068	27.071	0	258
monthly_total_income	986,164	345,903.800	146,293.100	0.000	1,097,508.000
monthly_income	988,395	294,033.400	118,762.100	0	5,000,000
monthly_over_income	982,086	18,833.720	29,793.510	0	164,700
monthly_scheduled_income	988,395	274,003.500	116,111.700	0	5,000,000
monthly_bonus	985,769	639,045.500	623,514.800	0	4,140,000

Heterogeneity by Age: Effect on Visit to a Physician

Dependent Variables:	consult_ind_phycian_dummy	consult_private_phycian_dummy
Model:	(1)	(2)
Variables		
Treat	-0.003	0.006
	(0.010)	(0.014)
Under 40	-0.411	-0.242
	(9,450.6)	(8,344.3)
Treat × Post	0.008	-0.019*
	(0.011)	(0.011)
Treat × Under 40	0.004	-0.008
	(0.009)	(0.013)
Post × Under 40	0.010	0.008
	(0.007)	(0.008)
Treat × Post × Under 40	-0.019	0.014
	(0.014)	(0.014)
Fixed-effects		
Year FE	Yes	Yes
Prefecture FE	Yes	Yes
Industry FE	Yes	Yes
Occupation FE	Yes	Yes
Observations	5,351	5,351
R^2	0.062	0.041

Heterogeneity by Gender: Effect on Labor Market Outcomes

Dependent Variables:	not_work_dummy	monthly_work_days	log(monthly_total_income)	monthly_over_income	monthly_over_work_hours	monthly_total_work_hours	log(hourly_income)
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Variables							
Treat	0.001**	-0.076**	-0.008	-251.2	-0.250	-0.622	-0.004
	(0.0006)	(0.036)	(0.005)	(352.0)	(0.208)	(0.387)	(0.004)
Female	11.1	-65.8	6.87	1,991,022.7	0.304	0.482	-0.228***
	(11.4)	(838.4)	(12.3)	(1,256,839.7)	(21.3)	(169.1)	(0.002)
Treat × Post	-0.0001	0.041	-0.004	166.8	0.099	0.173	-0.005
	(0.0003)	(0.035)	(0.003)	(421.6)	(0.233)	(0.376)	(0.003)
Treat × Female	-0.002***	0.059***	0.025***	256.5	0.242	0.548**	0.021***
	(0.0005)	(0.019)	(0.003)	(308.3)	(0.162)	(0.226)	(0.003)
Post × Female	0.0006	-0.027	0.013***	-899.0***	-0.462***	-0.584***	0.016***
	(0.0004)	(0.017)	(0.002)	(203.1)	(0.112)	(0.179)	(0.002)
Treat × Post × Female	-0.0007	0.025	-0.0008	-41.6	0.095	0.423	-0.004
	(0.0006)	(0.026)	(0.004)	(384.4)	(0.206)	(0.303)	(0.003)
Fixed-effects							
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	962,236	962,236	965,181	961,559	957,376	956,746	963,353
R^2	0.059	0.456	0.676	0.430	0.445	0.456	0.737

Heterogeneity by Industry: Effect on Labor Market Outcomes

Dependent Variables: Model:	not_work_dummy (1)	monthly_work_days (2)	log(monthly_total_income) (3)	monthly_over_income (4)	monthly_over_work_hours (5)	monthly_total_work_hours (6)	log(hourly_income) (7)
Variables							
is_treat × is_post	-0.0004	-0.024	-0.004	710.6	-4.32	-0.475	0.006
	(0.0006)	(0.095)	(0.004)	(2,446.1)	(61.2)	(1.13)	(0.010)
Treat × Post × Agriculture	-0.007	-0.030	0.040				
	(653.4)	(57,331.9)	(2,704.1)				
Treat × Post × Mining	0.0006	0.883	0.024	9,871.4	10.3	11.3**	-0.047*
	(0.002)	(0.543)	(0.042)	(8,276.7)	(61.2)	(5.45)	(0.025)
Treat × Post × Construction	-8.03×10^{-6}	-0.151	-0.012	-2,170.4	3.38	0.307	-0.021
	(0.0010)	(0.250)	(0.018)	(3,127.9)	(61.2)	(2.28)	(0.021)
Treat × Post × Manufacturing	0.0001	0.128	0.006	445.9	4.97	1.51	-0.010
	(0.0009)	(0.117)	(0.007)	(2,625.8)	(61.2)	(1.35)	(0.011)
Treat × Post × Electoricity and Gas	0.001	-0.188	0.002	973.9	4.32	0.321	-0.008
	(0.002)	(0.210)	(0.015)	(3,087.9)	(61.2)	(2.06)	(0.019)
Treat × Post × IT	0.002	0.012	-0.009	429.2	4.56	0.838	-0.025
	(0.001)	(0.161)	(0.012)	(2,729.5)	(61.2)	(1.75)	(0.015)
Treat × Post × Transport	-0.0006	-0.311*	-0.029*	-2,529.3	4.05	-1.00	-0.021
	(0.002)	(0.177)	(0.016)	(3,058.0)	(61.3)	(2.17)	(0.019)
Treat × Post × Finance	-0.001	-0.029	0.013	-938.5	4.34	0.168	0.002
	(0.002)	(0.139)	(0.012)	(2,637.1)	(61.2)	(1.49)	(0.014)
Treat × Post × estate	-1.64×10^{-5}	0.137	0.002	-1,560.5	3.42	2.08	-0.019
	(0.001)	(0.178)	(0.012)	(3,153.7)	(61.2)	(2.25)	(0.016)
Treat × Post × Academic research	-0.0009	0.084	-0.009	-3,380.1	3.25	-0.479	-0.014
	(0.001)	(0.163)	(0.013)	(3,338.1)	(61.2)	(1.96)	(0.020)
Treat × Post × Accommodation	2.74×10^{-5}	-0.023	-0.015	93.4	5.39	0.857	-0.022
	(0.003)	(0.178)	(0.016)	(3,211.2)	(61.1)	(2.00)	(0.017)
Treat × Post × Personal services	0.002	0.236	-0.013	103.0	5.30	0.591	-0.022
	(0.002)	(0.248)	(0.015)	(3,540.1)	(61.3)	(2.33)	(0.016)
Treat × Post × Education	-8.59×10^{-5}	0.266*	-0.019*	-2,913.1	2.85	0.231	-0.029*
	(0.001)	(0.160)	(0.010)	(2,669.0)	(61.2)	(1.85)	(0.016)
Treat × Post × Health	0.001	0.024	-0.005	-3,077.6	4.22	-1.67	-0.011
	(0.003)	(0.214)	(0.019)	(3,544.0)	(61.2)	(2.33)	(0.022)
Fixed-effects							
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	962,236	962,236	965,181	961,559	957,376	956,746	963,353
R^2	0.059	0.457	0.676	0.430	0.445	0.456	0.737

Heterogeneity by Industry: Effect on Labor Market Outcomes

Dependent Variables:	on_leave_share	turnover_share
Model:	(1)	(2)
Variables		
is_treat	-0.002	-0.0006
	(0.001)	(0.0009)
Treat × Post × Agriculture	0.0009	-0.001*
	(0.002)	(0.0008)
Treat × Post × Mining	0.006***	0.0001
	(0.002)	(0.0009)
Treat × Post × Construction	-0.0004	-0.0006
	(0.002)	(0.003)
Treat × Post × Manufacturing	0.0002	0.0007
	(0.002)	(0.001)
Treat × Post × Electoricity and Gas	-0.001	-0.0007
	(0.003)	(0.001)
Treat × Post × IT	0.006**	0.001
	(0.003)	(0.003)
Treat × Post × Transport	-0.002	0.0003
	(0.002)	(0.001)
Treat × Post × Finance	-0.008***	0.0004
	(0.002)	(0.002)
Treat × Post × Real estate	-0.004*	0.002
	(0.002)	(0.002)
Treat × Post × Academic research	0.005*	0.002**
	(0.003)	(0.0010)
Treat × Post × Accommodation	-0.002	-0.002**
	(0.002)	(0.0008)
Treat × Post × Personal services	-0.006***	-0.002
	(0.002)	(0.002)
Treat × Post × Education	0.002	0.005***
	(0.003)	(0.0010)
Treat × Post × Health	0.001	0.002
	(0.001)	(0.001)
Fixed-effects		
Year FE	Yes	Yes
Industry FE	Yes	Yes
Prefecture FE	Yes	Yes
Observations	5,222	5,136
R^2	0.069	0.049

Heterogeneity by Industry: Effect on Visit to Physicians

Dependent Variables:	consult_ind_phycian_dummy	consult_private_phycian_dummy
Model:	(1)	(2)
Variables		
is_treat	0.296	0.147
	(4,836.3)	(4,775.3)
Treat × Post × Aguricalture	0.0009	0.056
	(0.032)	(0.034)
Treat × Post × Construction	-0.072*	0.057**
	(0.040)	(0.024)
Treat × Post × Manufacturing	-0.002	0.052**
	(0.018)	(0.026)
Treat × Post × IT	-0.025	0.107**
	(0.026)	(0.046)
Treat × Post × Transport	-0.042	0.021
	(0.035)	(0.032)
Treat × Post × Finance	-0.066**	0.113***
	(0.031)	(0.030)
Treat × Post × Real estate	0.059	0.131***
	(0.047)	(0.037)
Treat × Post × Academic research	-0.075**	0.056**
	(0.038)	(0.027)
Treat × Post × Accommodation	-0.171***	-0.117**
	(0.044)	(0.049)
Treat × Post × Personal services	0.043	0.115**
	(0.082)	(0.055)
Treat × Post × Education	0.028	0.111***
	(0.022)	(0.038)
Treat × Post × Health	0.002	0.072***
	(0.015)	(0.026)
Fixed-effects		
Year FE	Yes	Yes
Prefecture FE	Yes	Yes
Industry FE	Yes	Yes
Occupation FE	Yes	Yes
Observations	5,351	5,351
R^2	0.074	0.049