

# Sexual Harassment in Public Spaces and Police Patrols: Experimental Evidence from Urban India\*

Sofia Amaral<sup>†</sup>      Girija Borker<sup>‡</sup>      Nathan Fiala<sup>§</sup>      Anjani Kumar<sup>¶</sup>  
Nishith Prakash<sup>||</sup>      Maria Micaela Sviatschi<sup>\*\*</sup>

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We conducted a randomized controlled trial to evaluate the impact of an innovative police patrol program on sexual harassment in public spaces in Hyderabad, India. In collaboration with the Hyderabad City Police, we randomized both exposure to police patrols and the visibility of officers by deploying both uniformed and undercover personnel to hotspots. We implemented a novel, high-frequency observation exercise to measure sexual harassment at 350 hotspots, where enumerators took note of all observed instances of sexual harassment and women’s responses in real time. We find that although police patrols had no impact on overall street harassment, the visible policing patrols reduced severe forms of harassment (forceful touching, intimidation) by 27 percent and reduced the likelihood of women leaving the hotspot due to sexual harassment. We uncovered the underlying mechanisms and found that both police visibility and officers’ attitudes toward sexual harassment are key to understanding its incidence. While the performance of undercover officers was similar to that of uniformed officers, harassment did not decrease when undercover officers were on patrol. This suggests that the visibility of police officers is critical in deterring perpetrators. Additionally, using lab experiments we find that, on average, police officers were more tolerant of mild street harassment and less inclined to punish offenders in such cases. Correspondingly, we observed in uniformed hotspots a decline in all types of harassment only when assigned officers held stronger personal views on harassment.

**Keywords:** Street harassment, policing, female mobility, social norms

**JEL Codes:** J24, K42, J16, C93, C91

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<sup>†</sup>The World Bank South Asia Gender Innovation Lab and CESifo. Email: [s.amaral@worldbank.org](mailto:s.amaral@worldbank.org)

<sup>‡</sup>DIME, World Bank & IZA. Email: [gborker@worldbank.org](mailto:gborker@worldbank.org)

<sup>§</sup>University of Connecticut. Email: [nathan.fiala@uconn.edu](mailto:nathan.fiala@uconn.edu)

<sup>¶</sup>Indian Police Service.

<sup>||</sup>Northeastern University, CESifo, IZA, CReAM, HiCN & GLO. Email: [n.prakash@northeastern.edu](mailto:n.prakash@northeastern.edu)

<sup>\*\*</sup>Princeton University, CESifo & NBER. Email: [msviatschi@princeton.edu](mailto:m sviatschi@princeton.edu)

# 1 Introduction

Sexual harassment in public spaces limits women’s physical mobility, education choices, and labor force participation (Borker, 2021; Chakraborty et al., 2018; Siddique, 2018). Yet, more than half of all women worldwide have experienced street harassment in their lifetimes, and about 82 percent report avoiding certain areas due to harassment or the fear of it (ActionAid, 2016; Livingston, 2015).<sup>1</sup> Despite its prevalence, research on street harassment is limited due to many challenges (Moser, 2012).<sup>2</sup> First, street harassment is highly frequent and often socially accepted by many people (not only perpetrators but also first responders such as police officers), making the level of incidence a by-product of prevalent gender norms (Jayachandran, 2021).<sup>3</sup> Second, it is extremely difficult to measure sexual harassment since it is rarely reported to the police, and available administrative data is prone to measurement error and reporting bias (Saguy and Rees, 2021; Boudreau et al., 2023; Dahl and Knepper, 2021). Additionally, little is known about the efficacy of measures that could help reduce the harassment women face in public spaces (Borker, 2022).<sup>4</sup>

To address these challenges, this paper employs a cluster randomized controlled trial (RCT) to evaluate a novel program to address sexual harassment in public spaces in Hyderabad, India. The program, *Safety, Health and Environment Police Unit (SHE Teams)*, is a hotspot-policing patrol that targets and penalizes street harassment. It serves about

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<sup>1</sup>Street harassment includes unwelcome sexual advances, requests for sexual favors, and other verbal, non-verbal, and physical sexual conduct by a stranger in a public space. Street harassment is a major problem worldwide, for example, 86 percent of women living in cities in Brazil, 75 percent of women in the United Kingdom, and 79 percent of women in India have faced some form of harassment in public spaces (ActionAid, 2016).

<sup>2</sup>Recent novel research has focused on the effects of gendered crime in indoor locations such as workplaces, universities, and households (Bindler et al., 2020; Lindo et al., 2018; Folke and Rickne, 2020; Sharma, 2021; Adams-Prassl et al., 2022). We complement this research by focusing on sexual harassment in public spaces. This distinction makes it a substantially different problem to study because street harassment is typically socially tolerated and committed by strangers and between parties without an institutional relationship.

<sup>3</sup>As a related challenge, it is unknown how attributes of first responders—their skills, preferences, and norms—interact with sexual harassment in public spaces. In particular, since harassment is socially accepted, any policing intervention to address it would require officers’ attitudes and skills to align with the goal of stopping it.

<sup>4</sup>A few exceptions include an evaluation of segregation policies in public transport (Kondylis et al., 2020; Aguilar et al., 2021) and transport subsidies targeting women (Borker et al., 2020).

seven million people, making it one of the world’s largest policing interventions to directly address sexual harassment in public spaces. We partnered with Hyderabad City Police (HCP) to design and implement an RCT that randomized not only exposure to *SHE Teams* on patrol but also officers’ visibility across 350 harassment hotspots. The original program had only undercover officers, but since sexual harassment is frequent and socially tolerated, the research team and HCP agreed to test a visible angle. The first arm was “business as usual” (i.e., the control group), which was not exposed to *SHE Teams* patrols (150 hotspots). The second arm had undercover *SHE Teams* patrols of officers wearing civilian clothing (100 hotspots). The third arm had uniformed *SHE Teams* patrols of officers in regular police uniforms (100 hotspots). The gender, education, and experience compositions of officers were fixed across patrol teams: all teams had to include one female officer and one high-ranking senior officer. Individual officers were randomly allocated to teams by day and shift. Thus, the same officer could be allocated to uniformed and undercover hotspots depending on the day. In terms of frequency of exposure to the treatment, *SHE Teams* officers patrolled each treated hotspot for 15 to 20 minutes per day at least three times per week from September 2019 to March 2020.<sup>5</sup>

This design enabled us to understand the effects of patrols and whether they stemmed from changes in behavior among citizens and perpetrators after these groups saw police presence—that is, a *deterrence effect*—or from the sanctioning and removal of criminals from the scene by police—an *incapacitation effect*. In particular, our intervention allows us to disentangle whether most effects arise from deterrence or incapacitation since, by design, undercover police officers have a larger incapacitation effect than uniformed police officers.<sup>6</sup> This distinction is necessary to discern if visible police behavior deters criminals

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<sup>5</sup>*SHE Teams* followed a standard mode of police patrolling (Braga et al., 2019). This type of patrol is similar to those implemented in other settings such as the United States (Telep et al., 2014) and the United Kingdom (Blanes i Vidal and Mastrobuoni, 2018). For a review, see Braga et al. (2019).

<sup>6</sup>Ex ante, the effects of these treatments are not obvious. On the one hand, undercover police patrols could be expected to identify more cases of harassment because officers can move without being noticed, which would lead to larger incapacitation effects. In addition, undercover policing could also lead to a deterrence effect if potential perpetrators observed undercover police removing criminals. However, it is less likely that citizens could observe police behavior in the undercover arm since officers do not want to reveal themselves, making their performance less salient to citizens. Uniformed patrols, on the other hand, would have larger deterrence effects since criminals would observe police activity. Moreover, if victims and

in an environment of frequent harassment where it could be challenging to arrest all perpetrators, given the large number of cases and social tolerance toward street harassment. At the same time, by making police visible, the design allowed us to study how officers' characteristics, such as attitudes toward harassment, matter when citizens can observe their behavior.

To overcome key measurement challenges, we developed a novel observation-based measure of harassment. Female enumerators roamed hotspots and spillover areas to record on their phones observational counts of victims, instances of sexual harassment, and how women responded to harassment, both when officers were patrolling and when they were not. Using the same protocol that HCP provided *SHE Teams* officers, we trained these enumerators to identify mild to severe cases of harassment. Mild harassment consisted of unwelcome comments, catcalling, whistling, inappropriate gestures and facial expressions, taking photographs without consent, and ogling. Severe offenses included stalking, forceful touching/groping, intimidation, indecent exposure, physical abuse, and abduction.<sup>7</sup> This observational exercise addressed several challenges in the literature associated with measurement, including stigma (enumerators recorded harassment that *other* women faced), reporting issues (these accounts were not official, so there was no cost to reporting), and experimenter demand effects (the enumerators were unaware of the intervention). Moreover, police officers were also unaware of the enumerators' exercise.

Using our observational measure of street harassment, in the RCT we find that uniformed police patrols reduced severe forms of street harassment by 27 percent, on average five fewer women were victimized per week per hotspot. In particular, we find a large reduction in groping/touching and intimidation. In contrast, hotspots with undercover police patrols experienced no reduction in street harassment relative to the control group, despite the fact that undercover police issued more sanctions and warnings. Results are robust to including week, enumerator fixed effects, controlling for outcomes at baseline,

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bystanders observed police activity, this could change their behavior as well since they might find it easier to report the harassment they experienced or witnessed.

<sup>7</sup>We made this distinction based on the Indian Penal Code (IPC) and conversations with several Indian Police Service officers. In particular, the IPC also includes heinous offenses such as rape that are not observed in our data. We provide more information on the IPC in Table A1 in the Appendix.

and multiple hypothesis testing.

These results highlight the importance of police visibility to deter perpetrators given the large number of harassment incidents. Consistent with our design, while we find that undercover police had larger incapacitation effects, only uniformed policing reduced severe harassment. We also find that incapacitation effects alone were too small (relative to the number of incidents) to account for the observed decline in street harassment. On average, officers sanctioned or warned 5-8 percent of these incidents. These results suggest that our effects emerged not only from the removal of criminals from the crime scene but also from behavioral changes by offenders who updated their responses based on encounters with visible police. In fact, we observe that the incidence of street harassment declined after the increase in visible action by uniformed officers.<sup>8</sup>

As a result of the drop in severe street harassment, we find that women's behavior was less constrained by safety concerns. Using our observational measure, we find that in hotspots with visible police patrols, women were 30 percent less likely to move elsewhere in response to harassment. This result suggests that constraints on women's mobility will ease if police officers can lower even the upper bound of incidents (severe forms of sexual harassment). Most importantly, we do not find that results emerge from a change in the composition of women or perpetrators at these hotspots. In particular, we find no changes in observable characteristics (such as age or clothing) of women and perpetrators in treated hotspots.

Next, to better understand how social acceptance of public sexual harassment relates to its incidence, we used surveys and lab experiments to collect individual measures of police officers' attitudes and performance regarding harassment as well as citizens' views of these crimes. These data allowed us to understand how police and citizens' attitudes interact with the efficacy of increased police patrols according to the severity of the harassment. In particular, we exploited the random composition of *SHE Teams*, which provided

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<sup>8</sup>Even though officers could sanction only a small share of incidents, their salient performance in uniformed hotspots could change perpetrators' behavior through learning that police targeted sexual harassment. For example, at the moment of the arrest, officers in uniform told the public the reason for the arrest or warning and made citizens aware that *SHE Teams* were targeting street harassment cases.

heterogeneity in team attitudes regarding harassment. For the lab experiment data, we invited 354 HCP officers (including participants in our intervention) to attend a one-hour lab session at the headquarters. During this session, we showed each officer nine videos depicting sexual harassment and other types of crimes. The videos mimicked real life events that officers encounter on patrol.<sup>9</sup> After each video, police officers answered a short survey related to their propensity to punish or tolerate these crimes.

Using the lab experiment and survey data, we highlight the critical role of police officers' attitudes in suppressing the incidence of sexual harassment. While visible policing proved effective in reducing severe forms of harassment, it fell short in addressing milder forms due to police officers' tolerance of such offenses. Our lab experiment results show that police officers were less likely to think mild harassment should be addressed and/or punished relative to other offenses. Consequently, we find that their willingness to sanction mild harassment offenses vs. other types of crimes was, on average, lower. This finding underscores the pressing need to address biases and attitudes within law enforcement, as they significantly impact officer performance and concomitantly, the efficacy of policies aimed at combating crimes like sexual harassment.

Consistent with these results, we find in the field that hotspots experienced a decrease in all types of sexual harassment when they were patrolled by officers with harsher attitudes toward harassment. However, we do not find any differential effect in hotspots where women had more progressive norms at baseline. These results seem to suggest that the drop in severe harassment stemmed from deterrence due to police presence and punishment, while the absence of a similar decline in mild offenses emerged from greater police tolerance of the latter and thus, fewer penalties for those who committed them.

We examine additional mechanisms through which street patrols might reduce severe harassment while not impacting mild cases but find no evidence to support them. In particular, we rule out effects tied to a lack of detection and reporting, as well as displacement effects to nearby areas. First, using lab evidence, we find police officers were able to de-

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<sup>9</sup>To do so, we created scripts from reports made to *SHE Teams* and used CCTV footage for research purposes.

tect mild harassment even when these offenses occurred quickly and in crowded areas. Second, when linking the exact location of reported crimes to hotspots, we do not find an increase in victims' harassment-related calls to police in treated hotspots. Third, we find police patrols neither displaced crime nor resulted in a substitution effect among crimes. Finally, we do not find evidence of changes in footfall in hotspots or spillover areas (i.e., other public space areas located 200m and 500m from a hotspot).<sup>10</sup>

Our findings have several policy implications. Our results highlight the role of visible police presence and action in reducing frequent public sexual crimes and in effectively allocating limited police resources. We show that even though police officers increased notices, warnings, and arrests for harassment incidents, the incapacitation effects alone were too small to explain a drop in harassment. This implies that any direct effect of *SHE Teams* came from deterrence. In addition, the results illustrate the challenge of addressing urban sexual harassment, especially milder forms, through policing due to officers' attitudes toward these crimes. Therefore, for any such intervention to succeed, one must contend with the social attitudes that govern police behavior.

This paper contributes to several strands of literature, including the nascent literature on sexual harassment. In the context of developing countries, street harassment has been associated with adverse economic outcomes for women, affecting their travel costs (Kondylis et al., 2020), higher-education outcomes (Borker, 2021), and labor force participation (Field and Vyborny, 2022; Siddique, 2018; Cook et al., 2021).

We complement this work in several ways. First, we develop a new measure of sexual harassment based on observations done by enumerators in the field. In particular, our observed measure provides real-time measures of street harassment and women's responses that are not subject to reporting biases, as previous literature has shown is particularly the case for sexual harassment (Boudreau et al., 2023; Dahl and Knepper, 2021). Second, we also complement the literature on street harassment by providing experimental evidence on how sexual harassment affects women's responses to harassment, overcoming endogeneity concerns associated with the location and timing of harassment. In particular, we

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<sup>10</sup>On average, enumerators observed 67 (standard deviation of 107) people per visit to a hotspot.



show how harassment negatively affects women's behavior while commuting. The reduction of constraints on women's physical mobility is a key outcome as recent evidence shows it may translate into changes in female labor force participation (Cheema et al., 2019; Field and Vyborny, 2022). Third, while most of the previous research has focused on the consequences of street harassment, we shed light on the factors that contribute to the incidence of street harassment. In particular, we provide new evidence that street harassment can emerge from social norms interacting with law enforcement. Notably, we demonstrate that street patrols to target harassment only succeed when officers personally endorse the norms they are responsible for upholding on duty.

Fourth, we add to a better understanding of the policies that can reduce street harassment. Related recent work has shown how access to women-only transportation can boost job applications from women by potentially improving their safety (Field and Vyborny, 2022). We complement this research by assessing a policy that directly targets perpetrators and sexual harassment cases.

More broadly, our findings also complement the work on policing and crime as well as research on the role of officer attributes in improving job performance. Police patrols have been found to be effective in reducing crime (Blattman et al., 2021; Di Tella and Schargrodsy, 2004; Draca et al., 2011). Scholars attribute the success of such interventions to the lessons citizens learn from encounters with the police and the updating of perpetrators' beliefs about the probability of detection and punishment (Banerjee et al., 2019). In line with these results, we find evidence that citizens learned from police officers' visible actions that law enforcement could punish sexual harassment. We also complement this research with novel evidence on the effectiveness of different types of policing, with a focus on police attributes. We examine little-studied street harassment and consider the role of police presence by varying officer *visibility* and *attitudes*, which researchers have not previously considered. Relatedly, current research on policing focuses on increased autonomy (Banerjee et al., 2021), building trust between citizens and officers (Blair et al., 2021), addressing police cognitive demands (Dube et al., 2023), and officer attributes like race



and gender (Ba et al., 2021; Miller and Segal, 2019).<sup>11</sup> However, little work assesses the effects of individual beliefs and group norms on bureaucracies (Khan, 2021). We contribute new evidence to this area on how police tolerance of certain crimes affects the punishment of offenders and how team attitudes and implicit bias influence crime response.

## 2 Background

This section presents an overview of street harassment in Hyderabad using descriptive survey evidence on the high occurrence of street harassment. We also describe the *SHE Teams* intervention.

### 2.1 Street Harassment in Hyderabad

Hyderabad, the capital of Telangana state, is the fourth-largest city in India, with a population of 6.9 million and a metropolitan area that serves 9.7 million inhabitants (GOI, 2011). Within the city, Hyderabad City Police (HCP) provide local law enforcement and operate under a police commissionerate system.<sup>12</sup>

As is the case in most urban centers around the world, street harassment is a major problem in Hyderabad. According to our baseline survey of 8,264 women, approximately 29 percent had experienced some form of street harassment during the previous month.<sup>13</sup> These incidents affect women’s perceptions of safety; only 25 percent of those surveyed reported feeling safe when moving around the city after 4 PM. In response to such harassment, 87 percent of women reported taking precautionary measures. These included traveling in a group, dressing modestly, and avoiding certain areas. As explained above,

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<sup>11</sup>Specifically for violence against women, women’s increased access to police relates to reductions in the incidence of gender violence (Sviatschi and Trako, 2021; Blair et al., 2019), while female representation in law enforcement corresponds to greater reporting (Amaral et al., 2021a; Cooper, 2019) and improved legal action (Sukhtankar et al., 2022).

<sup>12</sup>Police commissionerate systems are headed by a commissioner from the Indian Police Service. Commissioners have more independence and discretion in managing the police than in other police systems, and they are accountable only to the state government and the state police chief.

<sup>13</sup>It is worth noting that only 2 percent reported property offenses in public spaces in the previous month. This included the snatching of items such as chains, purses, phones, etc., and pickpocketing/theft.

harassment ranges in severity from glances that make women feel uncomfortable to groping, abduction, and physical abuse.

Sexual harassment offenses are covered by the HCP Act of 2011, and penalties are governed by relevant legislation of the Indian Penal Code (IPC).<sup>14</sup> First-time sexual harassment offenders are registered and face penalties including 10 days of imprisonment, fines up to INR 1,000 (US\$ 12.15), and mandatory counseling. *SHE Teams* maintain a registry of all offenders. More serious and repeat offenders may face between three and seven years of imprisonment, depending on the offense. In Appendix Table A1, we provide a description of the relevant legislative penalties per offense.

In practice, *SHE Teams* use two tools depending on the severity of the incident and the evidence available to officers on patrol—sanctions and warnings. For red-handed cases (when caught in the act), perpetrators are punished according to the type of offense. For example, if the perpetrator is caught stalking a woman and sufficient evidence is available (in the form of a recording and/or a victim complaint), he would be arrested and eventually taken to court. In a case with evidence that is insufficient to stand in court, the officer would give the offender a notice and issue a warning. These different tools are used at the discretion of the police. Importantly, once a warning or sanction is issued, police officers must immediately take the perpetrator to the police station. Finally, officers can also deter crime through their own behavior on patrol and by approaching citizens and potential perpetrators.

## 2.2 The *SHE Teams* Program

In 2014, HCP launched *SHE Teams* in response to growing concerns about women’s safety following the national public debate sparked by the notorious 2012 gang rape and murder of a young woman in Delhi. The main goal was to improve women’s safety in public through a zero-tolerance approach to sexual harassment.

*SHE Teams* comprise police officers from HCP. Officers are assigned to this task force

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<sup>14</sup>For more details on the Act, please refer to [HCP \(2011\)](#).

for approximately six months. Once they begin their assignment, they receive formal training about street harassment, how to identify and respond to it, the penalties for these crimes, and their patrol duties. After completing their assignment, they typically return to their original posts. At the police station, *SHE Teams* officers track police report data, social media, and calls made to HCP's "Dial 100" helpline using a dashboard system, which they also use to maintain an offender registry.<sup>15</sup> Based on this data, officers conduct patrols at bus stops, colleges, shopping malls, and other locations where reports of harassment have surged. Patrols are composed of teams of 3 officers, including one female officer and one senior rank officer. Prior to our intervention, *SHE Teams* had been operating on a small scale and at low intensity.<sup>16</sup>

Before we partnered with HCP, *SHE Teams'* main strategy had been to patrol with undercover officers who rotated across different hotspots. HCP thought undercover policing was an effective way to reduce sexual harassment by detecting and sanctioning perpetrators. Their policy objective was to maximize arrests and remove the greatest number of sexual offenders from the streets. Given this goal, undercover police did not want to "blow their cover" at the moment of sanctioning a perpetrator. As a result, their actions were less salient to citizens.

In 2018, due to growing interest in *SHE Teams* from other national police forces and HCP's intention to expand the program, the city was motivated to understand the effects of *SHE Teams* before scale-up. With this in mind, we designed our study to evaluate their program at scale and test how the visibility of patrolling officers and their tolerance toward sexual harassment affected its incidence. We wanted to learn which type of patrol was most effective and to understand how the behavior of police, citizens, and offenders interacted with the incidence of harassment. Since these crimes are socially accepted and frequent, we wanted to test whether visible policing could reduce the incidence of harassment by deterring potential perpetrators. Do we need a visible police officer to deter with their visible actions and attitudes toward harassment or do we just need police to be un-

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<sup>15</sup>"Dial 100" is the official police helpline number in India. In Hyderabad, it connects to HCP's helpline.

<sup>16</sup>In 2018, this force consisted of approximately 10 patrol teams.

dercover and maximize arrests? The answer to this question is not obvious. Notice that if perpetrators are just a few individuals, undercover policing could be more effective by maximizing the number of arrests, but if incidents are committed by many, we may need a lot of police effort and arrests to be able to incapacitate all, and thus deterrence effects could become more relevant.

### 3 Experimental Design

In this section, we describe the randomized experiment and the data collection process. We then outline our empirical model and present results on randomization, balance, and compliance.

#### 3.1 Intervention and Design

We use a clustered randomized experiment to identify the effects of uniformed and undercover policing on observed street harassment. HCP identified 350 public spaces and 700 adjacent areas (locations within a radius of 200m and 500m of the hotspot). The 350 public spaces are under HCP's jurisdiction and had to meet two criteria: (i) high rates of reported street harassment, and (ii) being identified as hotspots that were not previously targeted by the program. Importantly, these 350 hotspots covered the universe of street harassment hotspots that were not previously covered by *SHE Teams*.

We randomized the 350 hotspots into three groups. The first group consisted of 100 hotspots patrolled by *SHE Teams* officers wearing official HCP uniforms. The second group was made up of 100 randomly allocated hotspots patrolled by undercover *SHE Teams* officers in plain clothes. The third group was the control group: it comprised 150 randomly allocated hotspots with no *SHE Teams* patrols for the duration of the study.

On average, patrol teams included three officers with one female officer and one senior rank officer. During the 24 weeks of the intervention study period, the *SHE Teams* operated with 72 officers and 17 patrol vehicles. Every Friday, officers received their schedules of the shifts for the following week. The *SHE Teams* coordinator and the research team

planned daily schedules for individual officers a week ahead of the scheduled patrol. Upon arrival at the *SHE Teams* office every day, officers were allocated to a team, and a team leader was assigned based on rank. Individual officers were randomly allocated to teams by day and shift (i.e., morning or afternoon). They also received the list of areas to cover that day. Importantly, the same officers could alternate across arms, meaning that they could be in undercover hotspots one week but in uniformed hotspots another week. Patrols took place across treated hotspots between 8 a.m. and 8 p.m.<sup>17</sup> Each team spent 15–20 minutes at a given hotspot; hotspots were patrolled, on average, three times per week. On average, police patrolled each hotspot for a total of 45 minutes per week (compared to a baseline of zero). Patrols are exogenous to the time or day of the week.

### 3.2 Randomization

To account for key factors that affect the degree of street harassment in Hyderabad, we stratified the randomization across the 350 hotspots. We based the stratification on two criteria that best characterize a public space: (i) footfall (the observed number of people at a location), and (ii) type of public space. First, we measured footfall using data collected from the baseline Enumerator Observation Survey (EOS) and women’s survey. Hotspots were categorized as low, medium, high, and very high pedestrian activity.<sup>18</sup> A footfall of fewer than 30 individuals is considered low; between 30 and 150 is medium; between 150 and 400 is high, and anything above 400 is very high. Second, for the type of public space, we use four categories: educational hotspots (near schools and colleges); general hotspots (in or near markets and temples); residential hotspots; and commuter hotspots (at or near bus stops and railway stations). In Table A2, we provide an overview of the hotspots by the categories used for stratification.

We completed the randomization using a total of 2,000 iterations over 57 key variables from the baseline survey, which includes women’s observable characteristics such as age,

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<sup>17</sup>In practice, the 24 teams patrolled during morning or afternoon shifts.

<sup>18</sup>This categorization was based on the average classification by enumerators when conducting the baseline women’s survey and EOS. Since surveys were conducted at the same time as the patrols used in the intervention, this categorization reflects the average footfall activity of an area.

education level, occupation, marital status, mode of transportation, victimization rates, perception of safety, and precautionary measures. Table A3 shows that the two treatment groups and the control arm were balanced across these characteristics. We also show that, before the intervention began, treatment and control hotspots behaved similarly in terms of harassment, safety, and hotspot time-varying characteristics, including footfall. The randomization also determined the treatment exposure condition for spillover areas located within a 200m and 500m radius from the hotspots. In Tables A4 and A5, we show that the spillover areas were comparable across treatment and control groups.

### 3.3 Data

Our study relies on three datasets. We break new ground in measuring sexual harassment in public spaces using our EOS. This dataset provides real-time measures of street harassment and women’s responses to harassment. Free from reporting bias and stigma, the EOS records harassment observed by enumerators in the field across treatment and control hotspots. This measure is also imperceptible to commuters, and double-blinded across police officers and enumerators. Second, to understand the mechanisms behind the effects, we have administrative data on police officer performance as well as our own survey and lab experiments with officers to measure attitudes toward harassment. Finally, to understand victims’ behavior, we exploit administrative data from calls received by the police.

**Enumerator Observation Survey.** It is exceptionally difficult to measure and track harassment over time and space. For example, official data on harassment in India exists at the National Crime Records Bureau, but it has serious limitations: it is available only at the district level and on an annual basis, and it is based on reported data. Survey data, while of higher frequency and more disaggregated, suffers from reporting bias in direct-question surveys and because of the different ways people perceive harassment (Saguy and Rees, 2021). To address these measurement challenges, we developed the EOS to measure sexual harassment of women in public spaces.

We recruited 173 enumerators to observe hotspots and spillover areas throughout Hy-

derabad. Using the same curriculum as *SHE Teams*, we trained enumerators to record (discreetly on their phones) the number of instances and types of sexual harassment at different locations.<sup>19</sup> Enumerators were asked to observe the hotspots and spillover areas where they were assigned for 15–20 minutes and to record on their phones the total number of victims, the different forms of victimization, and any subsequent actions taken by victims, bystanders, and police. Each enumerator observed six hotspots per day. On average, enumerators visited hotspots once per week for 16 minutes per visit.<sup>20</sup> Routes and locations were randomly assigned to each enumerator on a daily basis. Enumerators were blind to the intervention and treatments, and they could not be distinguished from the general public. Researchers audited this exercise and determined that passersby would not notice the enumerators. *SHE Teams* were also unaware of this exercise.<sup>21</sup>

The EOS took place over 28 weeks: four weeks before the intervention started and overlapping for 24 weeks with the intervention. Our data includes 24,669 enumerator observations recorded at treated and control hotspots as well as in spillover areas. For every observational visit, we coded the total number of victims and harassment instances they faced, and whether or not victims, bystanders, or police took any action. We constructed a measure for the weekly rate of observed harassment as the total number of observed victims by type of harassment divided by the number of enumerator visits per week. Figure A1 in panel (a) shows the distribution of harassment across the city as measured by the EOS at baseline.

Table 1 shows the distribution of sexual harassment crimes by category. During the intervention, enumerators spotted about 10,843 incidents related to street harassment. Approximately 75 percent of the cases are related to mild forms of sexual harassment, and 25 percent are severe incidents which mostly include touching and groping.

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<sup>19</sup>Following evidence from criminology and sociology (Madan and Nalla, 2016), we took into account that harassment varies extensively in severity and victims perceive severity differently. Therefore, we present results for overall harassment and by type of harassment.

<sup>20</sup>This duration is similar in frequency and duration to the police patrol exercise.

<sup>21</sup>Enumerators were replaced three times during the study to mitigate concerns about fatigue and bias. Each batch of enumerators numbered 15–20 people. In Appendix A, we discuss additional procedures that were put in place as well as ethical considerations.



Table 1: Street Harassment in Hyderabad

Type	Frequency	Percent
<b>Mild Incidents</b>		
Unwelcome comments/catcalling/whistling	1,472	13.58
Inappropriate gestures or facial expressions	2,046	18.87
Taking pictures without consent	343	3.16
Starring/ogling	4,307	39.72
<b>Severe Incidents</b>		
Indecent exposure	234	2.16
Stalking	324	2.99
Touching/groping	1,792	16.53
Intimidation	315	2.9
Physical abuse	10	0.09
Abduction	0	0.00

*Note:* The table shows descriptive statistics on sexual harassment from EOS.

**Validity of the EOS.** The harassment measure based on the EOS has multiple advantages. First, it tracks changes in harassment over time and space, an important and innovative feature enabled by daily observations of enumerators. This frequency boosts the potential to identify the intervention’s short-term effects. Second, the EOS was separate from the experiment since enumerators were blind to the treatment assignment, and officers and citizens were unaware of the enumerator observation exercise. This made it possible to obtain an accurate and unbiased account of the treatment effect.<sup>22</sup> Consistent with this, Figure A2 in Appendix A shows that EOS visits and the duration of observation were not related to the treatment assignment of a hotspot/spillover area. Moreover, the timing of visits was uncorrelated with the treatment assignment (see Figure A3).<sup>23</sup> Third, reporting effects—a challenge to address—did not impact the EOS.

<sup>22</sup>It is worth mentioning that uniformed *SHE Teams* officers are indistinguishable from other police task forces. Therefore, enumerators did not associate *SHE Teams* patrols with the observation activity since the police presence appeared typical.

<sup>23</sup>Figure A3 shows the number of visits by the enumerators from 8 a.m. to 2 p.m. and from 2 p.m. to 8 p.m., by treatment arm. These time ranges take into account when most of the travel takes place by men (peak hours) and women (off-peak hours).

**Police Reports.** To measure citizens’ willingness to report an offense to the police, we used incident-level information on all complaints reported to HCP’s “Dial 100” helpline for 43 weeks—16 weeks before the intervention and 27 weeks during the intervention. “Dial 100” calls are the most common way to seek an emergency police response across India, including Hyderabad, so this was our measure of citizen reporting behavior at the hotspots.<sup>24</sup> For each call, the responder collected information on the type of incident, the location of the incident, and the date of the call. We geocoded the location of each complaint and mapped it to the nearest hotspot to create a measure of unique calls made from hotspots in a given week. We gathered information on calls reporting crimes against women (including street harassment and other crimes) that we used to test for potential spillovers of the intervention across crime types. Our main dataset consists of calls from 350 locations over 27 weeks and data from 16 weeks prior to the intervention. Figure A1 shows the harassment reports received via “Dial 100” calls. These align closely with the incidents recorded in the EOS dataset shown in panel (a).

**Police Patrols, Routes, Shifts, and Performance.** To measure police compliance with the treatment and to assess subsequent police performance, we constructed the following variables. First, we used a weekly measure for total patrols in a hotspot and their duration (in minutes). To create these variables, we used GPS tracking data for each vehicle that the police team traveled in (each patrol team traveled in its own vehicle).<sup>25</sup> We mapped the routes and the parking time of each vehicle at the hotspots to create dummies for hotspot visits. We calculated the duration of a patrol from the number of minutes a vehicle’s ignition was off in the vicinity of a hotspot.

Additionally, we had information on total actions taken by police—recorded as red-handed cases, and warnings issued—that teams attributed to any harassment incident identified during a patrol at a given hotspot. The data on visits and duration helped us test officer compliance with the intervention requirements, and the information on red-

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<sup>24</sup>“Dial 100” is an emergency response system similar to 911 in the United States. The average response rate in urban areas is estimated to be 5–10 minutes and satisfaction rates for the service are very high among victims of gender-based violence (Srinivas, 2020).

<sup>25</sup>On any given day, officers gathered with their teams at the *SHE Teams* office and began the patrols in their own assigned vehicle. Each team leader received a list of hotspots to cover during the shift.

handed offenses, and warnings serves as our measure of incapacitation.

**Police Officer Survey and Experiments.** We conducted a telephone survey with a cross-section of HCP officers to ask questions about the officers' employment history with HCP; their views on policing, sexual harassment, and *SHE Teams*; and their own perceived skills, job motivation, and demographic information. We sent officers a letter that informed them of our collaboration with HCP and invited them to participate in a thirty-minute survey of interest to HCP. Officers were reassured participation would be anonymous, so none of their colleagues would be able to access (or identify) their responses. Next, we called them to arrange a convenient time to conduct the survey. We surveyed all officers who ever worked with *SHE Teams*—including all those who participated in our intervention—and all non-*SHE Teams* officers who worked in the same police stations and held the same rank as *SHE Teams* officers before the latter joined the task force. Our final sample consisted of all *SHE Teams* officers and 226 other HCP officers.

To conduct the lab experiments, we sampled police officers in two steps to have the largest sample possible. First, we invited all *SHE Teams* officers. Next, from the pool of officers who had previously completed the survey, we sampled officers who had been involved in non-*SHE Teams* patrols during the same period as the intervention. We did this to identify officers who conducted similar tasks to *SHE Teams* personnel. Our final sample of officers who attended lab sessions numbered 354 participants. We invited them in groups of 10 for one-hour sessions. We combined officers from different task forces and police stations in the same sessions.<sup>26</sup>

**Timeline.** Figure A5 shows the four-year study timeline from 2018 to 2021. Qualitative interviews, engagement with the police, and scoping work began in the summer of 2018. Next, the baseline women's survey and the baseline EOS exercise took place between August and September 2019. After enrolling *SHE Teams* officers in the task force and randomly assigning teams to hotspots and their respective spillover areas, the intervention began in mid-September 2019. As planned, it stopped after 24 weeks. During this period, the EOS exercise occurred across the 350 hotspots and 750 spillover areas. After

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<sup>26</sup>In Appendix B.III, we detail the lab protocol and safety and ethical procedures we followed.

pandemic stay-at-home orders ended in Hyderabad, the lab experiments with the officers followed, between March and April 2021.

**External Validity.** The intervention’s external validity—specifically the fact that *SHE Teams* officers could differ greatly from other HCP officers—is an important concern. *SHE Teams* officers are older and more likely female than their HCP counterparts. However, these differences between *SHE Teams* and other patrol teams are that, by design, *SHE Teams* have at least one female officer and a larger share of higher-rank officers relative to other patrol teams. Moreover, officers are assigned to *SHE Teams* from a sample of about ten thousand officers across all police stations in Hyderabad, and officers do not select into *SHE Teams*. Nevertheless, in the lab experiment, we also test whether *SHE Teams* officers have different views toward harassment relative to other police officers and we do not find evidence that is the case.

**Pre-Analysis Plan Deviations.** Our empirical analysis deviates from the pre-analysis plan (PAP) due to COVID-19. We deviate from this plan in three ways. First, we specified four primary outcomes: (i) observed harassment, (ii) safety perceptions, (iii) female mobility and (iv) routes taken by women. Primary outcomes (ii)–(iv) required the completion of the women’s survey at the endline. However, the intervention ended at the start of the COVID-19 pandemic and the city of Hyderabad then implemented strict stay-at-home orders. For this reason, any pre-specified outcome measured at the women’s level through surveys is not displayed.<sup>27</sup> In terms of secondary outcomes, any that required the completion of a women’s survey were not collected due to the lockdown. For this reason, the paper does not address effects on labor outcomes and participation in social activities as pre-specified. While we ended up with only one primary outcome, which would make multiple hypothesis corrections misleading, we nonetheless conducted the pre-specified multiple hypothesis tests on severe and mild forms of harassment—the remaining pre-specified main outcomes that survived the pandemic disruptions.

The second main deviation pertains to the use of CCTV data to measure female mobil-

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<sup>27</sup>We attempted to conduct phone surveys with respondents at the endline, but that proved impractical because women were reluctant to respond to the survey due to the topic and since it was during COVID-19, husbands and family were at home.

ity, a primary outcome. Due to data storage restrictions (related to computer storage issues for the partner), information on CCTV was not stored for the period of the intervention. As a result, this data can no longer be used. Therefore, to understand women’s responses to harassment, we use EOS data. In the same line, when tabulating police reports—a secondary outcome—we do not use information on police walk-ins. We learned during the intervention that information regarding police walk-ins was not suitable for the project due to the lack of detail in criminal records and missing information concerning the geolocation of such crimes. As a result, we did not use this data.

Third, to understand the mechanisms, we exploit the heterogeneity by norms index which was pre-specified. In addition, we also used lab experiment data that was not in the PAP. In particular, we conducted lab experiments to understand the ability of officers to detect and punish mild harassment cases.

### 3.4 Empirical Specification

As outlined earlier, we randomized the 350 hotspots to one of three experimental arms: uniformed patrols, undercover policing (officers in plain clothes), and control. To compute direct treatment effects for each arm, we compared the average observed harassment at treated hotspots to control hotspots. To estimate spillover effects, we drew 200m and 500m rings around treated and control hotspots, and compared the rate of harassment victimization on streets in these areas.

We estimate treatment effects using the following equation:

$$Harassment_{hw} = \beta_0 + \delta_1 Uniformed_h + \delta_2 Undercover_h + X_{hw} + \gamma_s + \epsilon_{hw} \quad (1)$$

where the main dependent variable of interest is  $Harassment_{hw}$ , which represents the number of observed victims of a type of harassment per enumerator visit at each hotspot  $h$  in week  $w$ . The main independent variables are a dummy that takes the value of one if a hotspot was randomly assigned to receive patrols by uniformed officers and zero if the hotspot was randomly assigned to the control group. The difference between the uni-

formed arm and control arm is captured by the coefficient  $\delta_1$ . We also have a dummy that takes the value of one if the hotspot was randomly assigned to receive patrols by undercover officers. The difference between the undercover arm and control arm is captured by the coefficient  $\delta_2$ .  $X_{hw}$  is a vector of hotspot-week characteristics that includes dummies for whether the hotspot was affected by a public holiday or a bus strike in week  $w$ .  $\gamma_s$  are strata fixed effects and  $\epsilon_{hw}$  is the error term.

Standard errors are clustered at the hotspot level. We also correct p-values using the adjustments proposed by [Westfall and Young \(1993\)](#). We report the Family-Wise Error Rate (FWER), taking into account the two treatments, and p-values are obtained from 1,000 bootstrap replications to account for correlation across the different outcomes. We also report randomized inference p-values to account for the fact that hotspots in this urban context are not well-defined geographic areas. As a result, clustering the standard errors at the hotspot level could lead to a biased estimation of the intervention effect.<sup>28</sup> To address this concern, we present estimations for the main intervention sample and the spillover areas separately, and also present p-values obtained from randomly rearranging the treatment conditions and reestimating our coefficients of interest using the placebo assignment.<sup>29</sup>

A priori, we expect uniformed officers to have both a deterrence effect from visibly patrolling the hotspot and an incapacitation effect from issuing warnings, sanctions, or arresting the perpetrators. Since *SHE Teams* officers are dressed in regular police uniforms, we would expect that victims and perpetrators would not expect them to detect or penalize street harassment when they first appear at a hotspot. However, once they see visible penalties being imposed on perpetrators of street harassment and given the stickiness in how people travel, we expect that victims and perpetrators will learn over time about their regular travel location being patrolled by uniformed officers targeting street harassment incidents, and thus making it less likely for them to engage in harassment. Undercover officers on the other hand, would have no deterrence effects, given that they

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<sup>28</sup>This is a common concern in the literature when designs include estimations with treatment and spillover areas; see, e.g., ([Blattman et al., 2016](#)).

<sup>29</sup>We calculate randomized inference p-values using 500 random permutations.

are indistinguishable from regular citizens. We expect that they will have an advantage in incapacitation since they will be able to catch perpetrators in action, more easily.

### 3.5 Compliance and Police Patrol Performance

To illustrate officers' compliance with the intervention, Table 2 provides descriptive statistics on the number of times a hotspot was patrolled, time spent at the hotspot, and the number of warnings and sanctions issued at the location. We find police followed the guidelines and complied with the treatment. On average, officers visited each hotspot three times per week and spent about 15 minutes per visit. In addition, officers issued on average 0.02 warnings and sanctions per visit per week at each hotspot.<sup>30</sup>

Table 2: Descriptive Statistics on Patrolling Behavior

	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

*Note:* The table shows descriptive statistics on the total number of times a hotspot was patrolled, time spent at the hotspot, and the number of warnings and sanctions issued at the location. It further provides information on the duration, number of warnings and sanctions per patrol visit, as well as the number of victims per enumerator visit. Each observation is a hotspot-week combination. Data sources: Police vehicle GPS trackers.

Next, we study how officers' compliance with the intervention varied by treatment

<sup>30</sup>It is important to note that every week the Commissionerate Police (CP) talked to the SH teams about the importance of sanctions and warnings. Moreover, by the end of January, we had a meeting with the CP highlighting the importance of sanctions and warnings. Results are also robust to controlling for this event. Indeed, we observe larger effects on sanctions and warnings in the first months of the interventions and no effects after January 2020.



arm and estimate equation 1 on the time spent at the hotspot and the number of warnings and sanctions issued at the location. We show the results in Table 3. Column (1) shows that at uniformed hotspots, police officers spent less time per visit (about 12 minutes) than officers at undercover hotspots, who spent about 18 minutes per visit.

Columns (2)–(4) display an increase in the number of warnings and sanctions by police officers in both arms relative to the control group. Consistent with the theory that highlights larger incapacitation effects at undercover hotspots, we find that undercover officers issued a larger number of sanctions and warnings than visible police officers. This is because, unlike uniformed police officers, the presence of undercover officers does not directly deter crime and, thus, there might have been a greater number of incidents committed at these hotspots. Moreover, even when undercover officers make arrests, their activity is less salient to perpetrators because they are dressed as civilians. This finding could also explain the greater amount of time spent per visit per hotspot by undercover vs. uniformed officers. Since undercover officers could better identify perpetrators and thus issued more warnings and sanctions than uniformed officers, they spent more time at the hotspots. On average undercover police officers sanctioned 8.6 percent of cases.<sup>31</sup>

Overall, our results show that police officers complied with the assignment and increased the number of warnings and sanctions relative to the control group, where no officers were assigned.

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<sup>31</sup>On average these officers sanctioned or warned 0.041 cases and the number of victims per visit in the control group is 0.471.

Table 3: Effects on Patrol Duration, Warnings, and Sanctions per Visit

	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

*Note:* The dependent variables are patrol duration per visit and the number of police actions (sanctions and warnings) per visit. Each observation represents a hotspot-week combination. The regressions include fixed effects for strata. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and shown in brackets. Data sources: Police vehicle GPS trackers and *SHE Teams* administrative records.

## 4 Results

In this section, we present three main findings. First, while police patrolling had no impact on the aggregate measure of street harassment, we show that uniformed patrols were effective in reducing severe types of sexual harassment, thereby limiting the worst harassment in these areas. Undercover policing, on the other hand, did not reduce harassment in public spaces. These results highlight the importance of police visibility to deter some offenders and suggest that incapacitation effects alone were not behind the decline in severe offenses. Second, we show that due to the drop in severe harassment at hotspots patrolled by uniformed police, women civilians were less likely to be constrained by safety issues. We find that victims at these locations were less likely to avoid particular areas in response to harassment. Finally, we find no evidence of spillover effects on other forms of crime or to nearby areas.

## 4.1 Police Patrols and Street Harassment

Table 4 presents the effects of patrols on total street harassment and offenses by severity. While we find no effects on the aggregate measure, we find a 27 percent reduction in severe sexual harassment in locations patrolled by uniformed police (Column (2)). This is equivalent to five fewer women victimized per week.<sup>32</sup> However, we observe that uniformed policing had no effects on mild sexual harassment (Column (3)). We also find that undercover policing did not affect the incidence of any type of street harassment. These results are robust to the adjustment of p-values; different specifications such as the week, enumerator fixed effects, controlling for public holidays and bus strikes, and using the number of offenses per incident event—rather than the unique number of instances—as the main dependent variable (see Tables A6, and A7 in the Appendix). In Table A8 in the Appendix, we also do exploratory analysis to shed light on which type of cases within street harassment could be driving the results. We find that effects are driven by touching/ groping, and intimidation (which includes someone trying to hurt the victim).

**Deterrence and Incapacitation Effects.** Given that undercover police issued more sanctions than uniformed officers but only uniformed police had an effect on harassment incidents, we can infer that the effect of uniformed police patrols comes from the deterrence of criminals. This is not surprising given the results presented in Tables 2 and 3, which show that even when police officers issued warnings and sanctions in treated hotspots, these numbers were small relative to the total number of victims identified by enumerators each week. On average, enumerators observed 0.447 incidents per fifteen-minute visit per hotspot, but undercover police officers could sanction and warn in only 8 percent of these cases.<sup>33</sup>

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<sup>32</sup>On average there are 67 people per hotspot-visit and assuming a conservative estimate that 30 percent of these would be women (20), a 27 percent reduction would amount to five women less being victimized by severe harassment.

<sup>33</sup>One concern is that enumerators could detect sexual harassment incidents better than police officers. Several factors suggest this was not the case. First, similar materials were used to train enumerators and *SHE Teams*. Second, every *SHE Teams* patrol had at least one female officer. In addition, police patrols were composed of three people. This suggests that if anything, enumerators provided a lower bound of the total incidents since they represented only one person per visit. Third, in Section 5.1, we show that police officers, including *SHE Teams* members, could detect sexual harassment offenses most of the time. Finally,

The fact that police officers were undercover limited any deterrence effect that might arise from arrests. Since officers were undercover and did not want to reveal their identity while making arrests, it was difficult for citizens to assess this activity and perceive the issuance of warnings and sanctions. In contrast, when uniformed police did arrests, these were salient to citizens since officers would tell in public the reason for the arrest and promote to the rest of the citizens the role of *SHE Teams* officers on addressing sexual harassment. In fact, we corroborate this with enumerators' data and find that enumerators were more likely to observe police activity in uniformed hotspots than control hotspots, but we observe no differences in undercover hotspots.

To shed further light on whether the presence of uniformed police deterred perpetrators, we study the dynamic effects per month in Figure A6. We find that the effects materialized after the second month and remained significant until the end of the intervention. These results are consistent with our hypothesis that perpetrators learned over time about police presence and officers' attitudes toward harassment. Furthermore, we also find that arrests at uniformed hotspots were mostly concentrated in the first months and declined in the last months since perpetrators were already deterred by the presence of police officers. It is possible that police have larger effects over time since perpetrators learned that officers target these types of crimes. Offenders had observed uniformed police since month one, but over time they realized those officers were there to stop sexual harassment (see Figure A7). Moreover, the fact that decline is sustained months after the increase in sanctions, highlight that the effects could be sustained over time even if police officers are not present. In contrast, we do not find evidence of this pattern in undercover hotspots.<sup>34</sup>

Next, to evaluate if the reduction in harassment endured, we took advantage of the fact that on some days, police officers and enumerators were not simultaneously at the same

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enumerators were detecting harassment in the exact same conditions as officers in terms of crowds, lighting, etc.

<sup>34</sup>These results suggest that given a large number of incidents, in order to have short-term effects, we may need police visibility to deter perpetrators from committing these crimes in the first place. It is worth noting that if the policy objective is to maximize arrest and remove the largest number of perpetrators, undercover policing could offer a better way to achieve this. However, this could take more time in light of the large pool of perpetrators relative to the arrest rate.

hotspot. Using the times when police officers and enumerators overlapped, we analyzed the effects and found slightly larger effects (see Column (1) in Table A9 in the Appendix). However, we still observe significant effects in the times they did not overlapped, indicating that after a hotspot experienced uniformed policing, effects could persist even after the intervention ended. Moreover, we also analyzed the effects keeping only the weeks after the enumerators observed police action and effects are sustained (Column (2)).

**Displacement Effects.** In Table A10 in the Appendix, we study whether uniformed patrols reduced severe forms of harassment by displacing potential criminals to spillover areas. We show this was not the case since street harassment did not increase in spillover areas. In fact, we find that none of the treatment arms displaced harassment offenders to public areas within 500 and 700m from the hotspots. We also find that the intervention did not change footfall in hotspots or spillover areas (see Table A11). These results align with the high stickiness of commuting routes: at baseline, we find that 86 percent of individuals passed every day through the hotspots they were interviewed in. Therefore, since potential perpetrators pass through the same hotspot every day and it is costly to change their daily travel route, it is more likely they will be deterred by police visibility rather than displaced. Furthermore, since street harassment crimes are impromptu, offenders are less likely to change routes just to commit them. This result corresponds with the evidence presented in other settings (Braga et al., 2019). In general, displacement of crime is less likely to occur for expressive offenses such as violent crimes.<sup>35</sup> One potential concern is that perpetrators could move to other hotspots that we are not able to measure. However, this is not the case as in our 350 hotspots we covered the universe of sexual harassment hotspots. Moreover, we do not believe that harassment could move to non-public spheres since most of the perpetrators are unknown to victims.

**Reporting Effects.** Could a change in reporting behavior explain the reduction in severe sexual harassment? A more visible police presence could impact citizens' willingness to report an offense both as victim and bystander. Victims of and witnesses to street ha-

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<sup>35</sup>Experimental evidence on crime displacement is mixed because displacement depends on the type of crime, location, and policing strategies (Banerjee et al., 2019).

rassment could be influenced by the intervention if, for example, police presence and their interactions with the public improved their opinions about the police. This consequently might lessen the stigma women experience in reporting sex crimes to law enforcement.

Since calls to “Dial 100” are the most common way to summon emergency police response in Hyderabad, we rely on this data to measure the impact on reporting behavior. To test the effect of the intervention, we compared the rate of calls across hotspots. We estimated the model using equation 1, in which the main dependent variable is the sum of calls to report sexual harassment from hotspot  $h$  in week  $w$ . We present the results in Table A12. We find no evidence that increased uniformed or undercover police presence changed the willingness of victims or bystanders to report sexual harassment. This result indicates that victim-driven change in the probability of reporting sexual harassment does not explain the changes that occurred in severe harassment when police were visible.<sup>36</sup>

We also observe no effect of police presence on other crimes (see Table A13).<sup>37</sup> This result is consistent with the fact that *SHE Teams* police officers did not target these other forms of crime. This result provides some evidence that other forms of crime did not increase in patrolled areas by *SHE Teams*.

Finally, we also analyze whether the effects were driven by hotspots where female commuters showed less tolerance of sexual harassment. If the effects were driven by a change in bystander behavior, we would expect larger effects in hotspots where citizens responded more harshly to street harassment at baseline. To do so, we constructed a gender attitudes index and interacted it with our main treatments. Table A14 shows that effects do not seem to be driven by hotspots with attitudes more supportive of women at baseline. These results provide further evidence that effects are not due to changes in the behavior of victims or bystanders.

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<sup>36</sup>This finding—combined with our main result, a decrease in the incidence of harassment—suggests that the propensity to file police reports might have increased. This result is in line with the findings of [Dahl and Knepper \(2021\)](#); [Amaral et al. \(2021a\)](#); [Sukhtankar et al. \(2022\)](#).

<sup>37</sup>There might be a concern that gender-based and non gender-based violence have a different probability of reporting and that this could have been affected by the treatment itself. For this reason, we also display effects by different types of non-gender based violence offenses. For instance, accidents and property offenses are more likely to be reported to the police and thus be close to incidence rates.

Overall, our results suggest that the decline in severe sexual harassment occurred because uniformed police officers not only incapacitated offenders but also deterred potential ones. What remains unclear, however, is why visible police officers did not have an effect on mild sexual harassment. In section 5, we study other possible mechanisms, such as police attitudes regarding these crimes, behind the lack of effect on mild sexual harassment.



Table 4: Effect of Police Patrols on Street 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

*Note:* The main dependent variable is the rate of harassment observed in a hotspot-week. This measure is the ratio of identified victims of severe or mild sexual harassment and total enumerator visits for a hotspot in a week. Severe victimization includes victims of stalking, forceful unwanted touching/groping, intimidation, indecent exposure, physical abuse, and abduction. Mild victimization consists of victims of unwelcome comments/catcalling/whistling, inappropriate gestures and facial expressions, taking photographs without consent, and ogling. Total harassment victimization is the sum of the number of victims of severe and mild forms of harassment. In Column (1) we present the rate per total harassment and in Columns (2) and (3) we display the rate by severe and mild harassment, respectively. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Randomized inference p-values are displayed in squared brackets. Westfall-Young adjusted family-wise error rate p-values are in curly brackets. Data source: Enumerator Observation Survey.

## 4.2 Does Street Harassment Affect Women’s Response to Harassment?

In this section, we examine whether a decrease in severe harassment at visibly patrolled hotspots reduces women’s response to harassment. At baseline, we observed that more than 50 percent of women responded to harassment by moving to another area. Moreover, over 80 percent of women took precautionary measures and such choices have been shown to be costly (Borker, 2021). Can *SHE Teams* alleviate such constraints on women’s response? To answer this question, we used EOS data in which enumerators observed women’s actions in response to harassment. We defined as an outcome variable a dummy indicating whether enumerators observed women moving to another block, fleeing from perpetrators, or avoiding certain areas within the hotspot.<sup>38</sup>

Table 5 shows that in uniformed hotspots, enumerators observed a lower rate of women moving to a safe location within the hotspot due to harassment. In particular, uniformed policing improved women’s behavior, making them less likely to leave a location due to sexual harassment. These results are robust to directly using the number of women who moved instead of the share of women, as well as imputing zero to the hotspot-weeks with no victims (see Table A15).

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<sup>38</sup>In the original design, we intended to administer an endline survey to quantify the intervention’s effects on female labor force participation, but we were unable to collect this data due to the COVID-19 pandemic.

Table 5: Street Harassment and Women’s Mobility

Share of Victims Moving Location due to Sexual Harassment in Public Spaces		
	Severe	Mild
Uniformed	-0.061** (0.031)	0.027 (0.021)
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

*Note:* The main dependent variable is the share of women observed by enumerators who moved to another block, fled, or avoided an area within the hotspot in response to severe and mild harassment. We present this variable for victims of severe harassment in Column (1) and for victims of mild harassment in Column (2). Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey.

To further understand whether these changes in women’s mobility are due to the decline in severe sexual harassment, Table 6 analyzes the relationship between the rate of severe harassment over total offenses and the probability of moving to another block. Consistent with the idea that uniformed policing would make hotspots safer, we find that hotspots with lower cases severe harassment (safer hotspots), women were less likely to move. These results are consistent with qualitative evidence highlighting that as women feel safer, they believe harassment is less likely to escalate because police officers will intervene. Results are robust to instrumenting the rate of severe harassment by the presence of uniformed police. Overall, these results suggest that uniformed policing generated a change in attitudes among women by making them less reactive to harassment as the hotspots became safer. In the Appendix in Figure A8, we also consider whether women

substituted police response for autonomous action such as asking bystanders for help or confronting the perpetrators themselves. We find no evidence of it.

**Compositional Effects.** In Table A16, we also analyze to what extent these effects were driven by changes in the composition of women at these hotspots. Using EOS data on the observable characteristics of women, we do not find differences in their age, skin tone, or whether they wore western clothes.<sup>39</sup> In addition, we analyze whether a change in the type of perpetrator could explain results. Table A17 analyzes the effects using EOS data on the age of the perpetrator and whether the perpetrator knew the victim.<sup>40</sup> We find no changes in these characteristics, providing evidence that results are due to changes in victims' response to harassment and not due to differences in the type of victim or perpetrator. The lack of composition effects is consistent with the fact that most victims and perpetrators were daily commuters with sticky daily travel routes.

Overall, these results demonstrate how street harassment is likely to limit women's urban mobility and how these constraints might be alleviated if policies could reduce even the lower bound of incidents (severe). In the next section, we study whether police attitudes toward harassment can affect these outcomes.

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<sup>39</sup>While we believe how a woman looks and dresses should not have a bearing on whether she is harassed, these features are often raised as precipitating factors.

<sup>40</sup>For example, one potential concern is that uniformed policing might have deterred only perpetrators who were unknown to the victim, and therefore only perpetrators who knew the victims continued to harass them. Consequently, any change in women's reactive behavior could relate to the familiarity they had with the perpetrator and not to relaxed safety constraints.

Table 6: Womens' Mobility and Severe Sexual Harassment Rates

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

*Note:* The main dependent variable is the share of women who moved location as a response to severe sexual harassment; namely, the ratio of women observed by enumerators who moved to another block, fled, or avoided an area within the hotspot in response to severe harassment and the total number of severe sexual harassment instances. We regress this variable against the ratio of severe incidents to total sexual harassment instances observed by the enumerators in a given hotspot-week. In Column (1), we report OLS estimates and in Column (2), we instrument the severe-to-total ratio with the dummy for the uniformed treatment arm. Each regression includes strata fixed effects. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey.

## 5 Mechanisms: Do Police Attitudes Toward Sexual Harassment Affect Their Performance?

In this section, we study mechanisms behind the reduction in severe harassment and the lack of effects for mild offenses from uniformed patrolling. Specifically, we aim to understand whether police officers' views about street harassment affect their performance and ultimately, the incidence of sexual harassment. To do this, we first conducted a lab exper-

iment to measure officers' tolerance of and desire to punish sexual harassment offenses. Second, we analyzed how officers' views on sexual harassment interacted with our main treatment. We exploit the random composition of different views of sexual harassment due to our design and interact these views with the police treatment.<sup>41</sup> This heterogeneity was motivated by the fact that social gender norms are an important risk factor for gender-based violence. Moreover, individuals in professions historically segregated by sex (such as the military and police) tend to adhere to more biased gender norms that are difficult to address (Dahl and Knepper, 2021; Miller and Segal, 2019).

Consistent with this motivation, we present two main findings. First, in the lab setting, we observed that police officers were more tolerant of mild sexual harassment cases and thus less likely to punish them. Second, in the field, we found that visible patrols by officers with harsher reactions to sexual harassment were more effective in addressing mild offenses. These officers tolerated these crimes less and more overtly signaled their ability to punish offenders through greater activity such as walking around, talking to citizens, and issuing warnings.

## 5.1 Lab Experiment

Between January and March 2021, we conducted a lab experiment to determine whether officers' probability of detecting and punishing harassment offenses as well as their overall tolerance of sexual harassment explained the intervention effects. Officers must detect multiple types of offenses, so they may prioritize some over others. Since more severe offenses are probably easier to detect and prosecute, we first explored if police officers were able to detect and punish mild offenses compared to others. Next, we conducted a second experiment to understand if officers were more or less likely to punish mild sexual harassment offenses than severe ones.

We invited 354 HCP officers to attend a one-hour session in a lab at police headquarters that was created specifically for our research. Each lab session accommodated a maximum

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<sup>41</sup>Our PAP specified a heterogeneity analysis based on gender norms.

of 10 officers.<sup>42</sup> Officers were incentivized for correct answers that could earn each participant a maximum of INR 520 in the form of an Amazon voucher. Each experiment also contained two encouragement messages and attention checks.

During the experiment, each officer was shown nine videos of vignettes to elicit their reactions to specific situations. After each video, the officers answered a brief survey indicating their response to each hypothetical situation. Of the nine videos, six depicted instances of mild sexual harassment, one displayed a property offense, and two displayed neutral events without any illegal activity.<sup>43</sup> In all the videos, women took center stage either as victims or as the protagonist engaging with men. We randomized the presentation of videos in two ways: the order in which the videos were shown and the speed at which they were shown (fast videos were played at a speed of 1.75x).<sup>44</sup> This randomization approximated the challenges officers face on patrol, since detecting sexual harassment requires a high degree of attention, knowledge, and a quick response. We showed several videos to provide multiple opportunities to measure detection since sexual harassment varies substantially in form, and it would be difficult to obtain an accurate representation based on only one vignette.<sup>45</sup> To gather officer-level information, we merged data obtained from this sample with information obtained from the phone survey conducted beforehand.

To test the role of the officers' detection ability, their probability of administering punishment, and their tolerance of mild sexual harassment vs. instances in which no harassment occurred, we compared officers' responses across video types (mild sexual harassment vs. no harassment) such that:

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<sup>42</sup>The distribution of seats and the setting are shown in Figure A9 in the Appendix. On average, eight officers attended each session.

<sup>43</sup>Appendix Table A18 describes the scenes and types of videos. The scripts were developed based on real instances of sexual harassment that women described during the pilot of the baseline survey and from police reports made to the *SHE Teams* office.

<sup>44</sup>For instance, if the length of a video was 2 minutes, a quick video lasted approximately 1.14 minutes. Through piloting, we determined that these videos mimicked street conditions. The videos allowed sufficient time for officers to notice and identify sexual harassment.

<sup>45</sup>To measure officers' attention during the experiment and maximize their engagement, all officers viewed two encouraging messages during the same part of the experiment. Of the 354 officers invited to participate in the experiment, 18 did not pass the attention checks.

$$Y_{vos} = \beta_0 + \delta_1 \text{SexualHarassment}_v + \gamma_s + \epsilon_{vos} \quad (2)$$

where  $Y_{vos}$  is the main dependent variable of interest for each video  $v$  randomly shown to officer  $o$  in session  $s$ . The main dependent variables are: (i) *offense identification* is a dummy that takes the value of one if officers correctly identify the scene displayed in the video; (ii) *perception of ease of detection of an offense* is a dummy equal to one if officers perceive the offense as being easy to detect; (iii) *rate of the necessity of investigation* is a dummy that takes the value of one if an officer thinks the offense requires action; and (iv) *punitive action* is a dummy that takes the value of one if officers take some action (e.g., give a warning or take the suspect to the station).

The main independent variable of interest is  $\text{SexualHarassment}_v$ , a dummy that is equal to one for videos displaying mild harassment incidents and zero otherwise.  $\gamma_s$  is lab-session fixed effects and  $\epsilon_{vos}$  is the error term. Standard errors are clustered at the officer level.<sup>46</sup>

Table 7 shows the results. First, about 82 percent of officers detected sexual harassment in the videos. Also, officers were equally likely to detect mild cases of harassment relative to property crimes as shown in Column (1). Furthermore, we find that police officers were able to detect even mild cases of harassment in challenging circumstances (i.e., when the video was faster). These results suggest that the lack of effects on mild harassment was not due to an inability to detect these crimes.

Second, while police officers detected both mild harassment offenses and property crimes in public, Column (2) shows they were more likely to believe it took more effort to identify street harassment crimes than other offenses. Police officers were 10 percentage

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<sup>46</sup>On average, 81 percent of officers attending the experiment were male, 59 percent had graduate or post-graduate education, and 14 percent were *SHE Teams* officers. Officers' ability to identify was high, with 82 percent correctly identifying a scene, 61 percent perceiving that detection was easy, and 80 percent not dismissing an incident—consistent with the fact that eight out of the 10 videos displayed a crime incident. Yet, officers exhibited significant victim-blaming beliefs, with 40 percent believing it was the victim's fault that an incident occurred. Since we randomized by type of video and speed, we also show that officers' characteristics did not differ across treatment arms. In addition, officers' total completion time for the experiment and the composition of the session were well-balanced.



points less likely to think mild street harassment was easy to detect compared with property crime. Third, Columns (3) and (4) show officers thought there was no need to detect or punish mild street harassment crimes.<sup>47</sup>

Table 7: Detection, Tolerance, and Punishment of Sexual Harassment vs. Other Crimes

	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

*Note:* Mild Sexual Harassment is a dummy that is equal to one for videos displaying mild harassment incidents and zero otherwise. The dependent variable in Column (1) is a dummy that indicates if an officer was able to differentiate sexual harassment offenses from other offenses in the videos. The outcome in Column (2) is the share of officers who believed sexual harassment offenses were easier to detect than non-sexual crimes. Column (3) uses a binary indicator for whether police officers believed they should invest their time gathering evidence against mild sexual offenses as the outcome. Column (4) reports the treatment effect on a dummy that indicates whenever an officer believed that sexual offenses deserved punishment. Clustered by police officer standard errors in brackets: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Overall, these results suggest that since police officers believed mild harassment cases required more effort and also believed there was less need to work on these cases, they were ultimately less likely to pursue such charges.

We designed a second experiment to study the decision making of *SHE Teams* officers. In this one, officers watched videos on street harassment and we varied the severity of

<sup>47</sup>Taking advantage that we have all police officers and not only *SHE Teams*, we also analyzed whether effects vary by being a *SHE Teams* officer. We find that while *SHE Teams* find it easier to detect street harassment crimes, their views toward these crimes are similar to the average police officer that was not part of *SHE Teams*. These results are in line with the fact that *SHE Teams*' training was on improving the detection of street harassment and knowledge of the legislation and not on changing attitudes or views toward street harassment. Results are available upon request.

cases. Both the first and second exercises were implemented in the same structure and sample. The main difference was that in the second experiment, all officers viewed the same videos and we did not vary the conditions. Here, officers viewed seven videos—one of a mild offense and six of severe offenses.<sup>48</sup> Based on this experiment, we evaluated the performance of police officers who only worked in the *SHE Teams* program, which deals exclusively with patrols and sexual harassment offenses. The results are very similar to Table 7. We find that these officers, if anything, were more likely to detect mild offenses. However, they were much less likely to punish them (see Table A19). This result is consistent with the intuition that officers’ attitudes, rather than their ability to detect harassment, could primarily explain the lack of effect of *SHE Teams* patrols on the incidence of mild harassment. We directly test this hypothesis in the next section.

## 5.2 Heterogeneity Based on Police Officers’ Views of Harassment

Given the variation in attitudes across police officers concerning street harassment, we exploit officers’ data on individual characteristics to analyze the role of their views on sexual harassment. In particular, we use information based on eight different items related to policing, sexual harassment, and their role in preventing and punishing such crimes. We combined this individual-level data with weekly data on officers’ hotspot assignments. We next merged this information with the EOS data by creating a hotspot-week measure of officers’ sexual harassment attitudes. It is worth noting that teams and assignments varied randomly by day. As a result, our gender attitudes measure explores the variation in team attitudes across hotspots and over time. To calculate and interpret the result, we created a dummy equal to one if the attitudes of the team of officers patrolling a given hotspot-week belonged to the top quartile of the distribution of attitudes across teams, and zero if not.<sup>49</sup>

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<sup>48</sup>Appendix Table A18 describes the scenes and types of videos. The videos can be accessed through [link](#). We developed the scripts based on instances of sexual harassment that women described during the pilot of the baseline survey and from reports made to the *SHE Teams* office.

<sup>49</sup>We also analyze whether women’ norms or bystander behavior at baseline at the hotspot mitigated the effects (see the Appendix). We find no evidence that effects were smaller in hotspots that were more tolerant of harassment.

Table 8 presents these results. First, in Column (1) we show that uniformed officers with harsher attitudes toward sexual harassment reduced the incidence of all harassment in public spaces by 12 percent. We also find that severe harassment victimization rates were not differentially affected by patrols of officers with less tolerance of harassment (Column (2)). The main effect of the intervention remains unchanged, and we show that having officers who were less tolerant of harassment on a team did not alter their ability to reduce the most severe forms of harassment. In contrast, we find that victimization of mild offenses decreased by 15 percent when hotspots were patrolled by officers who were less tolerant of harassment (Column (3)). Patrols of officers in the remaining three-quarters of the distribution did not have an impact on rates of mild harassment.

Are harsher officer attitudes correlated with other officer characteristics (e.g., general effort, ability, experience, or gender)? Since the experience, education, and gender were fixed across teams, we can rule out those characteristics driving the effects of mild harassment. Next to distinguish if its general effort or ability vs. attitude toward sexual harassment—specifically—that matters to reduce mild cases, we rely on the fact that the reduction in severe cases is not affected by police’ views. If the attitudes of officers were correlated with ability, we would observe a larger decline in severe harassment as well when we varied the attitudes of police officers’ teams and we find no evidence of it (Column (2)).

These results indicate that officers’ views on harassment are likely to influence the actions they undertake regarding mild cases that are widely classified as, for example, “harmless,” which happen more frequently and are more tolerated. In addition, we show that for severe offenses for which sanctions might be more likely, there was no added police performance effect from having a less tolerant team of officers. Our results are consistent with perpetrators learning by updating beliefs about the probability of punishment (Banerjee et al., 2019; Anwar and Loughran, 2011; Wilson et al., 2017).<sup>50</sup> In particular, we

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<sup>50</sup>Banerjee et al. (2019) study a police patrol intervention to address drunk driving in Rajasthan. The authors experimentally varied the intensity of patrols and the location of sobriety checkpoints to be either fixed or rotating. The authors show that rotating checkpoints reduced night accidents by 17 percent and night deaths by 25 percent, while fixed checkpoints had no significant effects. The authors also show that drivers learned about police presence and as a result, changed their behavior strategically. This result is

observe that officers with less tolerance toward harassment are more likely to be active at the hotspots (see Table A20). Moreover, we also observe that these officers are more likely to punish mild cases (see Table A21).<sup>51</sup> Accordingly, perpetrators are less likely to commit mild offenses when they see this activity. In contrast, when perpetrators observe less active police officers, they may presume that these officers will act if they commit a severe offense but not a mild one.

Overall, these results highlight that police effort is discretionary and depends on underlying individual-level characteristics such as attitudes toward harassment. In particular, it indicates that the determinants of job performance are affected by officers' own social attitudes regarding these crimes. We show that officers' attitudes significantly altered the effectiveness of *SHE Teams*. Such a result is orthogonal to other characteristics such as gender or experience since patrol teams have the same composition in these dimensions.

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consistent with the evidence we present.

<sup>51</sup>Ideally, we would like to observe if in the field officers are more likely to sanction severe cases. However, the data on sanctions was not given to us by type of harassment due to confidentiality.

Table 8: Effect of Policing on Street Harassment by Patrol Officers' Harassment-Related Attitudes

	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

*Note:* The main dependent variable is the rate of victims observed in a hotspot-week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to a hotspot in a week. In Column (1), we present the rate per total forms of harassment. In Columns (2) and (3), we display the rate by severe and mild forms of harassment, respectively. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Officers' Attitudes Index is a dummy that takes the value of one if the average team of officers patrolling a hotspot in a given week scored in the 75th percentile or higher of the gender attitudes index. The gender attitudes index is obtained from individual-level officer surveys. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey and police officer survey.

## 6 Conclusion

In our study, we investigated the effectiveness of different street patrolling approaches in reducing sexual harassment in public spaces. We find that street patrols by uniformed

officers reduced severe sexual harassment but not mild offenses. Results from the lab experiment explain the effect on milder sexual harassment: it stems from officers' views on punishing milder forms rather than from the difficulty of detection. Consistent with these results, we find that teams with more progressive attitudes—who were less tolerant of sexual harassment—were more effective at reducing both mild and severe harassment in public spaces. Our work highlights the nuanced effects of different street patrol methods on sexual harassment and emphasizes the importance of addressing underlying attitudes within law enforcement teams to effectively combat all forms of sexual harassment in public spaces

From a policy standpoint, we highlight ways to increase police effectiveness in addressing sexual harassment, one of the least reported crimes. This is pivotal for developing countries like India, which has only 144 police officers per 100,000 people—one of the lowest police per capita in the world (UN, 2017). More importantly, we provide pathways through which police can improve job performance as measured by a drop in sexual harassment. The type of patrol (i.e., uniformed or undercover) is relevant to the deterrence of sexual harassment. In our context, the status quo mode of patrols by *SHE Teams* involves only undercover officers. In line with HCP's initial predictions, we show that these officers could better detect offenders when undercover, since their patrol mode held an added element of surprise. Yet, this effect was small and insufficient to change the incidence of sexual harassment. Most importantly, we show that visible policing is more effective due to its potential to deter a very frequent offense. This result adds to a growing literature on police resources (Banerjee et al., 2019; Collazos et al., 2021). Finally, we show that officers' team attitudes toward sexual harassment are a key determinant of their on-the-job performance. In particular, officers with lower tolerance toward sexual harassment can address both severe and mild forms of the offense. This is a significant result from a policy standpoint since police are the first point of contact for any crime. It suggests that training programs to alter attitudes<sup>52</sup> could improve police performance.

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<sup>52</sup>To better understand these implications, in ongoing work, Amaral et al. (2021b) study the impact of gender-sensitivity training on police officers' skills and performance when interacting with women.

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## A Appendix—Tables and Figures

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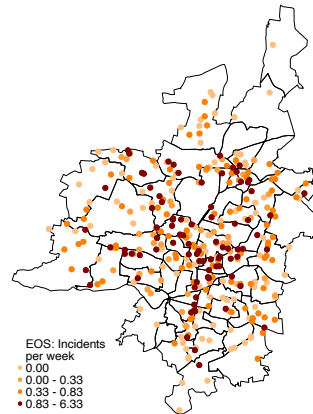
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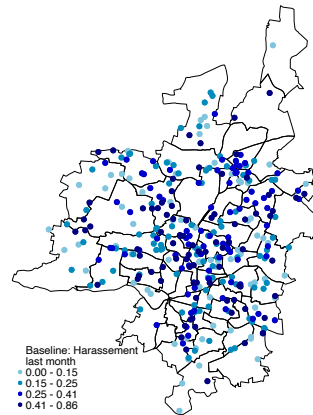
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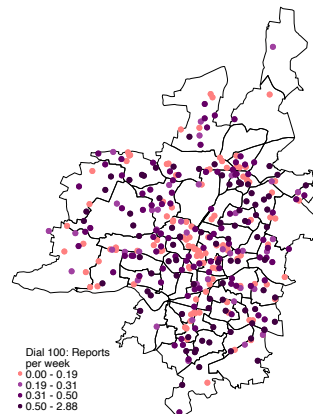
Figure A1: Measurement of Street Harassment at Hotspots at Baseline



(a) Enumerator Observation Survey



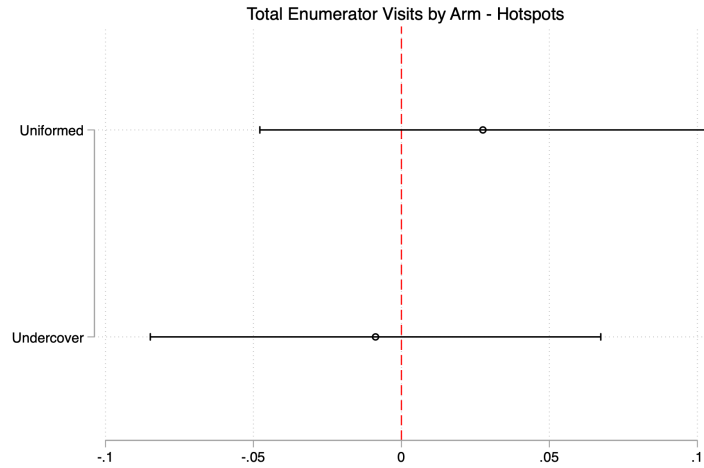
(b) Female Commuters' Survey



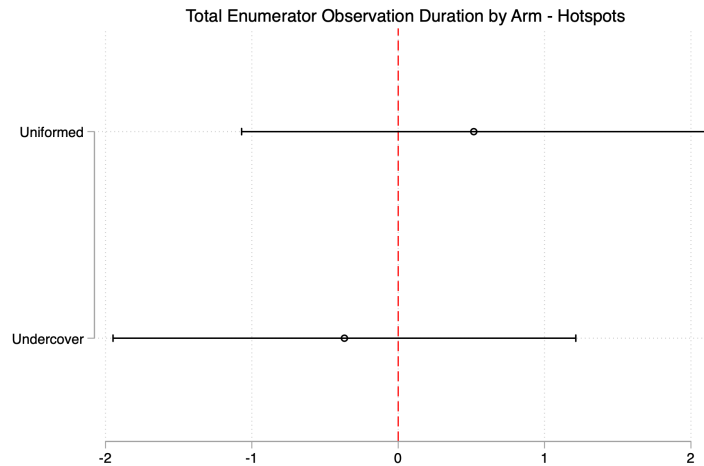
(c) Sexual Harassment Police Calls

*Note:* This figure displays the spatial distribution of the level of street harassment using three different measures. Panel (a) displays observed harassment, the primary outcome; panel (b) displays the rate of victimization using women's survey responses; and panel (c) displays the number of calls to "Dial 100" regarding sexual harassment. All measures use preintervention data and are collected at the hotspot level.

Figure A2: Effect of the Intervention on EOS Visits and Observation Minutes



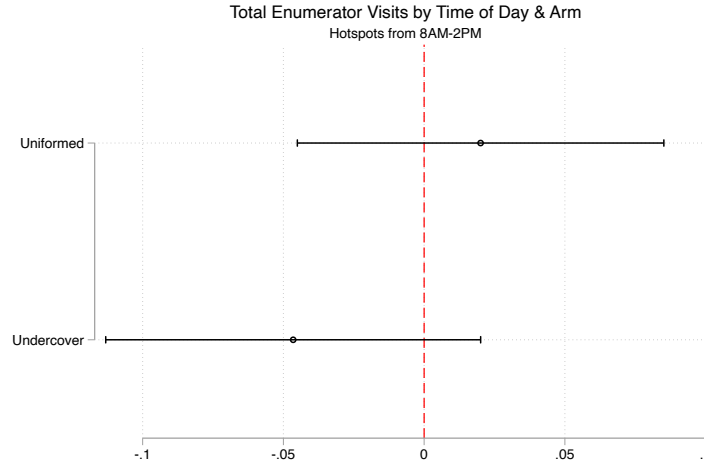
(a) Visits



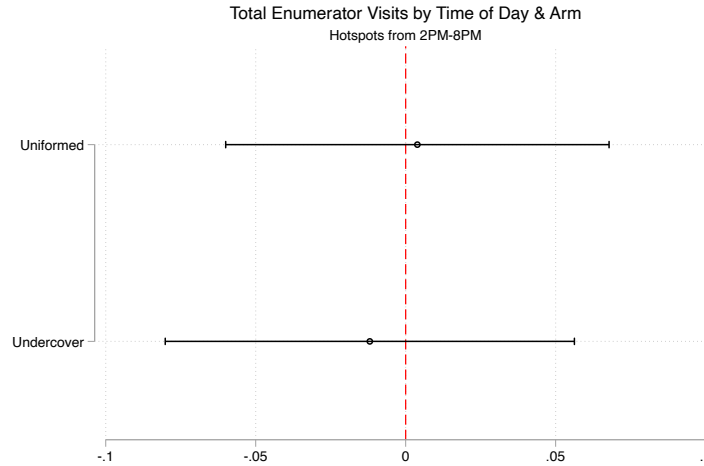
(b) Minutes

Note: The figures display coefficients  $\delta_1$ ,  $\delta_2$ , and their respective 95% confidence intervals from regressions of the form  $Y_{hw} = \beta_0 + \delta_1 Uniformed_h + \delta_2 Undercover_h + X_{hw} + \gamma_s + \epsilon_{hw}$  - following Equation 1. In Figure (a),  $Y_{hw}$  is the number of visits by an enumerator to a hotspot-week. In Figure (b),  $Y_{hw}$  is the total duration (in minutes) of visits by enumerators to a hotspot-week. All regressions include strata fixed effects. Standard errors are clustered at the hotspot level. Data source: Enumerator Observation Survey.

Figure A3: Effect of the Intervention on EOS Visit Times



(a) Visits from 8AM to 2PM

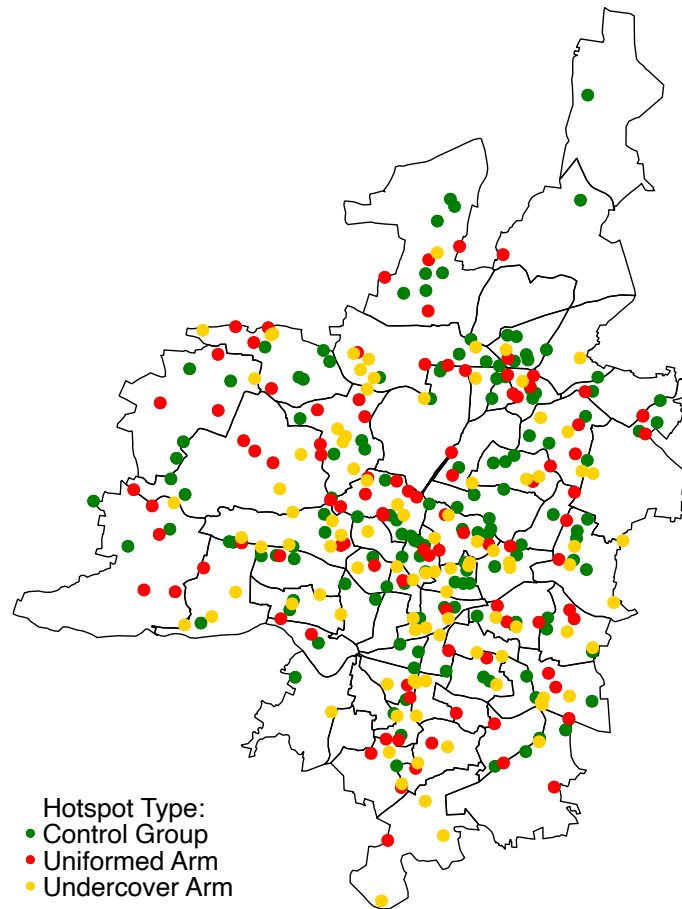


(b) Visits from 2PM to 8PM

Note: The figures display coefficients  $\delta_1$ ,  $\delta_2$ , and their respective 95% confidence intervals from regressions of the form  $Y_{hw} = \beta_0 + \delta_1 Uniformed_h + \delta_2 Undercover_h + X_{hw} + \gamma_s + \epsilon_{hw}$  - following Equation 1. In Figure (a),  $Y_{hw}$  is the number of visits by an enumerator to a hotspot-week between 8AM and 2PM. In Figure (b),  $Y_{hw}$  is the total duration (in minutes) of visits by enumerators to a hotspot-week between 2PM and 8PM. All regressions include strata fixed effects. Standard errors are clustered at the hotspot level. Data source: Enumerator Observation Survey.



Figure A4: Spatial Distribution of Hotspots and Experimental Assignment



*Note:* The figures display the location of hotspots and the respective patrol areas within Hyderabad City Police jurisdiction.

Figure A5: Timeline of Activities

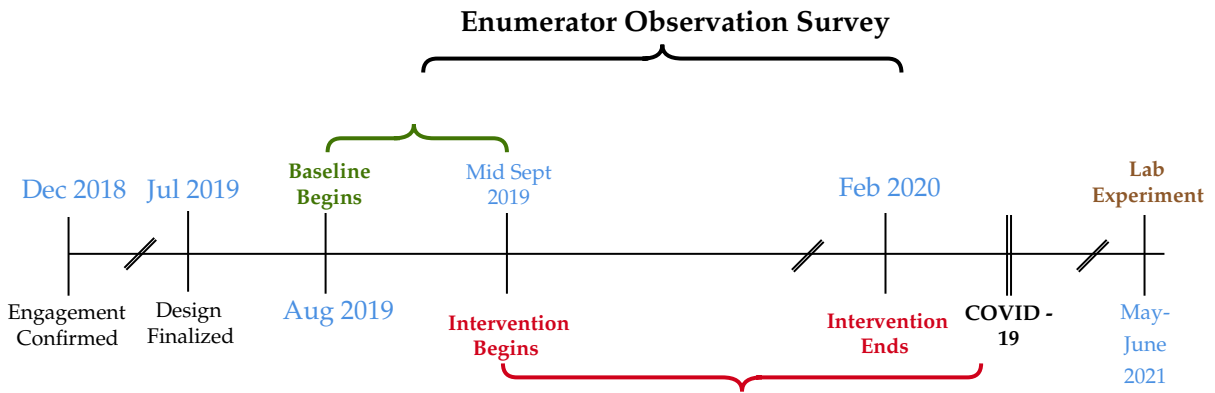
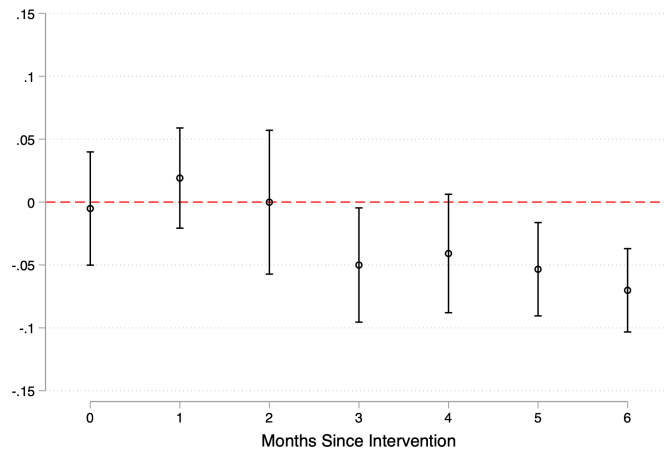
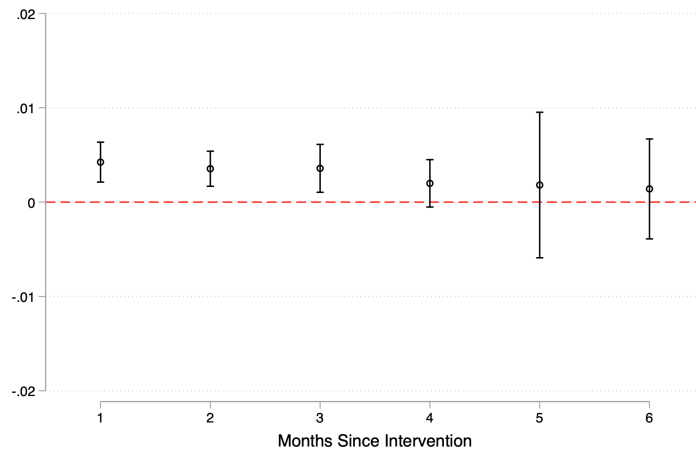


Figure A6: The Effects of Uniformed Patrols on Street Harassment by Month



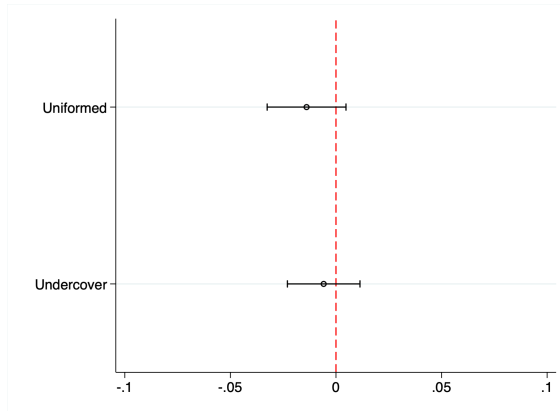
*Note:* The figure displays coefficients and 95% confidence intervals of the effect of the intervention by month. The dependent variable is the rate of victims observed in a hotspot week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to a hotspot in a week. The regression follows 1 and interacts the Uniformed dummy with dummies that indicate the number of months, 1–6, after the intervention. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. We also include in the regression a variable to control for the Undercover arm. Standard errors are clustered at the hotspot level. Data source: Enumerator Observation Survey.

Figure A7: The Effects of Uniformed Patrols on Arrests per Visit by Month

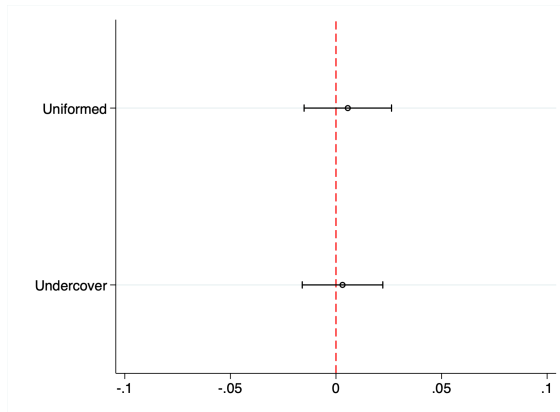


*Note:* The figure displays coefficients and 95% confidence intervals of the effect of the intervention by month. The dependent variable is the number of arrests per visit in a hotspot week. The regression follows 1 and interacts the Uniformed dummy with dummies that indicate the number of months, 1–6, after the intervention. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. We also include in the regression a variable to control for the Undercover arm. Standard errors are clustered at the hotspot level. Data source: Enumerator Observation Survey.

Figure A8: Effect of Policing on Women's Response



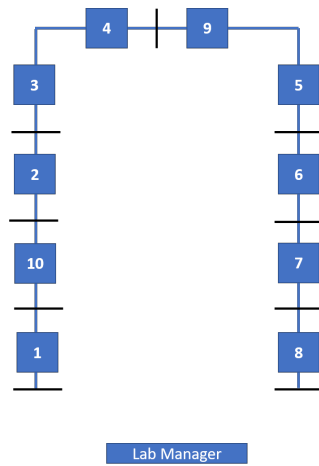
(a) Severe SH



(b) Mild SH

*Note:* The figures display coefficients  $\delta_1$ ,  $\delta_2$ , and their respective 95% confidence intervals from regressions of the form  $Y_{hw} = \beta_0 + \delta_1 Uniform_h + \delta_2 Undercover_h + X_{hw} + \gamma_s + \epsilon_{hw}$  - following Equation 1. In Figure (a),  $Y_{hw}$  is the number of responses (i.e., asking a bystander for help or fighting the perpetrator) to severe sexual harassment. In Figure (b),  $Y_{hw}$  is the number of responses to mild sexual harassment. We consider that a woman sought help from bystanders when she called on the phone, informed the person with her, or directly sought help from bystanders. We consider that she responded by fighting whenever she called the perpetrator out publicly, used self-defense, confronted him quietly, or responded and stayed there. All regressions include strata fixed-effects. Standard errors are clustered at the hotspot level. Data source: Enumerator Observation Survey.

Figure A9: Lab Map and Setting



*Note:*The top figure displays the distribution of officers in the lab, and the bottom figure displays a photo of one of the sessions.

Table A1: Legislation and Penalties for Sexual Harassment Offenses

S. No.	Crime Type	IPC Section	Maximum Punishment
1	Rape	375, 376, 376A (Causing Death or resulting in persistent vegetative state) 376B (by husband without consent during separation) 376C (by person in authority) 376D (Gang rape) 376E (Repeat Offender)	20 years to Life 2 to 7 years 5 to 10 years 20 years to Life Life
2	Attempt to Commit Rape	376/511	One-half of the punishment provided
3	Un-natural offence	377	10 years to Life
4	Kidnapping and seduction	362 and 363	7 years & fine
5	Murder Dowry Death Abetment of suicide	302 304B 306	Life 7 years to Life 10 years
6	Cruelty by husband or his relatives	498A	3 years & fine
7	Outraging the modesty of women  Harassment	354  354(A) - Sexual harassment, physical contact, demanding or requesting sexual favours, showing pornography, making sexually colored remarks 354(B) - Assault on women with the intent to disrobe a woman 354(C) Voyeurism - captures images of women engaging in private act	Fine and imprisonment of 2 years  3 years 3 to 7 years

		354(D) - Stalking: Follows a woman and contacts, attempts to contact, monitors by internet, email, electronic communication	3 to 5 years
		Section 298 A and B - Various forms of harassment: a man who is found guilty of making a female the target of obscene gestures, remarks, songs, or recitation	3 months
8	Words, gestures or acts intended to insult the modesty of a woman	509	Fine or up to 1 year imprisonment
9	Cheating and manipulating to marry	418, 420	7 years
10	Criminal intimidation, blackmailing & threatening	503 & 506	2 years
11	Harassing through social media & Whatsapp, creating fake accounts, morphing, sending obscene videos & pictures	Sec. 66 & 67 of IT Act & Section 292	3 to 5 years fined; fine of 2000 and 2 imprisonment for first time offenders, repeated offences are punished with 5000 fine and 5 years' imprisonment.
12	Petty cases	Sec. 70(C) of City Police Act	10 days & fine

*Note:* This table displays the relevant acts and Indian Penal Code legislation that address sexual harassment offenses. Sources: Hyderabad City Police and ([HCP, 2011](#)).

The Indian Penal Code is the official criminal code of India. It is a comprehensive code intended to cover all substantive aspects of criminal law. While the IPC does not classify crimes into mild and severe (which we use in this paper), offenses committed are classified into three categories: petty offenses, which have a prison sentence of less than 3 years under the IPC; serious offenses, which have a prison sentence of 3–7 years;



and heinous offenses, which have a prison sentence of more than 7 years under the IPC. The crimes against women in the severe category used in this paper fall under serious offenses. We have not collected information on the heinous offenses. Furthermore, the research team had detailed discussions with several Indian Police Service Officers (IPS) with 1 year of experience to 30 years of experience to validate our classification and to better understand our results.

Some excerpts from discussions with IPS officers:

*“I think it is severe because it deeply impacts my sense of safety in a public place. It affects my decisions, life choices and leaves me feeling uncomfortable and suspicious at all times since such actions are so normalized”*

*“This shows reckless or intentional disregard of consequences. The person is almost sure that the woman would not complain, and even if she does, no action is going to be taken. If one doesn’t fear the law in a public place, he is very likely to be more fearless in private.”*

*“The very fact that it was done in a public place makes it so. A public place means everyone is watching you and you are yet bold enough to commit the crime. This makes it severe.”*

*“Of course this is severe. However, these acts should be unambiguously defined and explicit to be proven in court.”*

Table A2: Stratification by Type and Size of Public Space

	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
<b>Total</b>	<b>150</b>	<b>100</b>	<b>100</b>	<b>350</b>

*Note:* This table displays the distribution of hotspots by strata items by type of public space and size. The type of public space includes hotspots characterized as serving educational institutions, general public space, residential areas, or commuting areas.

Table A3: Balancing Tests—Hotspot Areas

Variable	(1) Mean Uniform	(2) Mean Undercover	(3) Mean Control	(4) Diff Uniform-Control	(5) Diff Undercover-Control	(6) Diff Uniform-Undercover
Education Level: No Education	0.045 (0.207)	0.043 (0.202)	0.056 (0.230)	-0.012 (0.011)	-0.013 (0.011)	0.002 (0.012)
Education Level: Up to High School	0.597 (0.491)	0.559 (0.497)	0.544 (0.498)	0.054** (0.026)	0.017 (0.027)	0.041 (0.030)
Education Level: Graduate and Post-Graduate	0.356 (0.479)	0.398 (0.490)	0.400 (0.490)	-0.043 (0.027)	-0.004 (0.027)	-0.045 (0.031)
Occupation Status: Unemployed or Retired	0.036 (0.187)	0.029 (0.168)	0.042 (0.200)	-0.007 (0.010)	-0.013 (0.009)	0.008 (0.010)
Occupation Status: Student	0.504 (0.500)	0.491 (0.500)	0.497 (0.500)	0.007 (0.031)	-0.005 (0.031)	0.011 (0.034)
Occupation Status: Homemaker	0.115 (0.319)	0.104 (0.305)	0.087 (0.283)	0.028 (0.019)	0.017 (0.016)	0.012 (0.018)
Occupation Status: Employed	0.345 (0.476)	0.375 (0.484)	0.372 (0.483)	-0.026 (0.024)	0.002 (0.026)	-0.031 (0.029)
Marital Status: Never Married	0.703 (0.457)	0.654 (0.476)	0.692 (0.462)	0.011 (0.029)	-0.039 (0.028)	0.050 (0.031)
Marital Status: Ever-Married	0.291 (0.454)	0.335 (0.472)	0.299 (0.458)	-0.007 (0.028)	-0.037 (0.028)	-0.044 (0.031)
Mode of Transport: Cab/Carpool/Auto	0.228 (0.419)	0.207 (0.405)	0.238 (0.426)	-0.006 (0.031)	-0.029 (0.028)	0.018 (0.032)
Mode of Transport: Walking	0.182 (0.386)	0.191 (0.393)	0.200 (0.400)	-0.020 (0.025)	-0.006 (0.025)	-0.010 (0.026)
Mode of Transport: Bus	0.779 (0.415)	0.745 (0.436)	0.738 (0.440)	0.043 (0.028)	0.004 (0.029)	0.037 (0.029)
Mode of Transport: Local Train or Metro	0.049 (0.215)	0.070 (0.255)	0.063 (0.244)	-0.018 (0.015)	0.003 (0.019)	-0.019 (0.017)
Mode of Transport: Two-Wheelers	0.087 (0.282)	0.081 (0.273)	0.089 (0.284)	-0.001 (0.017)	-0.007 (0.016)	0.007 (0.019)
Mode of Transport: Private Car	0.022 (0.148)	0.012 (0.108)	0.019 (0.137)	0.003 (0.010)	-0.009 (0.006)	0.009 (0.009)
Gender Norms: Index (Sum)	1.090 (1.346)	0.976 (1.410)	1.084 (1.461)	0.013 (0.175)	-0.156 (0.211)	0.104 (0.190)
Victimization Rate (City)	0.324 (0.468)	0.360 (0.480)	0.359 (0.480)	-0.039 (0.036)	-0.000 (0.031)	-0.032 (0.035)
Feel Safe at Hotspot	0.673 (0.469)	0.671 (0.470)	0.649 (0.477)	0.028 (0.040)	0.026 (0.034)	0.002 (0.042)
Time Spent Outdoors (Hours)	7.148 (2.435)	7.242 (2.610)	7.183 (2.506)	-0.039 (0.153)	0.045 (0.148)	-0.095 (0.163)
Takes at Least 1 Precaution	0.896 (0.305)	0.871 (0.335)	0.886 (0.318)	0.012 (0.024)	-0.014 (0.025)	0.023 (0.028)
Observations	1,072	1,101	1,624	2,696	2,725	2,173

Table A4: Balancing Tests—Spillover Areas within 200m Radius from Hotspots

Variable	(1) Mean Uniform	(2) Mean Undercover	(3) Mean Control	(4) Diff Uniform-Control	(5) Diff Undercover-Control	(6) Diff Uniform-Undercover
Education Level: No Education	0.059 (0.236)	0.059 (0.236)	0.038 (0.191)	0.023* (0.013)	0.023* (0.013)	-0.000 (0.016)
Education Level: Up to High School	0.619 (0.486)	0.619 (0.486)	0.554 (0.497)	0.055* (0.033)	-0.005 (0.036)	0.057 (0.037)
Education Level: Graduate and Post	0.322 (0.468)	0.322 (0.468)	0.408 (0.492)	-0.078** (0.034)	-0.021 (0.037)	-0.054 (0.039)
Occupation Status: Unemployed or Retired	0.034 (0.180)	0.034 (0.180)	0.027 (0.162)	0.008 (0.010)	-0.009 (0.009)	0.017 (0.010)
Occupation Status: Student	0.514 (0.500)	0.514 (0.500)	0.513 (0.500)	-0.011 (0.034)	-0.042 (0.035)	0.031 (0.041)
Occupation Status: Homemaker	0.152 (0.360)	0.152 (0.360)	0.122 (0.327)	0.030 (0.025)	0.042 (0.026)	-0.010 (0.031)
Occupation Status: Employed	0.300 (0.458)	0.300 (0.458)	0.337 (0.473)	-0.027 (0.030)	0.009 (0.031)	-0.038 (0.035)
Marital Status: Never Married	0.638 (0.481)	0.638 (0.481)	0.636 (0.481)	-0.008 (0.035)	-0.023 (0.034)	0.015 (0.040)
Marital Status: Ever-Married	0.351 (0.478)	0.351 (0.478)	0.357 (0.479)	0.004 (0.035)	0.024 (0.034)	-0.020 (0.040)
Mode of Transport: Cab/Carpool/Auto	0.248 (0.432)	0.248 (0.432)	0.218 (0.413)	0.039 (0.036)	0.010 (0.035)	0.026 (0.040)
Mode of Transport: Walking	0.171 (0.377)	0.171 (0.377)	0.169 (0.375)	0.004 (0.029)	0.005 (0.031)	0.001 (0.036)
Mode of Transport: Bus	0.758 (0.429)	0.758 (0.429)	0.804 (0.397)	-0.049 (0.033)	-0.051* (0.030)	0.005 (0.038)
Mode of Transport: Local Train or Metro	0.091 (0.288)	0.091 (0.288)	0.041 (0.198)	0.051** (0.025)	0.016 (0.017)	0.037 (0.026)
Mode of Transport: Two-Wheelers	0.088 (0.284)	0.088 (0.284)	0.089 (0.285)	0.002 (0.020)	0.023 (0.022)	-0.024 (0.024)
Mode of Transport: Private Car	0.026 (0.158)	0.026 (0.158)	0.025 (0.156)	0.001 (0.014)	0.010 (0.014)	-0.007 (0.014)
Gender Norms: Index (Sum)	1.324 (1.596)	1.324 (1.596)	1.168 (1.485)	0.103 (0.187)	0.172 (0.174)	-0.061 (0.209)
Victimization Rate (City)	0.284 (0.451)	0.284 (0.451)	0.314 (0.464)	-0.035 (0.042)	-0.029 (0.044)	0.004 (0.046)
Feel Safe at Hotspot	0.799 (0.401)	0.799 (0.401)	0.796 (0.403)	0.001 (0.036)	0.025 (0.037)	-0.019 (0.039)
Time Spent Outdoors (Hours)	7.153 (2.701)	7.153 (2.701)	7.317 (2.399)	-0.134 (0.181)	-0.557*** (0.196)	0.416* (0.222)
Takes at Least 1 Precaution	0.885 (0.319)	0.885 (0.319)	0.863 (0.344)	0.013 (0.028)	-0.047 (0.036)	0.058 (0.036)
Observations	624	624	1,003	8,264	8,264	8,264

Table A5: Balancing Tests—Spillover Areas within 500m Radius from Hotspots

Variable	(1) Mean Uniform	(2) Mean Undercover	(3) Mean Control	(4) Diff Uniform-Control	(5) Diff Undercover-Control	(6) Diff Uniform-Undercover
Education Level: No Education	0.067 (0.251)	0.067 (0.251)	0.050 (0.218)	0.021 (0.016)	0.031* (0.018)	-0.008 (0.021)
Education Level: Upto High School	0.611 (0.488)	0.611 (0.488)	0.518 (0.500)	0.094*** (0.036)	0.064* (0.036)	0.027 (0.038)
Education Level: Graduate and Post	0.320 (0.467)	0.320 (0.467)	0.431 (0.495)	-0.116*** (0.035)	-0.096*** (0.035)	-0.019 (0.036)
Occupation Status: Unemployed or Retired	0.016 (0.124)	0.016 (0.124)	0.028 (0.164)	-0.013 (0.009)	0.000 (0.011)	-0.010 (0.009)
Occupation Status: Student	0.497 (0.500)	0.497 (0.500)	0.461 (0.499)	0.037 (0.037)	0.015 (0.039)	0.015 (0.043)
Occupation Status: Homemaker	0.117 (0.322)	0.117 (0.322)	0.134 (0.341)	-0.016 (0.023)	-0.015 (0.023)	-0.002 (0.026)
Occupation Status: Employed	0.370 (0.483)	0.370 (0.483)	0.378 (0.485)	-0.008 (0.034)	-0.002 (0.034)	-0.001 (0.038)
Marital Status: Never Married	0.605 (0.489)	0.605 (0.489)	0.597 (0.491)	0.007 (0.038)	0.017 (0.038)	-0.015 (0.043)
Marital Status: Ever-Married	0.386 (0.487)	0.386 (0.487)	0.397 (0.490)	-0.011 (0.037)	-0.022 (0.037)	0.016 (0.041)
Mode of Transport: Cab/Car-Pool/Auto	0.244 (0.430)	0.244 (0.430)	0.253 (0.435)	-0.017 (0.038)	-0.077** (0.034)	0.062 (0.038)
Mode of Transport: Walking	0.180 (0.384)	0.180 (0.384)	0.147 (0.355)	0.035 (0.030)	-0.005 (0.025)	0.041 (0.032)
Mode of Transport: Bus	0.752 (0.432)	0.752 (0.432)	0.796 (0.403)	-0.052 (0.035)	0.017 (0.028)	-0.062* (0.037)
Mode of Transport: Local Train or Metro	0.067 (0.251)	0.067 (0.251)	0.045 (0.207)	0.018 (0.019)	-0.000 (0.019)	0.021 (0.021)
Mode of Transport: Two-Wheelers	0.067 (0.251)	0.067 (0.251)	0.098 (0.298)	-0.032 (0.021)	-0.006 (0.022)	-0.021 (0.023)
Mode of Transport: Private Car	0.028 (0.165)	0.028 (0.165)	0.019 (0.138)	0.002 (0.010)	0.013 (0.016)	-0.011 (0.019)
Gender Norms: Index (sum)	1.450 (1.755)	1.450 (1.755)	1.102 (1.488)	0.282* (0.170)	0.192 (0.177)	0.092 (0.197)
Victimization Rate (City)	0.254 (0.436)	0.254 (0.436)	0.288 (0.453)	-0.036 (0.038)	-0.016 (0.042)	-0.019 (0.046)
Feel Safe at Hotspot	0.809 (0.393)	0.809 (0.393)	0.806 (0.396)	0.005 (0.037)	0.011 (0.038)	-0.003 (0.040)
Hours spent outdoors	7.261 (2.382)	7.261 (2.382)	7.180 (2.552)	0.111 (0.169)	-0.058 (0.195)	0.216 (0.208)
Takes at least 1 precaution	0.806 (0.396)	0.806 (0.396)	0.879 (0.326)	-0.072** (0.031)	-0.020 (0.031)	-0.054 (0.036)
Observations	640	640	977	8,264	8,264	8,264

Table A6: Effect of Policing Street Harassment Accounting for Enumerator Fixed Effects

	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

*Note:* The main dependent variable is the rate of victims observed in a hotspot-week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to a hotspot in a week. In Column (1), we present the rate per total forms of harassment and in Columns (2) and (3), we display the rate by severe and mild forms of harassment, respectively. Each regression includes strata and enumerator fixed effects. We also include a dummy that takes the value of one for enumerators who visited a hotspot in a week and zero for those who did not. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it's a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it's a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Randomized inference p-values are displayed in squared brackets. Data source: Enumerator Observation Survey.

Table A7: Effect of Policing on Street Harassment—Robustness Checks

	Sexual Harassment in Public Space		
	Total	Severe	Mild
<b>Panel A: Control for Week FE and Public Holidays</b>			
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)
<b>Panel B: Control for Week FE, Public Holidays, and Bus Strikes</b>			
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

*Note:* The main dependent variable is the rate of victims observed in a hotspot-week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to a hotspot in a week. In Column (1), we present the rate per total form of harassment and in Columns (2) and (3), we display the rate by severe and mild forms of harassment, respectively. Each regression includes strata fixed effects. In panel (a) we include week fixed effects, in panel (b) we add dummies (accounting for hotspot-weeks affected by public holidays such as religious festivals), and in panel (c) we include a dummy for hotspot-weeks affected by bus strikes. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it's a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it's a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey.

Table A8: Effect of Policing on Street Harassment by Type of Incident

Type	Physical Abuse (1)	Indecent Exposure (2)	Pictures (3)	Comments (4)	Facial Expressions (5)	Stalking (6)	Touch/Groping (7)	Intimidate (8)	Staring (9)
Uniform	0.002 (0.001)	0.001 (0.005)	0.002 (0.007)	0.004 (0.015)	0.006 (0.017)	-0.008 (0.005)	-0.036** (0.017)	-0.008* (0.005)	-0.002 (0.023)
Undercover	0.000 (0.001)	-0.001 (0.005)	-0.002 (0.007)	-0.013 (0.015)	0.018 (0.017)	-0.005 (0.005)	0.004 (0.017)	0.002 (0.005)	-0.036 (0.023)
Observations	4,988	4,988	4,988	4,988	4,988	4,988	4,988	4,988	4,988
Mean of Dep. Var / control	0.000	0.022	0.032	0.146	0.178	0.027	0.169	0.020	0.368

*Note:* The main dependent variable is the rate of harassment observed in a hotspot-week by type of offense. This measure is the ratio of incidents of each type and total enumerator visits for a hotspot in a week. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it's a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it's a control group hotspot. Data source: Enumerator Observation Survey.



Table A9: Effects when Enumerators and Police Officers do not Overlap

	(1)	(2)
	Severe	Severe
Uniformed	-0.038** (0.016)	-0.031** (0.012)
Undercover	-0.007 (0.015)	0.013 (0.014)
Uniformed × Coincide	-0.034 (0.022)	
Undercover × Coincide	-0.004 (0.024)	
N	4,988	4,697
Mean of Dep. Var / Control	0.129	0.112
Uniformed=Undercover (p-value)	0.054	0.000

*Note:* The main dependent variable is the rate of severe sexual harassment victims observed in a hotspot in a week. In column (1) we interact our main treatment assignment with a dummy that takes the value one if on a given week-hotspot the number of days in which police visitation and enumerators overlap are above the median and takes the value zero otherwise; in column (2) the estimation sample does not contain weeks in which enumerators reported observing police arrests. All regressions include strata fixed-effects. Standard errors are clustered at the hotspot level. Data source: Enumerator observation survey and police visitation records.

Table A10: Effect of Policing on Street Harassment within 200m and 500m of the Intervention

	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

*Note:* The main dependent variable is the rate of victims observed in a spillover-area week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to an area in a week. Columns (1), (3), and (5) present results for areas that are 200m away from a hotspot, and Columns (2), (4), and (6) for areas that are 500m away from a hotspot. In Columns (1) and (2), we present the rate per total forms of harassment; in Columns (3) and (4), we display the rate by severe harassment; and in Columns (5) and (6), we present results for mild forms of harassment, respectively. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot serving a spillover area is in the uniformed treatment arm and zero if it's a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot serving a spillover area is in the undercover treatment arm and zero if it's a control group hotspot. Standard errors are clustered at the area level and identified in brackets. Data source: Enumerator Observation Survey.

Table A11: Effect of Police Patrolling on Footfall

	Hotspot		200m Spillover		500m Spillover	
Uniformed	-0.060 (0.054)	-0.057 (0.052)	-0.071 (0.060)	-0.062 (0.059)	-0.050 (0.057)	-0.056 (0.056)
Undercover	0.034 (0.059)	0.051 (0.057)	-0.004 (0.058)	-0.006 (0.057)	0.102** (0.052)	0.085 (0.051)
Observations	4,988	4,988	4,683	4,683	4,696	4,696
Mean of Dep. Var. / control	3.586	3.586	3.297	3.297	3.247	3.247
Week FE	No	Yes	No	Yes	No	Yes
Public Holidays/Bus Strike	No	Yes	No	Yes	No	Yes
Uniformed=Undercover (p-value)	0.122	0.071	0.300	0.374	0.014	0.022

*Note:* The main dependent variable is the observed footfall by hotspot week (in logs). In Columns (1)–(2), we present results for the hotspot areas; in Columns (3)–(4), from spillover areas that are 200m away from the hotspot; and in Columns (5)–(6), from spillover areas that are 500m away from the hotspot. This measure takes values from 0 to 1,000 and is the result of the enumerators’ observation and coding of the question, “How many people are at the location?”. In Columns (1), (3), and (5), we present regressions controlling for the number of visits per week. In Columns (2), (4), and (6), we control for week fixed effects and dummies for weeks that were affected by a public holiday or bus strikes. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it’s a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it’s a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey.

Table A12: Effect on “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

*Note:* The main dependent variable is the sum of calls related to sexual harassment offenses per week and per hotspot. The main independent variables are a dummy that takes the value of one for hotspots that are assigned to receive patrols in uniform—Uniformed—and a dummy that takes the value of one for hotspots that are assigned to receive undercover patrols—Undercover. All regressions include strata fixed effects. In Column (2), we include week fixed effects and in Column (3), we include a dummy for weeks that were affected by a public holiday or bus strikes. Standard-errors are clustered at the hotspot level. Source: Hyderabad City Police Dial 100 database.

Table A13: Effect on "Dial 100" Calls—Other Crimes

	Total Other Crimes				Property
	(1)	Accidents (2)	Physical Offenses (3)	Nuisances (4)	Offenses (5)
Uniformed	-0.221 (0.279)	-0.028 (0.045)	-0.020 (0.036)	-0.052 (0.069)	-0.035 (0.032)
Undercover	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. / Control	4.380	0.586	0.700	1.048	0.369
Uniformed=Undercover (p-value)	0.246	0.897	0.453	0.138	0.268
Week FE	Yes	Yes	Yes	Yes	Yes
Public Holiday	Yes	Yes	Yes	Yes	Yes
Bus Strike	Yes	Yes	Yes	Yes	Yes

*Note:* The main dependent variable is the sum of calls related to non-sexual harassment crimes per week and per hotspot. The main independent variables are a dummy that takes the value of one for hotspots that were assigned to receive patrols in uniform—Uniformed—and a dummy that takes the value of one for hotspots that were assigned to receive undercover patrols—Undercover. All regressions include strata fixed effects and controls for week fixed effects, public holidays, and bus strike weeks. Standard errors are clustered at the hotspot level. Source: Hyderabad City Police Dial 100 database.

Table A14: Heterogeneity Based on Female Commuters' Gender Norms

	Sexual Harassment in Public Spaces		
	Total	Severe	Mild
Uniformed X Citizens' Attitudes	-0.016 (0.058)	-0.036 (0.030)	0.020 (0.042)
Uniformed	-0.026 (0.030)	-0.025 (0.015)	-0.001 (0.023)
Undercover X Citizens' Attitudes	0.004 (0.058)	-0.015 (0.034)	0.020 (0.040)
Undercover	-0.011 (0.031)	0.010 (0.016)	-0.021 (0.022)
Total Effect of Citizens Attitudes—Uniform	-0.041 (0.049)	-0.061** (0.026)	0.019 (0.035)
Total Effect of Citizens Attitudes—Undercover	-0.006 (0.049)	-0.005 (0.029)	-0.001 (0.033)
Observations	4,988	4,988	4,988
Mean of Dep. Var / control	0.471	0.129	0.342

*Note:* The main dependent variable is the rate of victims observed in a hotspot week. This measure is the ratio of total identified victims of sexual harassment per total enumerator visits to a hotspot in a week. In Column (1), we present the rate per total form of harassment, and in Columns (2) and (3), we display the rate by severe and mild forms of harassment, respectively. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Citizens' Attitudes is a measure of the women's gender norms index. The gender norms index was constructed at the individual level using women's baseline responses on a 12-item scale. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey and women's baseline survey.

Table A15: Street Harassment and Women’s Mobility. Robustness Checks.

Share of Victims Moving Location due to Sexual Harassment in Public Spaces		
	Severe	Mild
<b>Panel A: Imputing Zero to the Weeks-Hotspots With no Victims</b>		
Uniformed	-0.016*** (0.005)	0.009 (0.010)
Undercover	0.002 (0.007)	0.002 (0.009)
Observations	4,988	4,988
Mean of Dep. Var / Control	0.035	0.099
Uniformed=Undercover (p-value)	0.003	0.479
<b>Panel B: Dependent Variable in Levels</b>		
Uniformed	-0.018** (0.008)	0.020 (0.018)
Undercover	0.006 (0.009)	0.017 (0.017)
Observations	4,988	4,988
Mean of Dep. Var / Control	0.044	0.188
Uniformed=Undercover (p-value)	0.004	0.878

*Note:* Panel A reports the impact of street harassment on women’s mobility behavior as a response to severe or mild harassment. The dependent variable is the ratio between women who who moved to another block, fled, or avoided an area within the hotspot and the total number of victims of severe or mild sexual harassment. We input zeros in the dependent variable in hotspots—weeks where no instance of severe or mild sexual harassment was detected. In panel B, we consider the level, rather than the share, of women who changed their mobility behavior in response to street harassment. We present this variable for victims of severe harassment in Column (1) and for victims of mild harassment in Column (2). Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey and women’s baseline survey.

Table A16: Effect of Police Patrols 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

*Note:* The dependent variables are the share of victims with a particular characteristic observed in a hotspot week. In Column (1), we present the share of victims who have light skin, and in Columns (2) and (3), we display the percentage of victims who are wearing western clothes (jeans, skirts, one piece or party dresses) and who are below the age of 18, respectively. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey and women's baseline survey.

Table A17: Effect of Police Patrols 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

*Note:* The dependent variables are the share of perpetrators with a particular characteristic observed in a hotspot week. In Column (1), we present the share of perpetrators who are under the age of 18. In Column (2), we display the percentage of perpetrators who know the victim. Each regression includes strata fixed effects. Uniformed is a dummy that takes the value of one if a hotspot is in the uniformed treatment arm and zero if it is a control group hotspot. Undercover is a dummy that takes the value of one if a hotspot is in the undercover treatment arm and zero if it is a control group hotspot. Standard errors are clustered at the hotspot level and identified in brackets. Data source: Enumerator Observation Survey and women's baseline survey.



Table A18: Detection, Skills, and Norms Experiment Videos

Video Description	Type
Panel A: Experiment 1	
1 A man winks at a woman and makes gestures at her inappropriately which makes her uncomfortable	Mild Harassment
2 A man is making a video of a woman without her knowing	Mild Harassment
3 Two men on a bike are passing inappropriate comments at a girl which is making her uncomfortable	Mild Harassment
4 A group of men is passing inappropriate comments at a group of women which is making them uncomfortable	Mild Harassment
5 A man is staring at the woman inappropriately which is making her uncomfortable	Mild Harassment
6 A man is staring at the woman inappropriately	Mild Harassment
7 A man accidentally bumps into the woman ahead of him	Neutral
8 A man and a woman are engaged in a playful conversation	Neutral
9 A man steals a woman's phone from her bag	Property Crime
Panel B: Experiment 2	
1 A woman is shown walking to a bus stop where two men whistle at her and sing a lewd song	Mild Harassment
2 A woman is slapped by a man in a public place leaving bystanders shocked	Severe Harassment
3 A woman is walking in a public place where she is grabbed by a man	Severe Harassment
4 A woman is walking on a street where a man attempts to grab and disrobe her	Severe Harassment
5 A woman is abducted by a man on a deserted street corner	Severe Harassment
6 A woman passenger seated in a bus is touched inappropriately by a man	Severe Harassment
7 A woman traveling in a local train is harassed by a man trying to pull her saree with his foot	Severe Harassment

*Note:* This table describes the type of videos displayed to officers in the two experiments. Panel A displays the set of videos of mild, property, and neutral events. Panel B displays the types of videos used in severe and mild forms of harassment. The videos in panel A were enacted and recorded by IFMR, the videos in panel B are from CCTV footage. All videos were selected and created based on events that had been reported to SHE Teams, described by women in the pilot of the baseline survey, or identified by SHE teams to be videos reflective of situations they often encounter. All videos show women as the main victim.

Table A19: Detection and Punishment of Severe Sexual Harassment vs. Mild Forms

	(1) Detection	(2) Punish.
Severe Sexual Harassment	-0.060** (0.028)	0.024** (0.012)
Observations	1,337	1,319
Sample	Sexual Harassment	
Session FE	Yes	Yes

Table A20: Police Attitudes and Patrolling Behavior

	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

*Note:* The main dependent variables are measures of the time spent patrolling during each police visit and mean total duration of each visit. The main independent variables are a dummy that takes the value of one for hotspots that are assigned to receive patrols in uniform—Uniformed—and a dummy that takes the value of one for hotspots that are assigned to receive undercover patrols—Undercover. We interact these variables with a measure of officers’ tolerance toward sexual harassment—Police Attitudes. All regressions include strata fixed effects. Standard-errors are clustered at the hotspot level. Source: Police vehicle GPS trackers.

Table A21: Police Attitudes and Punishment

	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

*Note:* The dependent variables is an indicator of whether an officer would punish a hypothetical sexual harassment incident. The main independent variables are a dummy that indicates if the officer had to indicate their willingness to punish a mild sexual offense —Mild Sexual Harassment Film —another dummy indicating that the officer has low tolerance to sexual harassment —Police Attitudes —, and their interaction. Standard-errors are clustered at the officer level. Source: Lab experiment data.

Table A22: Summary Statistics—Detection Experiment

Variable	N	Mean	Std Dev	Min	Max
<i>Main Outcomes:</i>					
Offense Detection	3360	0.76	0.43	0	1
Perceived Detection Ease (score)	3360	0.61	0.30	0	1
Perceived Detection Ease	3360	0.72	0.45	0	1
Detection Necessity	3360	0.80	0.40	0	1
Detection Capacity Index	3360	0.72	0.27	0	1
Punitive action	3360	0.78	0.42	0	1
<i>Experiment Characteristics:</i>					
Sexual Harassment - Fast Video	3360	0.41	0.49	0	1
Sexual Harassment - Normal Video	3360	0.29	0.45	0	1
Non-Sexual Harassment - Fast Video	3360	0.19	0.39	0	1
Non-Sexual Harassment - Normal Video	3360	0.11	0.32	0	1
Total number of session participants	3360	8.10	2.01	1	12
<i>Officer Characteristics:</i>					
Age (years)	3360	34.61	8.33	20	61
Female	3360	0.19	0.39	0	1
High-rank Officer	3360	0.05	0.23	0	1
She Team Officer	3360	0.14	0.35	0	1
No Education	3360	0.00	0.05	0	1
Class 1-5	3360	0.00	0.05	0	1
Class 6-9	3360	0.01	0.08	0	1
Completed Class 10	3360	0.11	0.32	0	1
Completed Class 12	3360	0.28	0.45	0	1
Graduate	3360	0.49	0.50	0	1
Post-Graduate	3360	0.10	0.31	0	1
Social Desirability Index	3360	6.13	2.28	2	12
Low social desirability	3360	0.45	0.50	0	1
She Teams improves safety	3360	0.76	0.43	0	1
SH is a police duty	3360	0.89	0.31	0	1
Harassment deserves more policing	3360	0.54	0.50	0	1
Seconds to Complete the Experiment (High)	3360	0.25	0.43	0	1

Variable	(1) Mean SH Fast	(2) Mean SH Normal	(3) Diff SH Videos	(4) Mean Non-SH Fast	(5) Mean Non-SH Normal	(6) Diff Non-SH Videos
Age (years)	34.580 (8.255)	34.647 (8.438)	0.000 (0.314)	34.669 (8.497)	34.508 (8.065)	0.000 (0.314)
Female	0.189 (0.392)	0.192 (0.394)	-0.000 (0.015)	0.193 (0.395)	0.187 (0.390)	0.000 (0.015)
High-rank Officer	0.051 (0.220)	0.057 (0.233)	0.000 (0.008)	0.059 (0.237)	0.044 (0.205)	-0.000 (0.008)
She Team Officer	0.145 (0.352)	0.133 (0.339)	-0.000 (0.013)	0.129 (0.335)	0.158 (0.365)	-0.000 (0.013)
No Education	0.002 (0.046)	0.004 (0.065)	-0.000 (0.002)	0.005 (0.069)	0.000 (0.000)	0.000 (0.002)
Class 1-5	0.004 (0.060)	0.002 (0.046)	-0.000 (0.002)	0.002 (0.040)	0.005 (0.072)	0.000 (0.002)
Class 6-9	0.006 (0.080)	0.005 (0.072)	-0.000 (0.003)	0.005 (0.069)	0.008 (0.088)	0.000 (0.003)
Completed Class 10	0.115 (0.320)	0.110 (0.313)	0.000 (0.012)	0.108 (0.310)	0.122 (0.327)	-0.000 (0.012)
Completed Class 12	0.280 (0.449)	0.279 (0.449)	-0.000 (0.017)	0.278 (0.448)	0.282 (0.451)	0.000 (0.017)
Graduate	0.490 (0.500)	0.493 (0.500)	0.000 (0.019)	0.494 (0.500)	0.487 (0.500)	0.000 (0.019)
Post-Graduate	0.102 (0.303)	0.108 (0.310)	0.000 (0.012)	0.109 (0.312)	0.096 (0.295)	-0.000 (0.012)
Social Desirability Index	6.110 (2.290)	6.162 (2.272)	0.000 (0.086)	6.178 (2.267)	6.054 (2.311)	-0.000 (0.086)
Low social desirability	0.452 (0.498)	0.446 (0.497)	-0.000 (0.019)	0.444 (0.497)	0.459 (0.499)	0.000 (0.019)
She Teams improves safety	0.759 (0.428)	0.759 (0.428)	-0.000 (0.016)	0.759 (0.428)	0.759 (0.428)	0.000 (0.016)
SH is a police duty	0.892 (0.311)	0.895 (0.307)	0.000 (0.012)	0.895 (0.306)	0.889 (0.315)	-0.000 (0.012)
Harassment deserves more policing	0.532 (0.499)	0.541 (0.499)	0.000 (0.019)	0.543 (0.499)	0.523 (0.500)	0.000 (0.019)
Seconds to Complete the Experiment (High)	0.253 (0.435)	0.245 (0.430)	0.000 (0.016)	0.243 (0.429)	0.262 (0.440)	-0.000 (0.016)
Total number of session participants	8.054 (1.998)	8.170 (2.022)	0.000 (0.076)	8.207 (2.028)	7.930 (1.968)	-0.000 (0.076)
Observations	1,394	958	3,360	622	386	3,360

# A Ethics, Implementation, and Intervention Content

## B.I Research Ethics

The research had three study branches that required interactions with human subjects: (i) an enumerator observational survey (EOS), (ii) a police officer survey and lab experiments, and (iii) a women’s baseline survey. Following [Asiedu et al. \(2021\)](#), below we describe how we addressed various ethics concerns to ensure the safety, privacy, and referral of all study participants. All activities were developed by the researchers and implemented by IFMR.

### **Informed Consent, Safety Protocol, Withdrawal, and Referral Systems for Enumerators.**

Before the study initiation, IFMR conducted a training exercise with all enumerators. For the EOS and any survey of women, we used female enumerators; for police officers, we used male enumerators. During the training, all individuals completed five training days in which the research team informed potential enumerators of the broad study and its aims and objectives. Enumerators were blind to the experimental components and the experimental arms. The training covered general gender-based enumerator training following the World Health Organization’s guidelines and specific training on identification of sexual harassment instances in commuting areas. The training ensured that enumerators were aware of the risks, suggested and oversaw the application of mitigation strategies, and provided a series of support services for specific concerns. The enumerators were informed about the study and their individual tasks. Enumerators who initially agreed to participate in the observational survey were welcome to withdraw at any time without financial consequences or penalties. This aspect was reiterated during the training sessions and multiple times during the fieldwork. The enumerators also received a field protocol document. This guidebook was for consultation as needed during fieldwork and was a guideline for particular training sessions. It detailed daily activities during data collection, especially about the EOS; provided an overview of safety risks; outlined mitigation strategies; and highlighted key resources available to field staff during—and in some cases, after—completion of fieldwork activities. During the fieldwork activities, enumerators also had a field officer with whom to discuss any issue that might arise. Enumerators conducting the observation exercise could not be employed for more than six consecutive weeks because after piloting, it was clear that the task was challenging and enumerators could suffer social and emotional consequences. Enumerators also received support from group sessions to discuss any unpleasant experiences they encountered. Enumerators were not aware of the randomization and the treatments at each hotspot.

For all the study branches, in the event that enumerators faced street harassment themselves, they were instructed to report the case to a dedicated helpline of BHAROSA/*SHE Teams* that existed for the duration of the study. BHAROSA is a domestic violence support center for women and children. Services offered by BHAROSA include legal aid, prosecution services, medical care, and counseling services for couples and children. BHAROSA also facilitates admission to temporary shelter homes for women who seek security if there is a risk of physical violence and immediate threat to life. This is the most knowledgeable agency in Hyderabad that offers support for trauma related to harassment. Enumerators

were instructed to travel with a GPS tracking device that was monitored by the IFMR team, which was also based in Hyderabad. Enumerators were also in constant contact via mobile phone with the research assistants to discuss any potentially harmful situation. This enabled us to monitor them and ensure their safety.

The questionnaires for women (the ethics protocol is described below) and the EOS include questions regarding sexual violence. These could trigger trauma among respondents who had witnessed such violence firsthand. Along with the group sessions, safety checks, and direct communication lines to the research team and the police, we partnered with BHAROSA, described above. For the EOS, during training sessions, all associated risks along with resources for help and risk mitigation were thoroughly explained and discussed, and enumerators were encouraged to raise concerns with the lead project investigators.

The observational exercise involved having IFMR enumerators record observed instances of harassment taking place during their commute from Point A to Point B. Point A and Point B could mean home, office, hotels, hotspots, etc. These commuting areas are typical commuting places for any residence in Hyderabad. IFMR enumerators were recruited locally; as a result, they were already exposed to these commuting places as part of their daily activities. In addition, the enumerators of the observational survey were all trained to use the “Dial 100” helpline. “Dial 100” has a response time of 8–10 minutes and responds to any distress call. Apart from this, the enumerators had the personal phone numbers of police staff who knew about the study and were prepared to assist if needed. We, along with IFMR’s help, developed exercise training modules to simulate harassment situations to train the enumerators in preventive and mitigation strategies.

**Police Officers’ Survey and Experiments.** The survey consisted of data collection in a single phase. IFMR enumerators contacted police officers to make an appointment to administer the survey. At this point, and before the survey commenced, IFMR enumerators produced an identification card. Officers later received a letter from the Commissioner of Police requesting their cooperation with the enumerators. Once this happened, the survey took place at a convenient time for the officers. Consent, withdrawal, and non-response checks were incorporated into the survey. The survey did not contain any questions on personal violence victimization. All enumerators were trained in a similar fashion to that described above.

**Women’s Baseline Survey.** The baseline survey of women was administered to a subset of the general population of Hyderabad. This primary survey was administered to women aged 18 years old and over who were daily commuters in Hyderabad. The survey took place in two phases. In the first phase, IFMR enumerators approached a random selection of subjects in public places as the latter commuted to their offices, markets, place of worship, etc. If the subject agreed to participate, they were asked to answer a list of questions. This phase of the survey lasted 15 minutes and collected information on sociodemographic variables and women’s experiences of sexual harassment during their daily commute. The subjects were not asked to name a perpetrator. Instead, they were asked what was the type of relationship with a perpetrator (e.g., a stranger). To collect such sensitive data, we took the following steps:

- Sought consent to collect such sensitive data
- Allowed respondents to withdraw from the survey at any point in time
- Allowed respondents to skip questions they did not wish to address
- Ensured surveys were conducted with privacy, i.e., in such a way that no one else was aware a survey was taking place. If someone stopped nearby or was listening, the survey was stopped and reinitiated once the conditions were deemed safe by the enumerator and subject
- Ensured the respondent and enumerator could safely stop the interview at any point in time in case someone was listening or interrupted the process
- At the end of the survey, the respondent was provided with a detailed referral protocol on how to discuss instances of harassment with BHAROSA, female police, and *SHE Teams*
- All data was anonymized and encrypted, and the anonymization and decryption were stored separately.

After the initial survey was conducted in commuting locations, the second phase was conducted with the same respondents. This phase was conducted by the same enumerators to minimize risks of breach of confidentiality. Respondents were asked at the time of the first survey if they would agree to respond to more questions at a later period. If the respondent agreed, the enumerator collected the respondent's phone number and address. The respondent was then contacted for the second survey and agreed on a time and place to conduct it. If that was not possible, the survey was completed over the telephone. The second phase of the survey collected travel patterns.

## **B.II Enumerator Observation Survey**

For every visit to a hotspot, the enumerator would take note of the events observed for up to five women. The survey included the following questions:

1. Time stamp. (Capture the time you arrived at the location).
2. How many people were at the location?
3. Did you see police while you were at the location? Answer options: 1.Yes, 2.No
4. During your time at the location, did you see any other girl/woman/transgender face any harassment? Answer options: 1.Yes , 2.No. For each observed woman, please complete the following.



5. Which group did she belong to? Answer options: Girl (below 18 years old), woman (age group – 18 to 40), woman (age group 40 and above), transgender, don't know
6. What incident/incidents did you see them encounter? Answer options: Threaten to hurt (verbal threats); indecent exposure, taking pictures without consent; unwelcome comments/catcalling/whistling; inappropriate gestures or facial expressions; stalking; touching/groping/pushing; staring that makes you feel uncomfortable (ogling); attempt to intimidate (by yelling at you; smashing things; trying to make physical contact, etc.); physical abuse; abduction; acid attack.
7. How did she respond to the incident? Answer options: She called someone over the phone right after the incident; she informed the person accompanying her at the location; called out the perpetrator publicly, used any form of self-defence (pepper spray, whistle, etc.); asked for help from bystanders; she ran away from the location; she confronted the perpetrator quietly; did not see her report the incident; she responded to the incident but continued to be with the same person; she did nothing and stayed there; the woman didn't realise the incidents listed took place; others, specify.
8. Did bystanders provide any kind of help/assistance to the victim? Answer options: Yes, when they witnessed perpetrator harassing the woman; yes, but she refused the help; no, they witnessed but did nothing; no, no one else witnessed.
9. End time. Note to enumerator: Capture the time of your departure from the location.
10. GPS Location. Automatically capture location below three meters.

### **B.III Lab Experiment Protocol**

Between January and March of 2021, the research team set up a computer lab in the headquarters of the Hyderabad City Police. The lab was composed of 14 computers, separated according to social distancing rules. All computers were also separated by large cardboard blocks to avoid conversations across participants. Below we describe the protocol followed to conduct the experiments.

**Recruitment of Participants, Consent, and Incentives.** Participants were selected from a sample of respondents to the police officers' survey. *SHE Teams* officers were all invited to participate. Among non-*SHE Teams* officers, we identified officers working on similar police task forces. These included officers doing patrols for the Blue Colts task force. We randomly selected officers to invite from this subsample. All officers were summoned by letters from Hyderabad City Police, and officers also received a phone call. Officers could choose their preferred time slot to attend. Officers did not receive any cash or in-kind incentive to participate.

**General Instructions and COVID-19 Safety Protocols.** The sessions were conducted during the COVID-19 pandemic. Yet, police officers were among the priority group for vaccinations and officers were not subject to mandated stay-at-home orders. To ensure the integrity of the experiment and preserve the safety of officers, we used the following instructions.

1. Participants are asked to enter one by one in the room.
2. Participants are assigned to one computer each. Each participant's space is vacant on both sides to preserve anonymity in responses and due to Covid-19 regulations.
3. Each participant's screen is separated on both sides with cardboard separators to preserve anonymity.
4. Per session there are one lab manager and two assistants providing instructions and answering technical questions, respectively.
5. The lab is operational every week from Mondays to Saturdays.
6. We conduct three sessions every day with 8 participants per session.
7. Officers have been allocated to sessions and computers randomly by the RA using Stata.
8. Before the arrival of participants and start of the session, surveyors and research assistants took the following steps:
  - (a) Sanitize all equipment, desks, and chairs.
  - (b) Label computers from 1 to 8.
  - (c) Prepare the computers – Check for internet connection and functionality of ear-phones by playing a video on YouTube.
  - (d) Prepare attendance sheet – UID, Name, Rank ID, Date, Session Number, Time, Reporting Time of the officer, Signature, Computer Number, Temperature.
  - (e) Prepare the folder and the log file for the session. The log file should be used to enter any abnormal situation that took place in each session. Please save the file with the session ID.
  - (f) RA: make sure your laptop is charged and has an active internet connection at all times.
  - (g) RA: Configure the following accounts for each of the eight participants plus two of buffer, and set up the experiments links in each computer.
  - (h) RA to confirm if all 10 computers are ready and have a functional internet connection.
9. Upon arrival of each officer, the surveyor is required to:

- (a) Check the officer's temperature – Note it down in the attendance sheet. Officers with high temperatures should be asked to leave.
  - (b) Spray sanitizer on the officer's palms.
  - (c) Give a face mask to the officer.
  - (d) Make every officer sign the attendance sheet. Ask the officer to pick a sheet from the bowl and write down the number on the sheet in the attendance sheet.
  - (e) Ask the officer about the mobile network he/she uses and note down in the attendance sheet.
  - (f) Escort the officer to the computer which carries the same number as his/her sheet. (One of the two surveyors can take the duty of escorting the officer to his/her computer).
10. After the end of the session, the surveyor is required to:
- (a) Disinfect all computers and desk materials and restart the session with the above instructions.

**Experimental Scripts and Surveys for the Lab Session.** Below we provide a description of the events in lab experiment.

1. Greetings and general advice: Dear officer, welcome to this lab! We would like to thank you for your participation in this study which is being conducted by LEAD, a research organization. I am and these are my team members, . We will be present with you today to assist you in completing the session. We would like to inform you that the study will last for about 1 hour. This study involves playing two different games. Each game will take about 30 minutes to complete. In each of the games, you will be shown some videos and asked to answer questions based on those videos. If you answer the questions correctly, you stand to win an Amazon gift voucher worth up to Rs. 520. If you agree to participate, we would like to inform you that throughout the study, all your responses will be kept confidential and will not be shared with anyone in the Hyderabad Police or anyone outside the research team.
- Now I will read some rules of the lab while my team members prepare your computer. Do not press any button yet.
- (a) Always wear your mask.
  - (b) Do not talk once the session has begun as it might disturb other officers.
  - (c) Do not discuss your responses/doubts with the person sitting adjacent to you.
  - (d) Please do not look around to other officers either.
  - (e) If you face any issue in the middle of the experiment like computer screen hangs or instructions are unclear, etc., do not press any item on the computer. Raise your hand and someone from the lab team will come to your desk to address your problem.
  - (f) Please wear your headphones before starting the session.

Detection experiment 1: Now we will start with the first game which will take about 30 minutes of your time.

1. A lab monitor will come to enter details on the first screen. Do not enter any details on your own.
2. Do not start on your own. Wait for my announcement to start the session.
3. This experiment will involve watching some very short videos. You are requested to watch each video till the end.
4. You are not allowed to replay a video at any point of time.
5. Once you have seen and understood the information on the screen, you can go the next question by clicking the NEXT button.
6. It is necessary to answer each question to enable you to move to the next question.
7. DO NOT hit the PREVIOUS button at any point of the game.
8. These instructions are printed in the instruction's manual kept on your desk. You will be given time to read them.
9. When you reach the end of this game, do not press the submit button. Raise your hand. A lab monitor will come to your desk to submit your responses and prepare your computer for the next part of the game.

I request you to wait while my team enters your details on the screen. Please confirm if your details are correct.

Now you have 5 minutes to read the instructions manual kept on your desk. Your time starts now.

Your reading time is over. Please wear your earphones and then click the NEXT button on your screen to begin the session.

For each video officers would be asked to reply the following questions:

1. What action would you take if you were present at this location? Answer options: Make a video of this incident and take the man to the police station, Take the man to the police station, Issue a warning to this man , Escort the woman to a safe place, Woman is comfortable, so take no action, Woman is not uncomfortable, so take no action, Take an action only if the woman complains, Take no action as there is nothing problematic going on in this situation, Don't know.

2. Given these circumstances, if you were to encounter such an incident while patrolling, how difficult do you think it would be to collect evidence against the suspect in this case? Answer options: Very Difficult, Difficult, Easy, Very Easy, Not needed since nothing wrong is happening.
3. Select the option that best describes the scene depicted in the video. Answer options: 4 different options per video with only one correct answer as shown in [A18](#) , None of the above, Don't know.

Congratulations! You have successfully completed part 1 of the session.

Detection experiment 2: Now we will begin the next and last part of this session. This will take about 20 minutes of your time. If you answer the questions in this game correctly, you can earn a gift voucher worth anywhere between INR 0 and INR 520. You can use this gift voucher to make online purchases on Amazon worth the amount earned by you. This game has 2 stages and the instructions to play these games will appear on your screen. In stage 1, you will be asked to count the number of zeros on your screen. In stage 2, you will be shown some videos and asked to answer some questions based on the videos. Now, I will read some instructions:

1. Do not start on your own. Wait for my announcement to start the session.
2. Please do not change any information entered by the lab monitors on the first screen.
3. Do not press the BACK button at the top-left corner of the screen at any given point of the experiment. You cannot change your responses once submitted.
4. To proceed to the next screen, select the blue-colored NEXT button present at the bottom of your screen.
5. If you face any issue during the experiment, please raise your hand and one of us will come to your desk to address your issue.
6. When you reach the end of the game, raise your hand and a lab monitor will come to your computer to submit your responses.
7. Please wear your earphones.

I request you to wait while my team enters your details on the screen. Please confirm if your details are correct. Now, you have 5 minutes to read the instructions manual kept on your desk. Your time starts now.

Your reading time is over. Please wear your earphones and then click the NEXT button on your screen to begin the session.

For each video, officers would be asked to identify what they observed and what action they would take. The questions presented to officers were:

1. Imagine you are an officer on duty and witness the scene depicted in the video. Select the option which best describes what you see. Answer options would vary video. For video 1 in Panel of Table [A18](#) the options were: A man is looking at a woman, a man is looking at a woman inappropriately and winks, A man is looking at a woman inappropriately and winks which makes her uncomfortable, Refuse to answer.
2. If you were present in this situation, what action would you take? Answer, Warn the man and ask him to leave, Take the man to the nearest police station.

Thank you for your participation. You will receive a gift voucher equal to the amount earned by you in this game via SMS by tonight.