

Sexual Harassment in Public Spaces and Police Patrolling: Experimental Evidence from Urban India

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The problem with sexual harassment in public spaces

- ▶ **Sexual harassment in public spaces** is a major problem worldwide: over 50% of women have experienced it in their lifetime Definition
- ▶ Sexual harassment can widen the socio-economic gender gap:
 - ▶ Raises the cost of physical mobility (Field and Vyborny, 2022; Kondylis et al., 2022)
 - ▶ Lowers educational investment (Borker, 2021)
 - ▶ Correlated with low female labor force participation (Jayachandran 2020; Chakraborty et al., 2018; Siddique, 2018)
- ▶ Addressing this is extremely challenging because it is (1) **socially tolerated** and (2) **hard to measure**, victims rarely report these crimes
- ▶ There is a lack of understanding of how **attitudes of first responders – the police** – interact with this issue in public spaces

This paper

1. We partner with the **Hyderabad City Police** in the Indian state of Telangana
 - ▶ Study a specialized police patrolling called **SHE Teams** that focuses solely on sexual harassment
 - ▶ Implementing a place-based RCT that varies the **presence** and **visibility** of street police patrols in 350 hotspots

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 - ▶ Implementing a place-based RCT that varies the **presence** and **visibility** of street police patrols in 350 hotspots
2. Novel measurement method of street harassment in public spaces
 - ▶ We measure incidence through an **double blind observation exercise** conducted by trained external parties in real time Measurement

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2. Novel measurement method of street harassment in public spaces
 - ▶ We measure incidence through an **double blind observation exercise** conducted by trained external parties in real time Measurement
3. Implemented lab experiments and surveys to understand: (i) police officers' ability to **detect** and **sanction** sexual harassment crimes; and (ii) the role of police officers' **views concerning sexual harassment**

Research questions

- ▶ Can street police patrolling that targets only harassment affect **the type and frequency** of incidents?
- ▶ What are the main mechanisms behind the intervention?
 - ▶ Are effects due to an **incapacitation** or **deterrence** effect?
 - ▶ Do we need **visible police** to be able to **deter** with their **visible actions and attitudes**?
 - ▶ or do we just need **undercover policing** to **incapacitate** a larger number of perpetrators?
 - ▶ Are **police and citizens' views surrounding sexual harassment** relevant to explain its incidence?
- ▶ Does street harassment constrain **women's mobility** behavior?

Preview of the main findings: Uniformed policing reduces severe sexual harassment and improves women's mobility

1. Uniformed police patrolling **reduced severe** sexual harassment by 27%
 - ▶ e.g., stalking, touching, groping, pushing, indecent exposure, physical abuse
2. Uniformed police patrolling improved women's mobility behavior
 - ▶ There is a **reduction** in observed rates of movements to a nearby location in response to harassment
3. Uniformed police patrolling did **not reduce mild** forms of sexual harassment
 - ▶ e.g., unwelcome comments, catcalling, whistling, inappropriate gestures
4. Undercover police patrolling **did not** change any form of sexual harassment

Preview of the mechanisms: Police visibility matters to deter perpetrators

- ▶ The decline in severe harassment for uniformed policing **is due to deterrence and not due to incapacitation effects**:
 1. Undercover policing lead to more arrests (stronger incapacitation effects)
 2. But uniformed policing lead to a reduction in sexual harassment
- ▶ We **do not** find the impact is driven by changes in victim's reporting behavior
- ▶ There is **no** evidence of changes in other forms of crime or displacement effects
- ▶ Dynamics underlining the learning process signalled by officers to perpetrators:
 1. The incidence of severe harassment declines after an increase in sanctions and warnings
 2. Citizens learn that police officers target these crimes
 3. Evidence that perpetrators may update their behavior after seeing the police in action

Preview of the mechanisms: Police officers' views matter to reduce all forms of sexual harassment

- ▶ We conduct a lab experiment with police officers and find that:
 - ▶ Officers' can **detect** sexual harassment, including **mild** cases
 - ▶ Even when elicitation mimics offenses happening quickly and in crowded areas
 - ▶ Police officers' tolerance of mild forms of sexual harassment is **high** → they are **less** likely to **exert** effort, and or **punish** such cases
- ▶ Hotspots with patrolling teams with **harsher attitudes toward these crimes** experience a reduction in **both mild and severe forms of sexual harassment**

Police attitudes and their visibility are key mechanisms to understand the incidence of sexual harassment

Contributions to the literature

1. **Causes and consequences of sexual harassment** (Kondylis et al., 2022; Borker, 2021; Cheema et al., 2019; Field and Vyborny, 2022; Siddique, 2018; Cook et al., 2021)
2. **Street policing and crime** (Blattman et al., 2021; Banerjee et al., 2019; Vidal and Kirchmaier, 2018, Bell et al., 2014; Draca et al., 2011; Di Tella and Schargrodsky, 2004)
3. **The role of officers' attributes on police efficacy in reducing crime** (Banerjee et al., 2021; Blair et al., 2021; Ba et al., 2021; Miller and Segal, 2019)

Context

Street sexual harassment in Hyderabad

- ▶ We surveyed female commuters in the city of Hyderabad and learned that:
 - ▶ **29%** faced some form of sexual harassment in the previous month
 - ▶ Women are sexually harassed at least twice per month
 - ▶ **45%** of women do not feel safe at a hotspot
 - ▶ **87%** of women take some form of preventive measure to avoid harassment



The Safety, Health, and Environment Program (SHE Teams)

- ▶ Hyderabad City Police serves 6.8 million people
- ▶ **SHE Teams** is a policing program aimed at ensuring women's safety
 - ▶ The program was launched on October 24, 2014 in Hyderabad
 - ▶ Street patrolling: reduce harassment in public spaces by targeting perpetrators:
Identifying → **Counseling + Penalties**
Legal Penalties
 - ▶ Operated at small scale with **undercover teams**
 - ▶ Two tools to incapacitate: warnings and red-handed cases (sanctions)



The SHE Team officers patrolling

- ▶ Teams of 2-3 officers patrol hotspots
- ▶ Team consists of at least 1 female officer and one senior officer (Assistant Sub-Inspector or above)
SHE Team vs. Non-SHE team
- ▶ Patrolling teams carry tracking devices
- ▶ Officers are tracked by video calling them at random times and by sharing pictures/location via WhatsApp



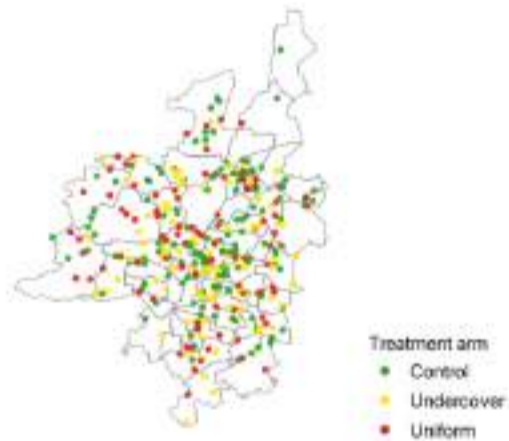
Expanding the SHE Team program

- ▶ Collaboration with the police to study the program through an expansion to **350** additional hotspots
 - ▶ 700 areas identified to measure spillovers (200m, 500m radius of the hotspot)
 - ▶ **156** police officers were recruited to patrol the treated areas
- ▶ We expanded the program to also include **uniform policing** (visible police with uniforms)
- ▶ The daily patrolling shift are from **8 AM** and **8 PM** 6 days a week
- ▶ Objective is that SHE Teams visits each hotspot at least **3 times** per week about **15-20 min** each time
 - ▶ Random rotation of teams across days of the week
 - ▶ **Individual officers randomly allocated to teams by day and shift**
 - ▶ Very common policing operational mode: Braga, Papachristos, Hureau, 2012
- ▶ The intervention lasted **6 months**

Hotspots are areas where women known to face harassment

- ▶ Identified using past reported crime data
- ▶ Mix of areas without a clearly defined boundary
 - ▶ Bus stops, railway stations and busy markets, educational facilities
- ▶ Hotspots are of varying sizes ($\sim 150\text{m}$ radius)

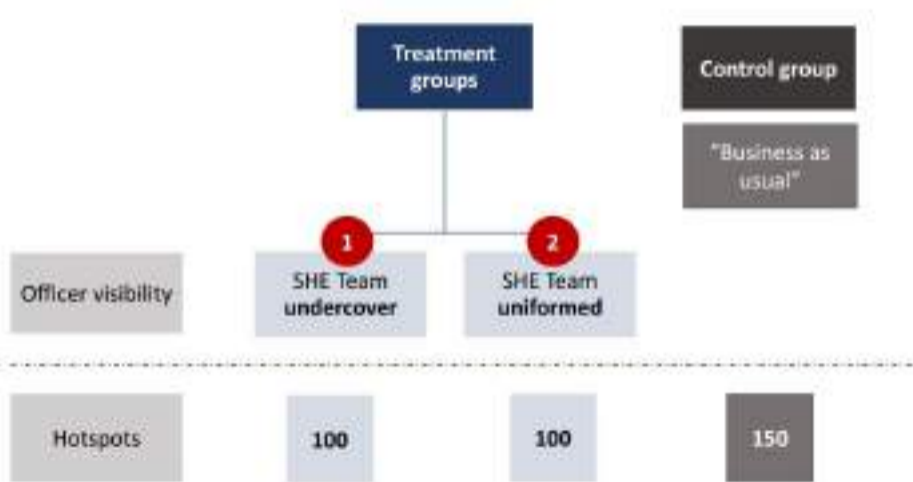
Zooming in over hotspots



Experimental Design

Experimental design

- Selected hotspots were randomly allocated to one of three groups for 6 months:



Theory of change

Uniform policing may reduce the incidence of sexual harassment by:

1. Deterring the perpetrator by just being visible
2. Deterring the perpetrator by being active (e.g, walking around, talking to potential perpetrators, civilians, etc.)
3. Incapacitating perpetrators by “taking them out” of the street
4. Increasing police report rates

Theory of change

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Undercover policing may reduce the incidence of harassment by mainly addressing 3

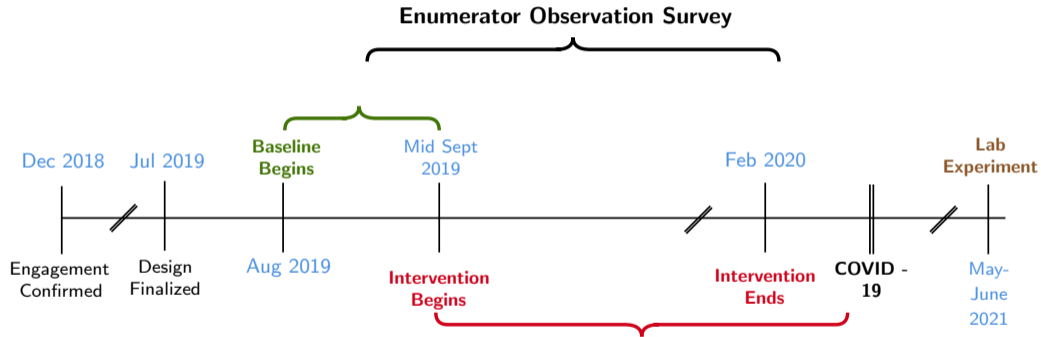
- ▶ This was the main goal of SHE Teams: to maximize apprehensions
 - ▶ The expectation is that incapacitation effects are larger under undercover police patrols
- ▶ Less likely to have deterrence effects since they are not visible and even when they arrest their performance is less salient **Heterogeneity**

Randomization and Balancing

- ▶ Randomization:
 - ▶ Stratified by type and footfall **Strata**
 - ▶ Type → Educational facility, public space, travel/station
 - ▶ Footfall → High, Medium, Low
- ▶ Balancing obtained across multiple variables:
 1. Circumstances of victimization, women's characteristics, gender norms **Table**
 2. Spillover areas **200m** **500m**
- ▶ We exploit random composition of officers in teams with different views on street sexual harassment and study how this interacts with police patrolling

Timeline & Data

Timeline of activities



Data: Observed sexual harassment in public spaces

- ▶ Recruited 173 female enumerators
- ▶ On average there are 37 enumerators working per week
 - ▶ To minimize fatigue and trauma enumerators worked for 8 weeks at a time
- ▶ Trained to identify instances of harassment towards other women in hotspots
 - ▶ Using a similar curriculum to that of the SHE Teams
- ▶ Spend 15-20 mins per location
- ▶ Enumerators do at least one visit per hotspot per week
 - ▶ Observations done in treated, control and spillover areas
- ▶ Random routes per day
- ▶ Blind to the intervention and treatments
- ▶ Record information on their mobile-phone → unlikely they would be noticed as observers by citizens

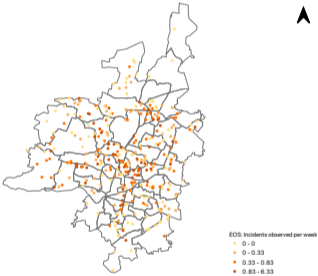
Data: Observed sexual harassment in public spaces

- ▶ A total of 24,669 observations from hotspots and spillover areas
- ▶ We create a weekly measure of sexual harassment (EOS) per hotspot
 - ▶ Unbalanced panel since some weeks some hotspots were not covered

Advantages:

1. Allows tracking changes in harassment accurately
2. Uncorrelated with the experiment ▶ Visits ▶ Duration
 - ▶ The timing of visits is uncorrelated with the Treatment ▶ Visits by Arm&Time of Day
3. **High-frequency data**
4. Not impacted by reporting effects

Reconciling measures of sexual harassment



Enumerator Observation Survey



Female Commuters' Survey



Sexual Harassment Police Calls

Data: Descriptive Statistics

	Mean	SD	Min	Max
Total Visits	3.087	1.926	0.000	10.000
Duration per visit	15.340	13.330	0.000	150.000
Warnings and sanctions per visit	0.019	0.112	0.000	1.600
Warnings per visit	0.013	0.092	0.000	1.500
Sanctions per visit	0.006	0.057	0.000	1.000
Total victims per visit	0.449	0.612	0.000	5.000

- ▶ Evidence of compliance with the criteria of the intervention
- ▶ Officers sanction about 5% of the incidents

Empirical Strategy and Results

Empirical strategy

- ▶ We exploit the random assignment of police patrols and estimate ITT using the following equation:

$$Y_{hw} = \delta_1 \text{Uniformed}_h + \delta_2 \text{Undercover}_h + \epsilon_{hw} \quad (1)$$

where,

- ▶ Y_i is the outcome of interest at hw (i.e., the number of observed victims per visit)
- ▶ Uniform_h is 1 if the hotspot is patrolled with officers in uniform
- ▶ Undercover_h is 1 if the hotspot is patrolled with undercover officers
- ▶ Extra: We add j covariates X_{hw} (public holidays, religious festivals) and γ_w week FE to improve the precision of estimates
- ▶ Standard errors are clustered at the HP

Did officers patrol the assigned areas?

Figure 13: Vehicular Tracking Dashboard



- ▶ Teams travel between hotspots by vehicle
- ▶ Team members randomly allocated
- ▶ Officers patrolled in all treated arms of the intervention by foot
- ▶ We track officer vehicles and geo-code the routes
 - ▶ Duration of visits by area calculated by the length the engine is off.

Did officers patrol the assigned areas?

	Patrol Duration	Warnings	Sanctions	Warnings and Sanctions
Uniformed	12.697*** (0.297)	0.007*** (0.002)	0.003*** (0.001)	0.010*** (0.002)
Undercover	18.014*** (0.388)	0.018*** (0.003)	0.010*** (0.002)	0.028*** (0.004)
Observations	8,400	8,400	8,400	8,400
Mean of Dep. Var	15.340	0.013	0.006	0.019
Uniformed=Undercover (p-value)	0.000	0.001	0.001	0.000

- ▶ Patrols took place as required
- ▶ Is there evidence of incapacitation effects? Yes, the police took *some* perpetrators out of the street
 - ▶ Effects on sanctions are too small relative to the number of incidents
 - ▶ Effect size for Uniformed is lower than Undercover → incapacitation channel mechanically works through its effect on deterrence

Results on Observed Harassment

Effects on observed harassment

	Sexual Harassment in Public Space		
	Total	Severe	Mild
Uniformed	-0.029 (0.025) [0.288]	-0.035*** (0.013) [0.008] {0.038}	0.006 (0.019) [0.770] {0.896}
Undercover	-0.009 (0.026) [0.708]	0.006 (0.014) [0.608] {0.896}	-0.015 (0.018) [0.400] {0.796}
Observations	4,988	4,988	4,988
Mean of Dep. Var	0.471	0.129	0.342
Uniformed=Undercover (p-value)	0.478	0.002	0.325

- ▶ We find evidence that street policing patrolling lowers the incidence of severe forms of harassment
- ▶ No effects on other forms of harassment
- ▶ No effects on street patrols with undercover policing
- ▶ Robust to enumerator FE [Table](#), week FE, public holidays and festivals, bus strikes [Table](#)
- ▶ Multiple hypothesis test adjustment and randomization inference [Table](#)

Mechanisms

What explains the reduction in severe forms of harassment?

Given the lack of effects for undercover policing, we learn that:

- ▶ Incapacitation effects alone may not explain the reduction of the severe forms
 - ▶ This is consistent with the small effects found on warnings and notices
 - ▶ Since they are undercover, their performance is less likely to deter crime
- ▶ Visibility of the police in uniforms seems to be important to deter potential criminals from committing the worst cases
 - ▶ Perpetrators learn about police targeting these crimes Figure

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- ▶ Visibility of the police in uniforms seems to be important to deter potential criminals from committing the worst cases
 - ▶ Perpetrators learn about police targeting these crimes [Figure](#)

Are results driven by other changes that could be directly linked to a more visible police?

1. Victims' reporting behaviour remained unchanged [Sexual Harassment](#) [Other Crimes](#)
2. Results are not driven by displacement of perpetrators to other areas [Tables](#)
3. No changes in footfall [Footfall](#)

What drives the failure to address mild harassment?

We explore the potential mechanisms that could be explaining a lack of effects of uniform on mild severity sexual harassment cases:

1. Design lab experiments to understand police performance and views regarding mild severity harassment offenses
2. Analyze whether police officers' views surrounding sexual harassment can explain the lack of effects
 - ▶ We exploit random composition of officers in teams with different views on street sexual harassment and study how this interacts with police patrolling

Lab experiments



Figure: Lab map and setting.

- ▶ 354 officers that completed a baseline survey were invited to take part in a 1-hour session [Protocol](#)

Design

- ▶ Officers saw ten videos
 - ▶ The scripts of the videos were developed based on sexual harassment instances described by women during the pilot
 - ▶ Scripts cross-checked with reports made to the SHE teams officers
- ▶ Videos: 7 forms of sexual harassment, 1 property offense, and 2 neutral events (no crime)
- ▶ Objective: To create in the lab a setting where we can test the role of detection capacity and actions
- ▶ We vary (i) the videos shown and (ii) the video speed: fast videos were displayed at a speed of 1.75x.3
 - ▶ If the length of a video is 2 minutes, a fast video would last 1.14 minutes
 - ▶ Intuition: to mimic what officers would face during patrols on the streets
- ▶ We check whether (i) they can detect the crime, (ii) if they believe it was easy to detect, (iii) if they believe they should be addressing those crimes as well as gathering evidence, and (iv) if they would punish the crime

Examples



Figure: ATM Robbery, Starring (less severe), Touching (sever)

▶ Mild:

▶ <https://www.youtube.com/watch?v=ehfNqtzRy1g>

▶ https://www.dropbox.com/s/i7c2fzzv7g8xwul/6_Singing%20lewd%20songs.mp4?dl=0

▶ Severe:

▶ <https://www.youtube.com/watch?v=yN0xZoMMZ-8>

▶ https://www.dropbox.com/s/s9i2avy5e2btm2n/11_Inapt%20Touching_Bus.mp4?dl=0

Results

$$Y_{ios} = \beta_0 + \delta_1 \text{SexualHarassment}_i + X_o + \gamma_s + \epsilon_{ios} \quad (2)$$

	Detection	Easy to Detect	Need to Address	Punish
Mild Sexual Harassment	-0.024 (0.022)	-0.097*** (0.022)	-0.076*** (0.010)	-0.187*** (0.012)
Obs.	2,688	2,688	2,688	2,688
Dep. Var. Mean	0.82	0.70	0.92	0.84

- ▶ Police officers' ability to detect mild is similar to other crimes
- ▶ Police officers' tolerance and willingness to sanction are lower for mild forms of harassment
- ▶ Robust to the inclusion of officer FE, social desirability bias, and officer controls
- ▶ Comparing Severe and Mild Sexual Harassment by Sexual Harassment

Can police officers' attitudes towards harassment explain the results?

	Sexual Harassment in Public Spaces		
	Total	Severe	Mild
Uniformed X Positive Police Attitudes	-0.058*	-0.003	-0.055*
	(0.033)	(0.016)	(0.030)
Uniformed	-0.005	-0.032**	0.028
	(0.028)	(0.015)	(0.021)
Undercover X Positive Police Attitudes	0.044	0.047	-0.003
	(0.056)	(0.031)	(0.039)
Undercover	-0.004	0.000	-0.004
	(0.030)	(0.016)	(0.021)
Observations	4,582	4,582	4,582
Mean of Dep. Var. / Control	0.471	0.129	0.342

- ▶ Hotspots with teams of police officer with better attitudes towards sexual harassment reduce the incidence of all types by **13%**
- ▶ The reduction in mild cases is driven by officers with **harsher views** around sexual harassment
- ▶ For severe offenses for which the probability of punishment is **higher** there is no added police performance effect by having officers with better views

Can police officers' attitudes explain the incidence of harassment?

Given that there is a cost of being active and this depends on the harassment views we have:

- ▶ Severe harassment: Perpetrators learn that all police officers act against severe cases and thus by the virtue of visibility (no matter the type) they may be deterred from committing the worst forms
- ▶ Mild harassment: Perpetrators learn that only more active officers (who in general have less tolerance) will act against these offenses and thus by just observing these types of police officers they may be deterred from committing it

Uniform policing deters (i) severe harassment and (ii) any type of sexual harassment if police officers are less tolerant and thus more active at the hotspot

Patrolling behavior and Norms

Willingness to sanction and Norms

Implications for Women's Behavior

Does improved safety alleviate constraints to women's mobility?

- ▶ At baseline, we observe that more than **45%** of women react towards harassment (e.g., by moving to another area) if a perpetrator harasses her
- ▶ Over **80%** of women take some precautionary measure
- ▶ Can SHE Teams patrols alter women's reactionary behaviors?
- ▶ This is probably the first step toward understanding the link between safety-female empowerment (Borker, 2022)

Does police patrolling reduce women's safety concerns?

Share of Victims Moving Location due to Sexual Harassment in Public Spaces	Severe	Mild
	Uniformed	-0.061** (0.031)
Undercover	0.001 (0.032)	0.023 (0.020)
Observations	774	2,022
Mean of Dep. Var. / Control	0.211	0.236
Uniformed = Undercover (p-value)	0.064	0.845

- ▶ We show that visible policing lowers women's use of coping strategies that are associated with limiting women's economic empowerment
- ▶ We observe fewer women moving to another area due to harassment

- ▶ **Victims' Characteristics** **Perpetrators' Characteristics** **Mobility and Incidence of SSH**
Mobility and Incidence of SSH (Any Harassment Sample) **Mobility and Incidence of SSH (Full Sample)** **First Stage**
Victims' Responses

Uniform policing makes women's mobility less constrained by safety concerns

Discussion and Conclusion

- ▶ Sexual harassment is very costly to women
- ▶ Harassment in public spaces is a major policy challenge as countries become more urbanized
 - ▶ Alleviating women's constraints to mobility can be achieved if policies are able to reduce even the lower bound of incidents (severe)
 - ▶ **Our results show that improved policing may reduce exposure to more severe offenses**
- ▶ We also show that place-based policing while effective has some limitations when it comes to harassment
 - ▶ Increasing police visibility may be beneficial → but will not be sufficient without taking into account the views of officers towards certain crimes
 - ▶ **Our results highlight the need to change police officers' attitudes towards sexual harassment for mild severity cases**

Thank you

- ▶ Ethics approval: Princeton University and IFMR-LEAD
- ▶ Pre-analysis plan: AEA RCT Registry 7096
- ▶ Implementing Partner: Hyderabad City Police
- ▶ Data collection: IFMR-LEAD
- ▶ Research assistants: Aishwarya Kekre (University of Virginia), Aditi Priya (Brown University), and Jagannath R. (Development Solutions Inc.), Bruno Jimenez (Princeton), Paulo Matos (Caltech), Xinyu Ren (World Bank)
- ▶ Funding: Princeton University, World Bank, Leibniz Association, University of Connecticut, and JPAL Crime and Violence Initiative

Appendix

Street Harassment

- ▶ Street sexual harassment involves:
 1. High severity offenses → threats to hurt, indecent exposure, stalking, touching, groping, pushing, intimidation, physical abuse or abduction, taking pictures without consent
 2. Low severity offenses → unwelcome comments, catcalling, whistling, inappropriate gestures or facial expressions or ogling

[Back](#)

[Back-Penalties](#)

Effects on Harassment - Key Checks

	Sexual Harassment in Public Space		
	Total	Severe	Mild
Panel A: Control for Week FE and Public Holidays			
Uniformed	-0.023 (0.024)	-0.033** (0.013)	0.009 (0.018)
Undercover	0.009 (0.025)	0.011 (0.014)	-0.002 (0.018)
Panel B: Control for Week FE, Public Holidays, and Bus Strikes			
Uniformed	-0.024 (0.024)	-0.033** (0.013)	0.009 (0.018)
Undercover	0.009 (0.025)	0.011 (0.014)	-0.002 (0.018)
Observations	4,988	4,988	4,988
Mean of Dep. Var.	0.471	0.129	0.342

Effects on Harassment with Observer FE

	Sexual Harassment in Public Space		
	Total	Severe	Mild
Uniformed	-0.019 (0.024)	-0.031** (0.013)	0.012 (0.019)
Undercover	0.011 (0.024)	0.009 (0.014)	0.001 (0.018)
Observations	4,988	4,988	4,988
Mean of Dep. Var	0.471	0.129	0.342
Uniformed=Undercover (p-value)	0.250	0.002	0.598

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Effects on Harassment in Spillover Areas

	Sexual Harassment in Public Spaces					
	Total		Severe		Mild	
	200m	500m	200m	500m	200m	500m
Uniformed	-0.017 (0.024)	-0.016 (0.025)	0.000 (0.014)	-0.004 (0.013)	-0.017 (0.018)	-0.012 (0.019)
Undercover	0.002 (0.026)	0.010 (0.024)	-0.005 (0.015)	-0.008 (0.013)	0.007 (0.019)	0.018 (0.018)
Observations	4,683	4,696	4,683	4,696	4,683	4,696
Mean of Dep. Var	0.404	0.373	0.110	0.096	0.294	0.277
Uniformed=Undercover (p-value)	0.472	0.351	0.719	0.773	0.215	0.152

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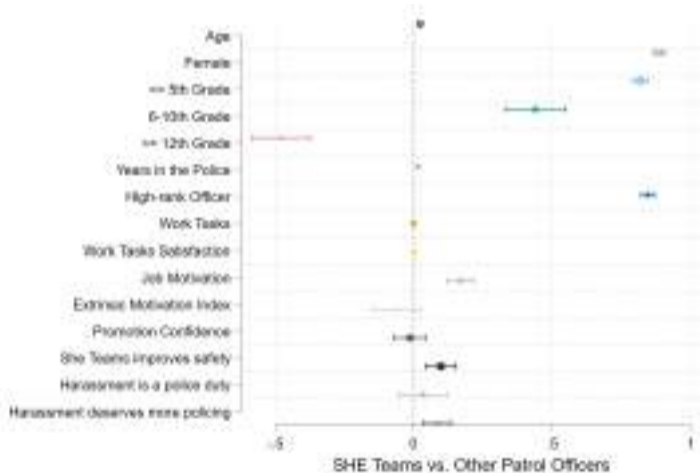
Effects on footfall

	Hotspot	
Uniformed	-0.060 (0.054)	-0.057 (0.052)
Undercover	0.034 (0.059)	0.051 (0.057)
Observations	4,988	4,988
Mean of Dep. Var / control	3.586	3.586
Week FE	No	Yes
Public Holidays/Bus Strike	No	Yes
Uniformed=Undercover (p-value)	0.122	0.071

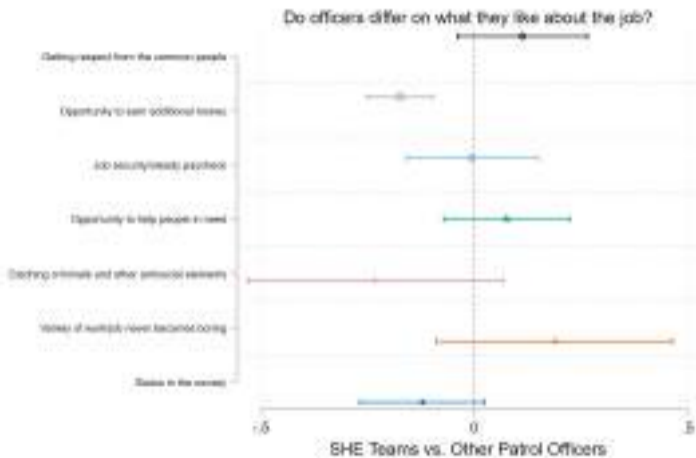
- ▶ On average there are 67 people observed at a hotspot.

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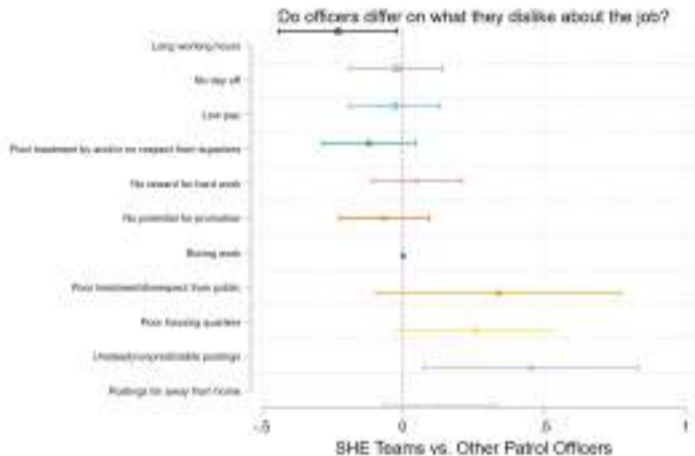
SHE team vs. Non-SHE team officers I



SHE team vs. Non-SHE team officers II



SHE team vs. Non-SHE team officers III



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Dial 100 Calls - Sexual Harassment

	Total Sexual Harassment Calls		
Uniformed	-0.039 (0.048)	-0.039 (0.048)	-0.035 (0.047)
Undercover	0.043 (0.058)	0.043 (0.058)	0.042 (0.057)
Observations	9,450	9,450	9,450
Mean of Dep. Var. / Control	0.404	0.404	0.404
Uniformed=Undercover (p-value)	0.170	0.171	0.184
Week FE	No	Yes	Yes
Public Holiday	No	No	Yes
Bus Strike	No	No	Yes

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Dial 100 Calls - Other crimes

Table: Effect on Dial 100 Calls–Other Crimes

	Total Other Crimes	Accidents	Physical Offenses	Nuisances	Property Offenses
	(1)	(2)	(3)	(4)	(5)
Uniform Hotspot	-0.221 (0.279)	-0.028 (0.045)	-0.020 (0.036)	-0.052 (0.069)	-0.035 (0.032)
Undercover Hotspot	0.159 (0.303)	-0.021 (0.049)	0.012 (0.039)	0.064 (0.071)	0.006 (0.035)
Observations	9,450	9,450	9,450	9,450	9,450
Mean of Dep. Var.	4.380	0.586	0.700	1.048	0.369
Strata FE	Yes	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes	Yes
Public Holiday	Yes	Yes	Yes	Yes	Yes
Bus Strike	Yes	Yes	Yes	Yes	Yes

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Dial 100 - Robustness Checks

Table: Effect on Total Crimes against Women - Robustness Checks

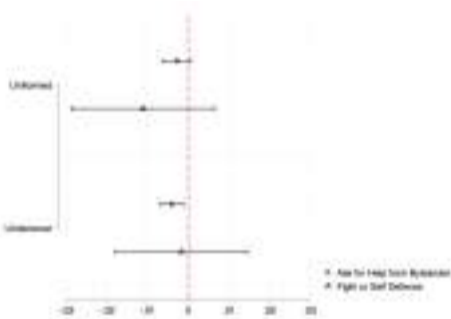
	(1) Poisson	(3) Removing Outlier Week	(2) Dummy
Uniform Hotspot	-0.090 (0.122)	0.004 (0.031)	0.004 (0.030)
Undercover Hotspot	0.123 (0.136)	0.022 (0.032)	0.023 (0.032)
Observations	9,450	9,100	9,450
Mean of Dep. Var / control	0.037	0.474	0.459
Strata FE	Yes	Yes	Yes
Week FE	Yes	Yes	Yes
Public Holiday	Yes	Yes	Yes
Bus Strike	Yes	Yes	Yes
Adjusted R-squared		0.061	0.083

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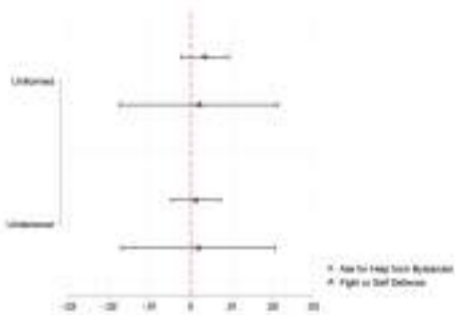
Stratification

	Control	Uniform	Undercover	Total
Educational - Normal	33	20	22	75
Educational - Large	3	2	2	7
Educational - Very Large	1	2	1	4
General - Normal	41	28	27	96
General - Large	5	2	4	11
General - Very Large	1	0	0	1
Residential - Normal	16	12	10	38
Residential - Large	2	1	2	5
Commuter - Normal	39	27	26	92
Commuter - Large	7	4	4	15
Commuter - Very Large	2	2	2	6
Total	150	100	100	350

Effect of Policing by Type of Women's Response



(Severe SH)

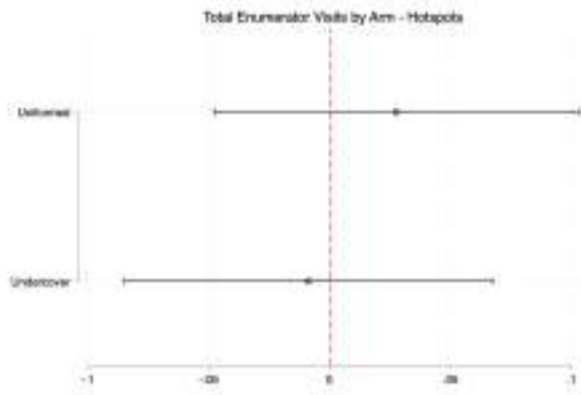


(Mild SH)

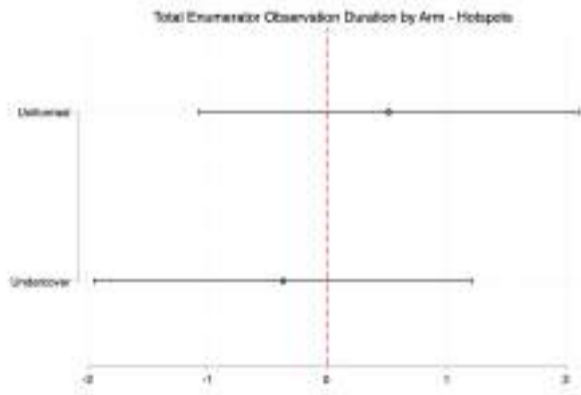
Detection and Punishment of Severe Sexual Harassment against Mild Forms

	(1) Detection	(2) Punish.
Severe Sexual Harassment	-0.060** (0.028)	0.024** (0.012)
Observations	1,337	1,319
Mean of Dep. Var / control	0.797	0.984
Sample	Sexual Harassment	
Session FE	Yes	Yes

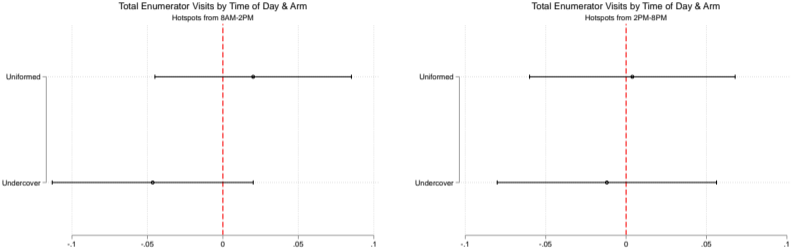
Effect of the Treatment on Enumerator Visits



Effect of the Treatment on Enumerator Visits Duration

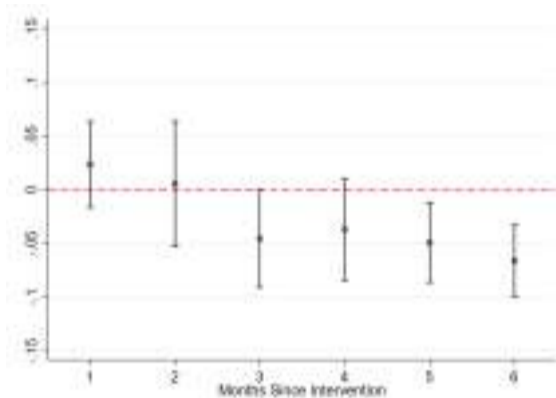


Effect of the Treatment on Enumerator Visits by Time of the Day

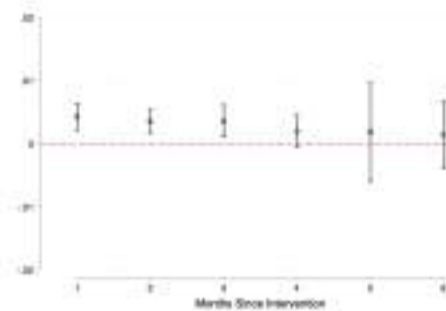


▶ Back

Dynamic effects on sexual harassment and sanctions/warnings



(Street Sexual Harassment)



(Sanctions/warnings)

- ▶ These results are consistent with perpetrators learning over time about police presence and their actions toward harassment.

Novel measure of sexual harassment

- ▶ Research on sexual harassment in public space is constrained by lack of high-quality data: is highly tolerated and less likely to be reported
- ▶ Majority of the studies use self-reported data on sexual harassment in public space
- ▶ We use a **novel** method to obtain a **high-frequency measure of the incidence** of sexual harassment in public space
 - ▶ We measure incidence through observation data by trained enumerators
 - ▶ We **trained enumerators to identify the entire spectrum of sexual harassment** – ranging from mild (e.g., stalking) to severe (e.g., groping) → similar to the training police officers get from the Telangana Police
- ▶ This allows us to address: (i) **reporting concerns** (these are *not* official police reports, therefore, no cost of reporting); (ii) **stigma** (enumerators are recording sexual harassment faced by *other* women), and (iii) **experimenter demand effects** (enumerators were *unaware* of the intervention)

Penalties for sexual harassment

- ▶ Harassment is governed by the Hyderabad City Police Act of 2011, and penalties are booked under the legislation of the Indian Penal Code (IPC)
- ▶ Penalties vary by severity:
 1. Mild harassment: 10 days in jail, fines up to Rs.1000, counseling
 2. Severe harassment: 3-7 years imprisonment or life in the case of rape
- ▶ Examples:
 - ▶ **IPC 354:** *Outraging the modesty of women;*
 - ▶ **IPC 509:** *Word gestures or act intended to insult the modesty of a woman;*
 - ▶ **IPC 503 & 506:** *Criminal intimidation, Blackmailing & threatening;*
 - ▶ **Section 66 & 67 of IT Act:** *Harassing through social media & What's App, creating fake accounts, morphing, sending obscene videos & pictures*

Effect on observed harassment - Extended Table of Results

	(1)	(2)	(3)
	Total	Severe	Mild
	SSH	SSH	SSH
Uniformed	-0.029 (0.025) [0.288]	-0.035*** (0.013) [0.008] {0.038}	0.006 (0.019) [0.770] {0.896}
Undercover	-0.009 (0.026) [0.708]	0.006 (0.014) [0.608] {0.896}	-0.015 (0.018) [0.400] {0.796}
Observations	4,988	4,988	4,988
Mean of Dep. Var	0.471	0.129	0.342
Uniformed=Undercover (p-value)	0.478	0.002	0.325

- ▶ We test 4 hypothesis so we correct p- values following Westfall et al (1993)
- ▶ We also report randomized inference p-values since clustering the se at the hotspot level could lead to a biased estimation of the effect of the intervention

Police Attitudes and Patrolling Behavior [Back](#)

	Patrol Duration	Duration per Visits
Uniformed X Police Attitudes	2.466*** (0.751)	3.685*** (0.555)
Uniformed	37.071*** (0.782)	11.747*** (0.270)
Undercover X Police Attitudes	3.342*** (0.856)	3.570*** (0.910)
Undercover	34.976*** (0.737)	17.392*** (0.412)
Observations	8,400	8,400
Mean of Dep. Var / Control	36.62	15.34

Police Attitudes and Punishment [Back](#)

	Punish
Mild Sexual Harassment Film	-0.607*** (0.044)
Police Attitudes	-0.014 (0.029)
Mild Sexual Harassment Film X Police Attitudes	0.462*** (0.045)
Observations	2,832
Mean of Dep. Var	0.837

Effect of Policing on Victims' Characteristics

	Type of Skin	Western Clothes	Underage
Uniformed	0.000 (0.011)	-0.002 (0.009)	0.006 (0.004)
Undercover	-0.009 (0.011)	-0.013 (0.008)	0.004 (0.004)
Observations	4,988	4,988	4,988
Mean of Dep. Var / Control	0.133	0.086	0.018
Uniformed=Undercover (p-value)	0.478	0.237	0.711

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Effect of Policing on Perpetrators' Characteristics

	Underage	Knows Victim
Uniformed	-0.000 (0.002)	0.002 (0.005)
Undercover	-0.000 (0.002)	-0.001 (0.004)
Observations	4,988	4,988
Mean of Dep. Var / Control	0.006	0.022
Uniformed=Undercover (p-value)	0.969	0.537

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Women's Mobility and Severe SSH Rate.

Share of Victims Moving Location due to Severe SSH		
	OLS	IV
Severe-to-Total Ratio	0.001*** (0.001)	0.012 (0.007)
Observations	774	774
Mean of Dep. Var.	0.197	0.197
Instrument	-	Uniformed
F-Stat	-	5.156

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Women's Mobility and Severe SSH Rate (Cont.)

Share of Victims Moving Location due to Severe SSH		
	OLS	IV
Severe-to-Total Ratio	0.003*** (0.000)	0.006*** (0.002)
Observations	2,226	2,226
Mean of Dep. Var.	0.075	0.075
Instrument	-	Uniformed
F-Stat	-	18.518

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Women's Mobility and Severe SSH Rate (Cont.)

Share of Victims Moving Location due to Severe SSH		
	OLS	IV
Severe-to-Total Ratio	0.003*** (0.000)	0.006*** (0.002)
Observations	4,988	4,988
Mean of Dep. Var.	0.031	0.031
Instrument	-	Uniformed
F-Stat	-	17.639

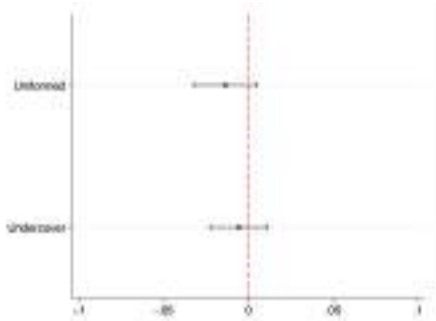
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First Stage

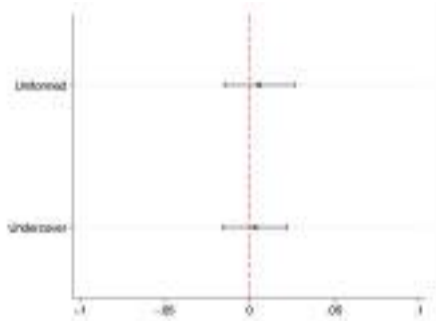
	Severe-to-Total Ratio		
Uniformed	-5.148** (2.267)	-6.417*** (1.485)	-3.017*** (0.737)
Sample	Conditional on Severe SSH	Conditional on Any SSH	Full Sample
Observations	774	2,226	4,988
Mean of Dep. Var.	55.59	32.34	8.627

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Effect of Policing on Women's Responses by Type of Harassment



(Severe SH)



(Mild SH)

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Protocol

- ▶ 354 officers that completed a baseline survey were invited to take part in a 1-hour session
 1. We invited officers from the SHE Teams
 2. We invited officers from non-SHE teams patrol
 - ▶ Officers from the same stations that SHE Teams officers were recruited from
 - ▶ Same ranking
 - ▶ Same type of duty (patrols)
 - ▶ Gendered proportional representation similar to that in SHE Teams
- ▶ Covid-19 safety protocol was strictly followed
- ▶ We use various videos to elicit responses to various instances of sexual harassment in public space (Rickne and Folke, 2022)

Theory of change: Heterogeneity

Heterogeneity:

1. Police officers' attitudes towards sexual harassment
 2. Citizens' attitudes towards sexual harassment
- ▶ Being active at the hotspot is costly
 - ▶ e.g., moving around to catch perpetrators, capturing evidence, filling paperwork, etc
 - ▶ These costs depend on officers' and citizens views towards harassment:
 - (a) Hypothesis: Police officers with better views – low tolerance of harassment – have a lower cost of exerting effort → more likely to be active while patrolling
 - (b) Hypothesis: Citizens with better views will generate more pressure on visible officers to react → lower officers' net cost of being active