The Effect of Limiting Antidepressant Prescriptions in Non-Psychiatric Clinics on Suicide Thoughts and Attempts in South Korea

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Abstract

- South Korea has the highest suicide rate in the Organization for Economic Co-operation and Development (OECD).
- In 2002, the Ministry of Health and Welfare of South Korea implemented a drug policy that limits antidepressant prescriptions to 60 days in non-psychiatric clinics in order to prevent drug abuse.
- This study's objective is to assess whether the drug policy in Korea led to increases in suicidal thoughts and attempts among patients with chronic disease such as neurological disorders, cardiac disease, cancer, or diabetes as a result of untreated depression.
- The study found that following the regulatory action, restriction of selective serotonin reuptake inhibitors (SSRI) in non-psychiatric clinics increased suicide thoughts and attempts among patients having particular medical disorders in South Korea.

Introduction

- This policy was based on psychiatrists' argument that patients with depression should receive professional assessment and treatment by psychiatrists.
- Non-psychiatric physicians such as neurologists assert that restriction of SSRI prescribing in non-psychiatric clinics is the main culprit for the rising suicide rate in Korea.
- Associations between medical illness and psychiatric distress are observed to be strong in many studies. (Cummings 1992; Sultzer et al 1993; Greenwald 1995)
- If a neurological disorder causes depression, a neurologist can prescribe selective serotonin reuptake inhibitor (SSRI) antidepressants, but only for 60 days in non-psychiatric clinics and after 60 days, patients must go to a psychiatric clinic if they still need antidepressants.

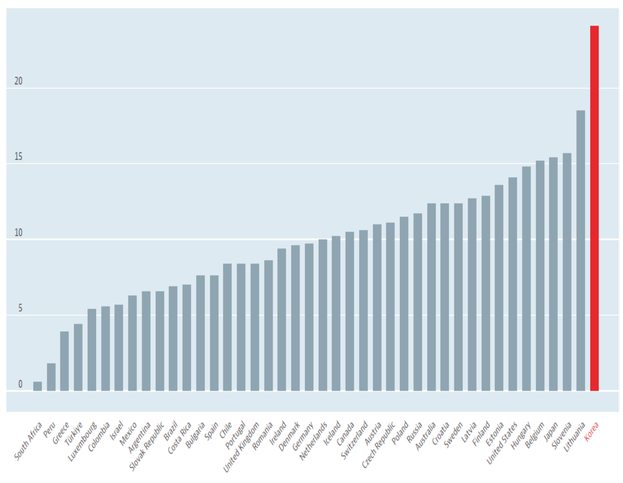

Figure 1. Suicide Rates by Country

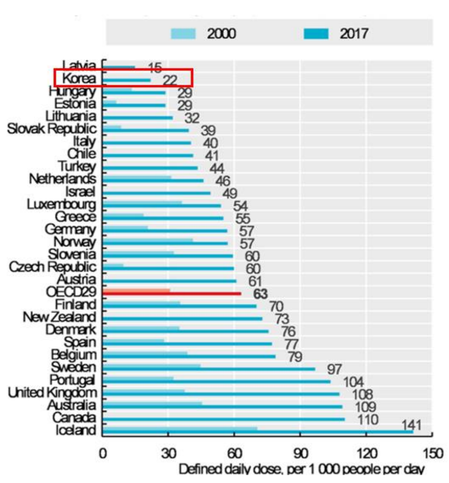

Figure 2. Antidepressant Consumption by Country

Data and Methods

- **Data:** Korea National Health & Nutrition Examination Survey (1998-2012), OECD Suicide Rate (1985-2016)
- **Synthetic Control Method**

Since synthetic control is a weighted average of control group, this method can create similar synthetic control to treatment group of preintervention and show the contribution of this synthetic control to the counterfactual (Abadie et al., 2010).

- **Difference in Differences estimation with Probit regression models**

$$Y_{igt} = \alpha + \beta_1 C_g + \beta_2 P_t + \beta_3 C_g * P_t + X'_{igt}\delta + \gamma_p + \mu_t + \varepsilon_{igt}$$

, where dependent variable Y_{igt} is suicide thoughts or attempts in individual i in group g for year t.
C_g is group dummy variable indicating whether group is the treatment group of affected units.
P_t is period dummy variable indicating whether the period is post-policy period.
X_{igt} is individual-specific covariate such as age, sex, income, education, occupation, marital status, and the number of households.
γ_p is a region fixed effect. μ_t is a year fixed effect.

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Results

- Figure 3 shows the suicide rate for South Korea and its synthetic control during 1985-2016 period. The study found that suicide rate increases exceptionally in South Korea compared to synthetic counterpart countries after the policy was implemented.
- Using a difference in differences design, the study found that after the policy was implemented, suicide thought among the affected group increased by 0.0216 compared to the unaffected group before the policy was implemented.
- Suicide attempts among the affected group increased by 0.0226.
- Within the suicide attempt group, diagnosed cases of depression among the policy affected group increased by 0.0389 after the policy was implemented.

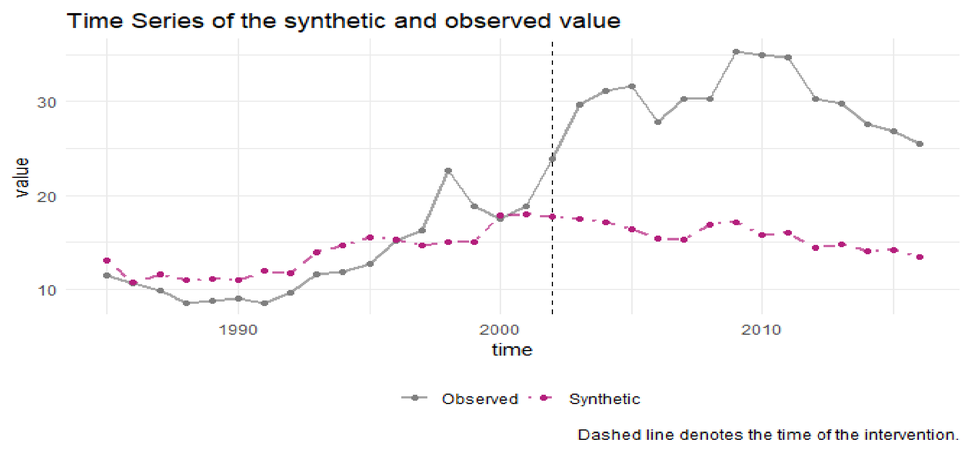

Figure 3. Suicide Rate in South Korea vs. Synthetic South Korea

	Suicide Thought	Suicide Attempt	Depression among Suicide Thought	Depression among Suicide Attempt
Affected	0.0375***	0.00360	0.0108***	0.0239
	(0.00604)	(0.00798)	(0.00365)	(0.0194)
Post	-0.0832***	0.0188	0.0176***	0.0911***
	(0.00866)	(0.0126)	(0.00435)	(0.0241)
Affected*Post	0.0216***	0.0226**	0.00628	0.0389*
	(0.00745)	(0.00987)	(0.00392)	(0.0212)
Sex	0.0665***	-0.0206***	0.0130***	0.0340***
	(0.00422)	(0.00508)	(0.00135)	(0.00833)
Age	-0.000288	-0.00159***	-6.23e-05	-0.000649
	(0.000215)	(0.000268)	(6.65e-05)	(0.000394)
Household Income	-8.19e-06*	-3.88e-05**	-2.65e-07	2.16e-06
	(4.75e-06)	(1.66e-05)	(1.51e-06)	(4.57e-06)
Number of Households	-0.00244	0.00105	-0.00168***	-0.00379
	(0.00155)	(0.00209)	(0.000435)	(0.00257)
Mariatal Status	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes
Occupation	Yes	Yes	Yes	Yes
Region dummy	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes
Observations	54,672	9,951	54,671	9,951
Pseudo R2	0.061	0.0589	0.1906	0.2184

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

Table 1. Effect of Policy on Suicidal Ideation

Policy Discussion

- FDA issued a black box warning on antidepressants regarding the potential risk of suicidality in young adults.
- However, a growing number of reports has raised doubts about the FDA warning, particularly considering reduced prescription rates for antidepressant drugs associated with an increase in suicidal incidents.
- This study will help provide evidence regarding whether restrictive antidepressant prescribing can lead to an increase in suicidal ideation.

Conclusions

- The study evaluates whether the policy instituted in 2002, which restricted antidepressant prescriptions in non-psychiatric clinics, increases suicide thoughts and attempts in Korea.
- The study evaluation is extremely important to South Korea, which has the highest suicide rate in the OECD.
- Therefore, this study's results will provide empirical evidence to help resolve the debate over whether the policy is associated with the suicide rate in South Korea.

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