

# Doctor's Orders vs Divine Wisdom

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# The Importance of Religious Leaders

- ▶ A recent literature points to the importance of religious leaders for belief formation.
- ▶ This has implications for policymakers seeking to engage with local grassroots leaders or conduct successful information campaigns.
- ▶ But we do not know how influential religious leaders are relative to other local leaders.
- ▶ On the one hand, why would rational agents trust religious leaders on domains outside their expertise (e.g. health)?
- ▶ On the other hand, religious leaders may command greater overall trust (due to source of authority, status in communities etc.).

# Unintended Consequences

- ▶ Nor do we understand the unintended consequences of utilizing religious leaders for information dissemination.
- ▶ “The purpose of separation of church and state is to keep forever from these shores the ceaseless strife that has soaked the soil of Europe in blood for centuries.” - James Madison
- ▶ If religious and state institutions are substitutes, could weaken state power.
- ▶ In the context of health information and correlated beliefs, religious messaging may move people away from secular to spiritual medicine.

# Research Questions

- ▶ **This project: directly compare effectiveness of local religious with secular leaders in the context of handwashing and explore micro-foundations for separation of Church and State.**
- ▶ How effective are local religious leaders relative to local secular leaders at disseminating information on handwashing?
- ▶ Does utilization of religious leaders have unintended consequences for: 1) trust in state vs religious institutions, 2) prosociality towards religious out-groups, 3) beliefs about secular vs spiritual medicine.
- ▶ What are the mechanisms driving the influence of religious leaders and what is the role of social norms in the context of religious information?

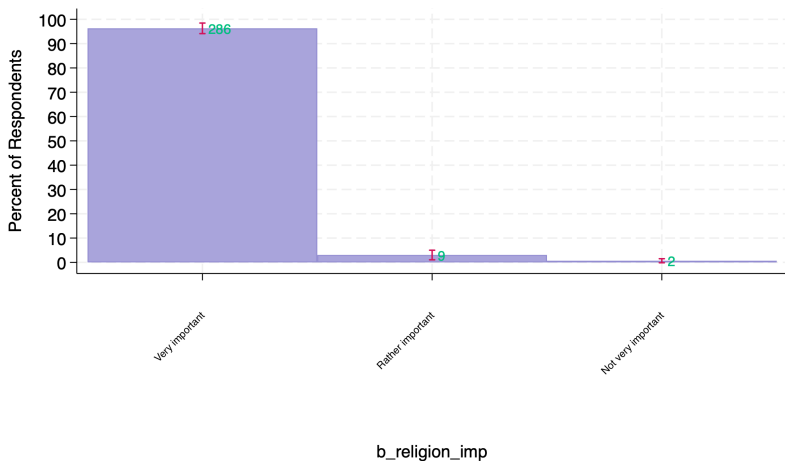
# This Project

- ▶ Randomize couples in Punjab, Pakistan, to community meetings with either their health worker or local religious leader (the imam) on the importance of handwashing.
- ▶ Information in community meetings is framed in either secular or religious language.
- ▶ Half the couples attend meetings with their neighbors while the other half come alone.
- ▶ Evaluate impacts on hand hygiene to study relative efficacy; look at behavior in lab-in-the-field games to explore unintended consequences.

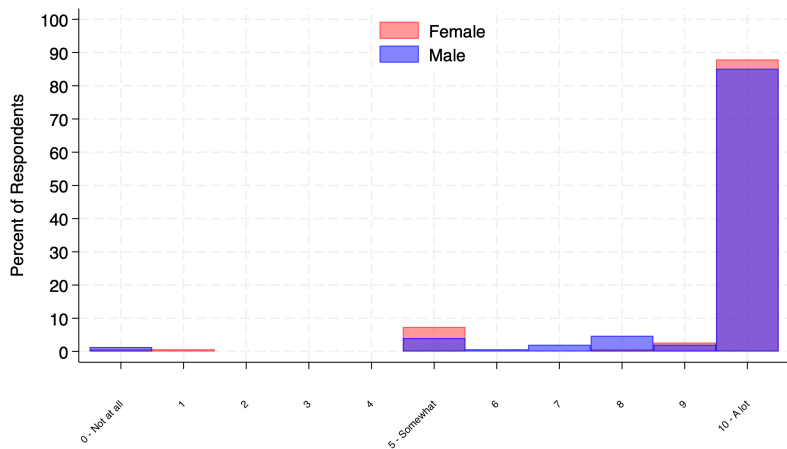
## Context: Punjab, Pakistan

- ▶ 97% of the population is Muslim. Communities usually served by multiple imams with both religious and non-religious duties. Ordinarily interact with men.
- ▶ Imams belong to range of sects and are usually hired by committees that run the mosque. Donations are usually large source of income.
- ▶ Each community typically has one lady health worker (LHW) nominated by the community and hired by the government to provide basic health services and information. Usually interact with women.
- ▶ Most common spiritual healers are called " pirs". Usually descendants of Sufi Muslim saints, associated with shrines, and believed to perform minor miracles. Most commonly associated with Barelvi Islam.

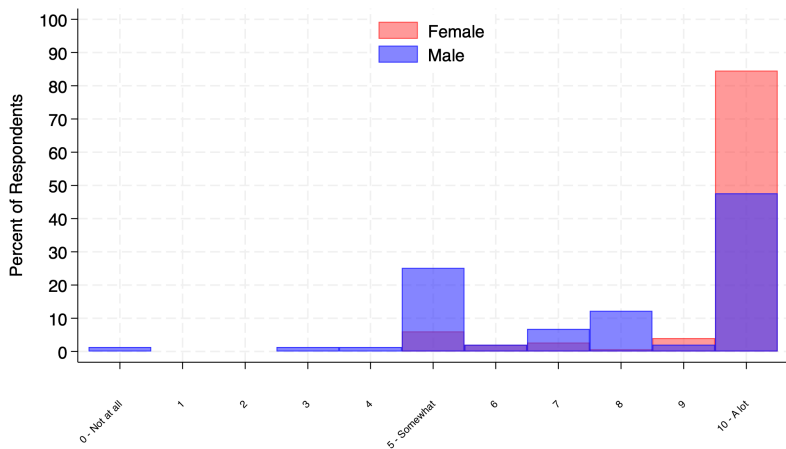
# How important would you say is religion in your life?



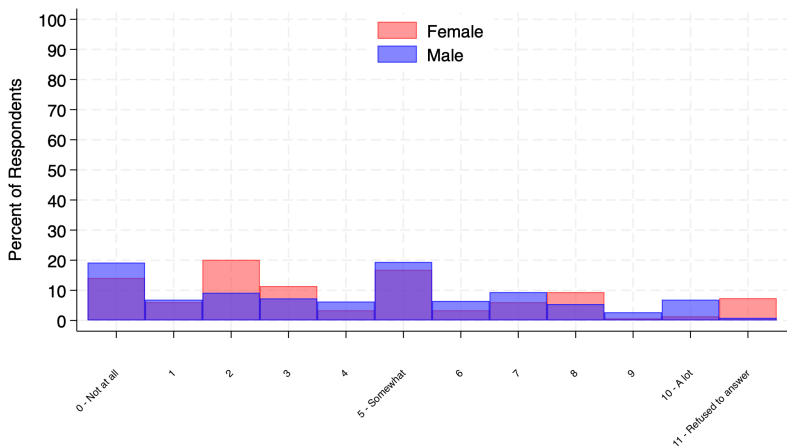
# How much do you trust your imam?



# How much do you trust your health worker?



# How much do you trust state institutions?



## Field Experiment: Treatments

- ▶ Drafted scripts on the importance of handwashing framed in either secular or religious language.
- ▶ Secular script emphasizes the importance of handwashing for personal health and community health. Meeting is held in health worker's office.
- ▶ Religious script emphasizes the importance of handwashing as a religious obligation in the context of the Quran and the Prophet Muhammad's teachings. Meeting is held in mosque.
- ▶ Each meeting ends with a demonstration of the proper way to wash hands.
- ▶ Meeting lasts approx. 20 minutes. Repeated 1 week later.

## Secular Script: Excerpt

- ▶ “Handwashing is one of the most effective ways to prevent the spread of contagious diseases. Every year, 1.4 million people around the world die from treatable diseases due to not washing hands. Throughout the day, we shake hands with many people, picking up germs and bacteria that can cause illnesses. These germs are not visible to the naked eye but can be transmitted in many ways. Handwashing is essential to help prevent this.”

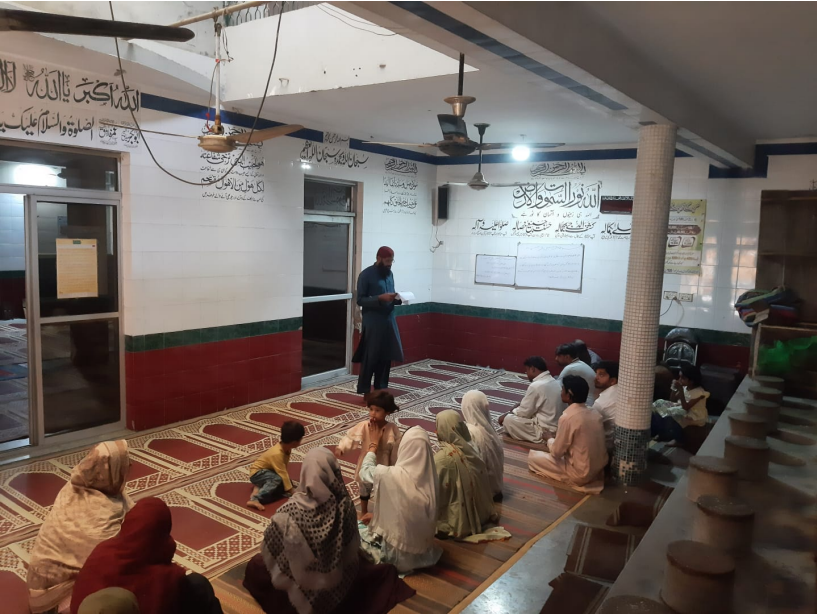
# Example Meeting



## Religious Script: Excerpt

- ▶ “Islam teaches us to take care of our health as it is a gift from Allah. Proper handwashing can prevent the spread of respiratory and diarrheal infections. By protecting ourselves from these illnesses, we fulfill our religious duty of taking care of our bodies and maintaining our ability to perform daily prayers and other religious obligations without interruption.”

# Example Meeting



# Field Experiment: Design

Table: Randomization

	Neighbors (Religious)	Neighbors (Secular)	No Neighbors (Religious)	No Neighbors (Secular)	Total
Control					600
Health Worker	150	150	150	150	600
Imam	150	150	150	150	600

- ▶ Randomization of main treatments at the couple level.  
Stratified at community level.
- ▶ Exception: religious/secular randomization at community level.

## Field Experiment: Implementation

- ▶ Week 1: Recruit couples that fulfill the following criteria: 1) aged 18-60, 2) have at least one child aged 5-18, 3) can identify neighbor couple that also fulfills criteria and consents.
- ▶ Week 1: Train local imam and health worker. Conduct baseline surveys.
- ▶ Week 2: Randomization. Conduct first set of community meetings.
- ▶ Week 3: Conduct second set of community meetings. Give liquid hand soap.
- ▶ Week 6: Conduct endline surveys.



# Field Experiment: Outcomes (Hand Hygiene)

- ▶ Novel ATP test.



# Field Experiment: Outcomes (Handwashing Behavior)

- ▶ Volume of hand soap depleted.



# Field Experiment: Outcomes (Games)

- ▶ Trust in state vs religious conflict resolution institutions:
  - ▶ Decision to donate to one of two funds:
    - ▶ Fund to support individuals seeking to resolve disputes by going to courts.
    - ▶ Fund to support individuals seeking to resolve disputes by going to council of Islamic leaders.
- ▶ Prosociality towards non-Muslims:
  - ▶ Dictator game: self vs poor Christian neighbors.
- ▶ Beliefs about secular vs spiritual medicine:
  - ▶ Game 1: Decision to invest or not in sick community member wanting to go to local health clinic.
  - ▶ Game 2: Decision to invest or not in sick community member wanting to go to local spiritual healer.
  - ▶ Payout depends on perceptions of others' beliefs about effectiveness of local health clinic or spiritual healer.

# Results

# Results: Hand Hygiene and Handwashing

Table: Hygiene Meter Readings and Soap Used

Dependent Variable	Hygiene Meter			Soap Used
	Pooled	Female	Male	Pooled
	(1)	(2)	(3)	(4)
HW	1.0729*** (0.1627)	1.3339*** (0.2068)	0.8321*** (0.2459)	0.1144 (0.2068)
Imam	1.1572*** (0.1556)	1.2971*** (0.2128)	1.0290*** (0.2302)	0.2231 (0.2474)
N	137	66	71	118
R-Squared	0.3983	0.5270	0.3303	0.0082
Control Mean	-0.0000	-0.0569	0.0682	0.0000

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Results: Self-Reported Handwashing

Table: Self-Reported Handwashing

Dependent Variable	Handwash Daily			Handwash Child Daily		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW	1.6064** (0.7274)	3.3472*** (1.0853)	0.0467 (0.7494)	0.9869* (0.5437)	1.3071* (0.7236)	0.5833 (0.7622)
Imam	2.9756*** (0.8894)	3.8514*** (1.0932)	2.1030* (1.0799)	1.7140*** (0.5268)	2.7582*** (0.7480)	0.4766 (0.6937)
N	297	149	148	297	149	148
R-Squared	0.2499	0.1962	0.1380	0.2099	0.2057	0.2247
Control Mean	8.8980	10.7347	7.0612	7.6735	8.4490	6.8980

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Results: Trust in State and Prosociality

Table: Money Allocation Games

Dependent Variable	Courts Fund			Poor Christian		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW	1.6102 (5.2267)	4.0660 (7.3196)	-0.9330 (8.1518)	-0.1758 (2.8697)	-0.0416 (2.6671)	-0.2910 (4.6406)
Imam	4.1464 (5.2012)	16.4571** (7.4572)	-8.4079 (8.1312)	0.3019 (2.6213)	-0.8062 (2.6097)	1.3737 (4.3143)
N	297	149	148	297	149	148
R-Squared	0.0022	0.0346	0.0092	0.0016	0.0104	0.0013
Control Mean	34.0816	27.3469	40.8163	94.0816	95.5102	92.6531

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Results: Trust in Secular vs Spiritual Medicine

Table: Investment Games

Dependent Variable	Clinic Investment			Pir Investment		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW	-5.3214* (2.9590)	-3.3355 (3.7166)	-7.1859* (3.9617)	-7.9692 (5.3930)	-6.1844 (7.1670)	-11.5081 (8.3404)
Imam	-5.8437** (2.7968)	-0.7202 (3.0671)	-11.2482** (4.6069)	-8.9135 (5.4620)	-4.2690 (7.0842)	-15.9016* (8.3780)
N	297	149	148	297	149	148
R-Squared	0.0170	0.0096	0.0429	0.1105	0.2073	0.0611
Control Mean	94.6939	95.5102	93.8776	63.0612	61.4286	64.6939

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Results: Religiosity

Table: Self-Reported Frequency of Prayer

Dependent Variable	Pray		Mosque Pray	
	Pooled	Female	Male	
	(1)	(2)	(4)	
HW	0.0584 (0.2083)	0.0043 (0.2775)	0.0834 (0.2811)	0.2624 (1.9226)
Imam	0.2460 (0.2052)	0.2002 (0.2995)	0.2728 (0.2705)	1.5179 (1.9226)
N	297	149	148	148
R-Squared	0.1047	0.1048	0.1294	0.1786
Control Mean	2.8776	3.0408	2.7143	13.7959

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Results: Who do you trust more for health advice: religious leaders or medical experts?

Table: Trust for Health Advice

Dependent Variable	Medical Experts > Religious Leaders		
	Pooled	Female	Male
	(1)	(2)	(3)
HW	0.0376 (0.0395)	0.0121 (0.0105)	0.0734 (0.0833)
Imam	-0.0316 (0.0469)	-0.0127 (0.0110)	-0.0437 (0.0934)
N	290	146	144
R-Squared	0.0895	0.2095	0.0548
Control Mean	0.8557	1.0000	0.7083

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Knowledge

Table: Knowledge: Distance to Correct Answer

Dependent Variable	Global Deaths (millions)			Recommended Time (seconds)		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW	-0.3027** (0.1338)	-0.1331 (0.1305)	-0.4657** (0.2194)	-15.7848*** (3.1322)	-5.4954*** (0.9580)	-26.1659*** (6.2302)
Imam	-0.3500*** (0.1305)	-0.1297 (0.1407)	-0.5618** (0.2166)	-14.3722*** (3.0933)	-4.9132*** (1.1328)	-23.8295*** (6.0049)
N	297	149	148	297	149	148
R-Squared	0.0324	0.0110	0.0570	0.2228	0.2269	0.2495
Control Mean	1.0612	0.8878	1.2347	17.7041	6.1633	29.2449

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Knowledge

Table: Knowledge: Raw Responses

Dependent Variable	Global Deaths (millions)			Recommended Time (seconds)		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW	-0.0455 (0.1796)	0.5017** (0.2024)	-0.6033** (0.2904)	-8.6032*** (3.2144)	5.4596*** (0.9491)	-22.3607*** (6.4279)
Imam	-0.0092 (0.1780)	0.6651*** (0.2069)	-0.7080** (0.2837)	-7.1946** (3.3439)	6.3208*** (1.1828)	-20.0715*** (6.4970)
N	297	149	148	297	149	148
R-Squared	0.0003	0.0789	0.0510	0.1810	0.2710	0.2077
Control Mean	1.5510	1.0878	2.0143	29.3980	13.8367	44.9592

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Religious v Secular

Table: Hygiene Meter Readings and Soap Used

Dependent Variable	Hygiene Meter			Soap Used
	Pooled	Female	Male	Pooled
	(1)	(2)	(3)	(4)
HW Secular	1.1183*** (0.1657)	1.3594*** (0.2200)	0.9315*** (0.2552)	0.2272 (0.2314)
HW Religious	0.9974*** (0.1971)	1.2928*** (0.2108)	0.6691** (0.3029)	-0.0102 (0.2582)
Imam Secular	1.1774*** (0.1608)	1.2330*** (0.2155)	1.0918*** (0.2400)	0.2234 (0.3906)
Imam Religious	1.1438*** (0.1621)	1.3348*** (0.2273)	0.9761*** (0.2426)	0.2227 (0.2295)
N	137	66	71	118
R-Squared	0.4002	0.5284	0.3420	0.0130
Control Mean	-0.0000	-0.0569	0.0682	0.0000

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Religious v Secular

Table: Money Allocation Games

Dependent Variable	Courts Fund			Poor Christian		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW Secular	-3.5952 (5.6783)	-0.3266 (7.7466)	-6.9175 (8.7885)	-1.1230 (3.7130)	1.1451 (2.9153)	-3.3800 (5.9391)
HW Religious	10.1238 (7.9119)	11.0899 (11.3525)	9.0083 (11.7194)	1.3771 (2.8597)	-1.9061 (4.1058)	4.6646 (4.2768)
Imam Secular	-2.7672 (7.1721)	6.7612 (11.1725)	-12.5340 (10.3266)	0.8316 (3.3815)	2.8422 (2.2583)	-1.2741 (6.5316)
Imam Religious	8.5382 (6.0856)	22.3726*** (8.1239)	-5.5642 (9.4464)	-0.0200 (2.9277)	-2.9432 (3.3401)	2.9748 (4.2398)
N	297	149	148	297	149	148
R-Squared	0.0187	0.0552	0.0243	0.0034	0.0302	0.0155
Control Mean	34.0816	27.3469	40.8163	94.0816	95.5102	92.6531

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Religious v Secular

Table: Investment Games

Dependent Variable	Clinic Investment			Pir Investment		
	Pooled	Female	Male	Pooled	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)
HW Secular	-5.0456 (3.4947)	-2.2645 (3.8233)	-7.6247 (4.8840)	-2.8204 (6.0679)	-1.3511 (8.0049)	-6.0488 (9.3643)
HW Religious	-5.7703 (4.5506)	-5.0887 (6.2830)	-6.4925 (5.4438)	-16.4023** (6.8025)	-14.2005 (9.4903)	-20.2032* (11.3885)
Imam Secular	-2.8951 (3.0974)	-1.6691 (4.1530)	-4.4981 (4.4550)	-4.7965 (7.0053)	-9.3959 (9.2138)	-3.3644 (11.0703)
Imam Religious	-7.6796** (3.6746)	-0.1687 (3.2805)	-15.5196** (6.4345)	-11.3989* (6.2523)	-1.1411 (8.0429)	-23.4283** (9.2238)
N	297	149	148	297	149	148
R-Squared	0.0214	0.0124	0.0611	0.1217	0.2196	0.0887
Control Mean	94.6939	95.5102	93.8776	63.0612	61.4286	64.6939

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Mechanisms: Norms

Table: Hygiene Meter Readings and Soap Used

Dependent Variable	Hygiene Meter			Soap Used
	Pooled	Female	Male	Pooled
	(1)	(2)	(3)	(4)
HW No Neighbors	1.0418*** (0.1669)	1.3540*** (0.2161)	0.8070*** (0.2502)	0.1462 (0.2061)
HW Neighbors	1.2785*** (0.1668)	1.2679*** (0.2080)	1.4313*** (0.2244)	-0.0657 (0.5091)
Imam No Neighbors	1.1396*** (0.1574)	1.2864*** (0.2199)	1.0105*** (0.2337)	0.2715 (0.2695)
Imam Neighbors	1.3128*** (0.1708)	1.3630*** (0.2186)	1.4367*** (0.2330)	-0.0517 (0.3415)
N	137	66	71	118
R-Squared	0.4026	0.5279	0.3431	0.0147
Control Mean	-0.0000	-0.0569	0.0682	0.0000

Notes: \* 0.10 \*\* 0.05 \*\*\* 0.01.

# Conclusion

- ▶ In this project, I compare local religious and secular leaders to shed light on the benefits and pitfalls of utilizing religious leaders to conduct informational campaigns.
- ▶ I find preliminary evidence that religious leaders can be more effective than secular leaders at creating behavior change among Pakistani men.
- ▶ They do not seem to reduce trust in state institutions, decrease prosociality towards religious out-groups, or increase religiosity. However, religious leaders do negatively impact beliefs about the efficacy of secular medicine but effects are small.
- ▶ Results offer evidence for the importance of local religious leaders at the grassroots level with the potential to work effectively with the state for mass communication.

Thank You!