Research statement

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Summary I am a health economist specializing in preventive health care. As health care industry grow rapidly across many developed countries, preventive care is increasingly recognized as a cost-effective way to improve public health. However, its take-up remains low, with large disparities across demographic and socioeconomic groups. Understanding the determinants of preventive care is essential for designing policies that increase participation and target those most likely to benefit.

My research investigates the role of price, peers, medical practices, environmental factors, misinformation, and education in shaping preventive care use and its subsequent effects on health and economic outcomes. I use causal methods with rich data sources, including national health insurance and Medicare claims, nationally representative surveys, and self-collected field experiments. My agenda focuses on two pillars of preventive health: health screening and vaccination. Below, I describe projects in each area.

1. Health screening

Health screenings are essential for preventing diseases, including heart disease and cancer, two leading causes of death in developed countries. Despite public support for screening programs, participation rates remain low, and critics often argue that screenings waste medical resources by testing healthy individuals. At the same time, academic studies increasingly highlight potential harms of screening, such as false positives and overdiagnosis. My research investigates the determinants of screening participation, selection into screening, and the causal effects and unintended consequences.

Price of preventive care

In [1], I study the role of subsidies in screening participation by evaluating a universal screening program in South Korea that subsidizes 90-100% of screening costs. Using nationally representative surveys and national health insurance claim, I show that subsidies significantly increase take-up of both subsidized and unsubsidized screenings, generating larger health gains than intended. Importantly, those who respond to subsidies and participate are disproportionately from lower socioeconomic backgrounds and in poorer health than those who always participate regardless of subsidies. This finding indicates that subsidies can effectively target high-risk populations more likely to benefit from screenings. I find that greater participation leads to substantial increases in cancer diagnoses, particularly early-stage cancers and precancerous conditions. It also increases the use of other preventive care, such as prescriptions for hypertension, diabetes, high cholesterol, and osteoporosis. These findings demonstrate that universal screening programs that provide subsidized screenings can effectively reach those that need them most and meaningfully improve early detection and preventive care use.

Peer effect

In [2], I examine the spousal spillover in health screening participation by exploiting quasi-random subsidy eligibility in South Korea's National Health Screening Program. Using nationally representative surveys and national health insurance claim, I find that a spouse's subsidy eligibility substantially increases one's own participation. The effect is large: the spillover magnitude is about 37% of the direct effect of having own subsidies. Evidence on the timing of visits points to coordination as a key mechanism, with many couples obtaining screenings on the same day. The direction of spillover is pronounced when wife receives screening, but the opposite direction is muted. These findings suggest that public screening programs may yield greater public health gains through spillover channels than initially intended. Furthermore, policies that makes it easier for spouses to get screened together could further enhance participation.

Medical practice

In [3], I study unintended consequences of health screening: false positive and false negative test results. Current medical practice prioritizes minimizing false negatives but tolerates high rates of false positives. The costs of each error have

never been rigorously estimated. Exploiting South Korea's national health insurance claims data, which include both initial and final diagnoses from six types of cancer screenings, I estimate the effects of each error on future health outcomes, health care expenditures, and screening take-up. Preliminary evidence shows strikingly high false positive rates: among women receiving mammography at age 40, conditional on positive initial result, more than 95% receive a negative final diagnosis. Once completed, this project can provide evidence on optimal testing thresholds that balance the trade-offs between the two sources of error.

Place-based factors

Screening behavior is shaped not only by individual characteristics such as income, education, and preferences, but also by place-based factors including accessibility, medical practice style, and peer norms. To separate environmental from individual factors, in [4], I study how moving between regions with different screening intensities affects screening participation, cancer detection, and long-term outcomes. Preliminary evidence using U.S. Medicare data shows that movers quickly adopt the destination's screening patterns. I plan to estimate the impact on cancer detection and cancer-specific mortality. Once completed, this study can shed light on the role of place-based drivers in shaping both screening behavior and long-term health outcomes.

2. Vaccination

Vaccination is one of the most powerful tools in public health, preventing deadly infectious diseases such as measles and polio. The COVID-19 pandemic underscored not only the importance of rapid vaccine development but also the challenges posed by demand-side barriers, particularly misinformation and vaccine hesitancy. My research examines how misinformation and education shape vaccination decisions, with a focus on developing country settings.

Belief in misinformation

In [5], I study the behavioral consequences of belief in misinformation. I conducted two rounds of field surveys and lab-in-the-field experiments among tricycle drivers in the Philippines, before and after the pandemic. I find that drivers with stronger risk preferences are more likely to believe misinformation, and these beliefs are linked to lower COVID-19 testing, vaccination, and adoption of preventive behaviors. Interestingly, despite lower engagement in prevention, misinformed drivers showed slower recovery to the workplace after government restrictions were lifted, reflecting reluctance to comply with government policies, rather than caution about infection. These findings highlight the importance of understanding drivers of belief in misinformation to design effective public health programs.

Education

While education is widely used as a policy tool for improving health, its returns depend on cultural and gender norms. In [6], I examine the impact of education on smoking and infant vaccination by evaluating Indonesia's primary school construction program. Despite increase in primary school completion for both boys and girls, the program reduced women's high schooling, without affecting men, due to household budget constraints and son preference. It led to decline in women's smoking, but men's smoking, associated with social status and masculinity, did not change. Finally, the program increased infant vaccination for high-parity sons, but not for daughters, due to stronger son preference for later-born children. These results demonstrate that education policies can yield unequal health returns when social norms shape how education translates into behaviors.

3. Works in planning stage

I am in the process of gaining access to the Person Level Integrated Data Asset (PLIDA) in Australia that links various government datasets on health, education, government payments, income, employment, and census information with a coworker Huan Wang from The Royal Melbourne Institute of Technology. Once approved, we plan to examine No Jab No

Play policy, which required vaccination for childcare enrollment, and the replacement of Pap smear cervical screening with human papillomavirus (HPV) test. Their staggered rollouts provide opportunities for causal evaluation of policy effects.

4. Future research direction

In the immediate future, I plan to expand research on the demand side of preventive care and health behaviors, in both developed and developing countries. In the long term, I intend to expand my expertise to the supply side of preventive care. This includes studying provider incentives in diagnosis intensity and treatment choices, allocation of medical labor across fields at the medical school in response to expected earnings, and geographic disparities in access, such as shortages of primary care physicians in rural areas.

Bibliography

[1] Health Screening and Selection: Evidence from Biennial Subsidies in South Korea

[2] Spousal Spillover in Health Screening: Evidence from National Health Screening Program in South Korea (with Hyuncheol Bryant Kim and Jaehyun Jung)

[3] The Cost of False Alarm: Evidence from Cancer Screening in South Korea

[4] What Drives Cancer Screening Use? Evidence from Migration (with Julian Reif and Tatyana Deryugina)

[5] Misinformation Belief, Health Behavior, and Labor Supply during the COVID-19 Pandemic: Evidence from Tricycle Drivers in Philippines (with Hyuncheol Bryant Kim, Syngjoo Choi, Yasuyuki Sawada, and Takashi Yamano) (Revise and resubmit at *Journal of Behavioral and Experimental Economics*)

[6] When Gender Norms Shape the Returns to Education: Evidence from Health Behaviors in Indonesia (with Jaysa Rafi)