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Targeting Attitudes to Combat Sexual Harassment: A Randomized Intervention in the Norwegian Military

Olle Folke, Torbjørn Hanson, Åshild A. Johnsen, Andreas Kotsadam, and Johanna Rickne*

Abstract

We develop an information-based intervention against sexual harassment and test it in a randomized control trial across small groups of military recruits in the boot camp of the Norwegian military. The intervention seeks to bridge two knowledge gaps with implications for sexual harassment prevalence. We tell some recruits about their peers' beliefs that "telling sexualized jokes can be labeled sexual harassment" and about women soldiers' equal performance on military skill tests. This treatment gives lasting improvements in knowledge about what sexual harassment is and about women's job performance. The impact on sexual harassment prevalence is directionally negative but statistically insignificant. We discuss measurement error and use survey responses about a harassment scenario to argue that the intervention likely affected behavior. Our study provides the first field experiment to evaluate whether a prevention method against sexual harassment reduces prevalence in a work setting. We use insights from our research process to identify methodological pitfalls and provide guidance for future field experiments in this area.

Keywords: Sexual harassment, Randomized controlled trial, Information provision experiment.

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1. Introduction

Sexual (or "sex-based") harassment is behavior that humiliates or degrades people based on their sex or gender (Berdahl 2007). Women suffer higher rates of sexual harassment from colleagues and managers than men, and risks are the highest in male-dominated occupations and workplaces (e.g., USMSPB 1994, Fitzgerald et al. 1997, Folke and Rickne 2022, 2025). Sexual harassment imposes costs on individuals and employers that range from lower health and productivity to higher personnel turnover (Saguy and Rees 2021, Blindow et al. 2022, Folke and Rickne 2022, McLaughlin et al. 2017).

The cost of sexual harassment makes prevention urgent, but current prevention methods have been shown to be inefficient at best, and counterproductive at worst. Large employers commonly introduce grievance procedures where victims can file claims and train employees on reporting procedures and harassment definitions (Dobbin and Kalev 2019). Two key problems contribute to the failures of these methods. Few victims file claims and those who do often face professional and social retaliation (reviewed by EEOC 2016, Dodson et al. 2023). And while training raises knowledge about legal and policy aspects of sexual harassment, studies commonly find *backlash effects* in the form of increased tolerance of sexual harassment among employees who are more likely perpetrators (Bingham and Sherer 2001; Robb and Doverspike 2001, Htun et al. 2022, Kearney et al. 2004, Anton 2014, reviewed by Rawski 2016, Dobbin and Kalev 2019, Saguy and Rees 2021).

This paper develops and tests a new type of information-based intervention against sexual harassment. The intervention provides two pieces of information to reduce misperceptions related to sexual harassment and, in turn, reduce perpetration. It delivers information to junior workers as part of a research survey taken by junior recruits as part of an organizational onboarding procedure. This makes the design different from the common and costly prevention methods currently in use. The intervention does not rely on victims or bystander actions in filing complaints or intervening in harassment events. Compared with information delivered in the context of sexual harassment training or reactions to training materials, it does not present the information as such, and it avoids explicitly prescribing behaviors in ways that might trigger backlash among likely perpetrators.

We design the information intervention to fit the work context of junior employees in the Norwegian military. We collect survey data on sexual harassment behaviors among previous soldier cohorts and select the two most common behaviors as our focus. The intervention

delivered two pieces of information in a single treatment arm. This information aimed to change knowledge about sexual harassment definitions, perceptions of attitudes among peers, and attitudes about women in the military. The first piece of information informs soldiers that a plurality of their peers (soldiers in prior cohorts) agreed with the statement that "sexualized jokes can be considered sexual harassment". The second piece of information informs them that women perform on par with men on military performance tests for junior soldiers.

Delivering the information in the written survey at military service enrollment makes it substantially less salient and costly compared to, e.g., training sessions about sexual harassment. We randomize information delivery across 195 rooms (146 mixed-gender), housing a total of 949 soldiers during the 8-week boot camp that follows enrollment. We collect endline data on attitudes, experiences, and behaviors at the end of this camp. Soldiers in treated rooms receive the two pieces of information and the control group receive neither one. This design sought to maximize statistical power and reflects expectations that, despite designing the intervention to focus on the two most common behaviors, both pieces of information could affect the prevalence of various behaviors under the umbrella of sexual harassment.

Our main outcome variables measure tolerant attitudes about the sexual harassment behaviors targeted by our intervention, as well as perpetration of those behaviors by roommates against women soldiers. We collect three additional main outcome variables to study mechanisms behind a potential reduction in sexual harassment stemming from changes in attitudes or behaviors among victims and bystanders.

Our study makes some unique contributions to research on preventing interpersonal misbehavior and discrimination in organizations. We develop a new approach for preventing misbehavior by providing information to reduce important misperceptions and, in turn, affecting drivers of sexual harassment in work groups. This approach builds on seminal theories about driving factors: knowledge that specific behaviors can constitute sexual harassment (e.g., Cheung et al. 2018, Roehling et al. 2022), permissive attitudes in the work group (e.g. Pryor 1987, Pryor et al. 1993), and negative attitudes to women's competence in male-dominated occupations (Gutek and Morasch 1982; Gutek and Cohen 1987). It also draws on recent empirical evidence suggesting that a certain type of information—about *other people's attitudes*—might be an efficient tool for change (e.g., Bursztyn et al. 2020, reviewed by Bursztyn and Yang 2022, see also Tankard and Paluck 2016), as recently shown in the context of sexual harassment (Sharma 2024, Amaral et al. 2025).

We contribute to a large social science literature that evaluates how information about sexual harassment contained in training materials and courses affects knowledge and attitudes. Unlike most work in this literature, we do not rely on convenience samples of university students (Blakely et al. 1998, Bonate and Jessell 1996, Kearney et al. 2004, Goldberg 2007, Anton 2014, Diehl et al. 2014, reviewed by Roehling et al. 2022), and unlike correlational studies with data from work settings, we sidestep empirical concerns stemming from low response rates to e-mail surveys, or certain worker types selecting into training (e.g., Antecol and Cobb-Clark 2003, Cheung et al. 2018, Cronin et al. 2024). The closest study to ours is Sharma's (2024) evaluation of a training program for sexual harassment, examining both attitudes and prevalence in a field experiment within an education setting.

Our study advances the harassment-prevention literature on several fronts. First, it delivers a cluster-randomized field experiment in an actual workplace—rather than a lab or classroom—that follows the causal chain from attitudes to self-reported victimization, moving the evidence base beyond convenience samples and post-training quizzes. Second, the intervention produces a durable attitudinal effect: tolerant attitudes for sexual harassment remain 0.23 SD lower eight weeks later—an order of magnitude larger than the long-run gains documented in recent meta-analyses of compliance training (Roehling et al. 2022). Third, the same light-touch message shifts collective-action norms in a vignette scenario, and boosts everyday cooperation, lifting a pre-registered room-cohesion index, both by a similar order of magnitude (0.17-0.18 SD), suggesting that correcting misperceived peer norms can foster positive group dynamics. Behavioral point estimates in our study are negative but imprecise, and we close by discussing inference challenges that may be useful for future interventions.

The Norwegian military context offers several advantages for our research purpose. Norway's general military conscription ensures broad representation of socio-economic traits among the junior workers that we study. The introduction of female conscription in 2016 has led to a high proportion of women among these juniors, with women making up 42% in the camp studied here. This improves statistical precision compared to other male-dominated occupations with smaller shares and fewer women workers. Two other factors contribute to further reducing theoretical and empirical noise. Comparing work environments across groups in a single occupation and organization holds constant the gender-power hierarchies, procedures for preventing and handling sexual harassment, and occupation gender norms (for prior research on these antecedents, see MacKinnon 1979, Gutek and Morasch 1982, Gutek and Cohen 1987, Fitzgerald et al. 1997). Because soldiers are assigned to rooms through a carefully designed

randomization protocol that accounts for gender and other socio-demographic characteristics, group compositions are orthogonal to treatment assignment (see e.g., Dahl et al. (2021); Dahlum et al. (2025); Finseraas et al. (2016) and Finseraas and Kotsadam, (2017) for other studies using the random room allocation in the Norwegian Defense Forces).

Our results show that the information intervention produces an immediate and large reduction in tolerant attitudes toward sexual harassment. An index of tolerant attitudes drops by 0.45 standard deviations immediately after the treatment and about half the reduction remains eight weeks later (0.23 SD). This longer-term effect on tolerant attitudes is statistically significant both at conventional levels and after correcting for multiple testing. Comparing the distribution of attitudes in the control and treatment groups does not indicate any backlash effect of increased tolerance to sexual harassment among men with a high initial tolerance level. Taken together, these results indicate that a small information intervention delivered in a non-salient manner can have a lasting effect on reducing tolerant attitudes without producing backlash among those most resistant to salient sexual harassment training.

Women in groups subject to the information intervention self-report a 4-percentage point reduction (about one third) in the prevalence of sexual harassment from roommates during the 8-week boot camp. This effect is not statistically significant and we cannot exclude a null-result (p-value 0.371). Estimates on additional measures of victim and bystander attitudes and behaviors aimed at uncovering mechanisms are also (unsurprisingly) imprecise. Some results suggest that the imprecise result for harassment prevalence reflect behavioral change. A subcomponent analysis shows a larger reduction in the behavior with a larger reduction in tolerant attitudes, i.e., sexual jokes relative to negative comments on competence; and a larger reduction for these two treated behaviors relative to non-treated ones. Asking soldiers to assess various aspects of a vignette about a sexual harassment scenario indicates a greater awareness among treated soldiers about the problematic nature of sexual harassment in their work environment.

The findings from the scenario evaluations on awareness also speak to potential measurement error that pushes the prevalence estimate toward zero. Increased awareness among treated soldiers may have caused more harassing behaviors to stick in women's memory at the end of boot camp and thereby increased self-reports to attenuate the treatment effect. Our discussion on methodological pitfalls outlines this issue. It also discusses how increased awareness, in addition to any reduction in harassment prevalence, might severely complicate analysis of victim and bystander responses to harassment.

2. Empirical context and field experiment

The military exemplifies the type of male-dominated occupation and workplace where women experience the highest rates of sexual harassment from colleagues and managers (e.g., USMSPB 1994; Fitzgerald et al. 1997; Folke and Rickne 2022). Women currently make up 15% of Norway's military workforce.

Our information intervention took place at a military bootcamp in the western part of Norway, where recruits from across the country undergo checks and screenings as they enroll in military service. Troop assignment depends on the timing of recruits' arrival at the camp. Once 92 recruits have arrived to make up a troop, they are randomly assigned to rooms. This randomization schedule is stratified by gender, with restrictions in place to prevent any room from having a single female recruit. We instructed troop leaders to divide the rooms within their troop into a treatment and a control group and to ensure similar distributions of room sizes across both groups. Members of the treatment group were given a yellow sticky note on their key card. The experiment included the entire cohort of incoming recruits at the bootcamp, comprising 11 troops, 195 rooms, and 949 recruits, 42% of whom were women.

The information intervention was conducted as part of a large research survey integrated into the overall enrollment procedure at the camp. Recruits were instructed to sit at designated tables based on whether their keycard had the yellow note or not. QR codes placed on the tables directed them to different versions of the survey, which they completed using their personal cell phones.

Researchers in plain clothes (in contrast to the uniformed camp personnel) provided recruits with both written and oral information about the study. The purpose of the data collection, which included many academic studies, was described to participants as gaining "a better understanding of how the environment you have been randomly placed in — defined by your troop, room, and commanding officers — affects the well-being, motivation, and performance of recruits during their initial military service" (Full text in Appendix Section A1). The presentation emphasized the researchers' independence from the military and that the survey data would not be shared with the camp or with the armed forces. Recruits were assured that their responses were completely anonymous and that participation was entirely voluntary. Those who did not want to participate were instructed to remain seated and use their phones quietly until the 20-minute survey period ended.

The endline data were collected through an exit survey administered a few days before the conclusion of the boot camp, at which point most recruits disperse to different locations for the remainder of their service. The survey followed the same procedure as the baseline, with researchers in plain clothes explaining the research purpose and the voluntary nature of participation. Several contextual features are important for interpreting our results. Recruits took the survey before becoming acquainted with each other or knowing which rooms they would be assigned to during boot camp. The information intervention questions (shown in Table 1 below) were part of a long survey taken during a hectic day of enrollment activities. The survey was presented as an omnibus study with the ambition to "chart the values, attitudes, and preferences among military recruits with the purpose of understanding how the environment you have been randomly placed in—defined by your troop, room, and commanding officers—affects the well-being, motivation, and performance of recruits in their initial military service." These features reduce the likelihood that the information intervention would become a focal point for social discussions or that subsequent attitudinal changes would reflect experimenter demand effects or "teaching to the test" eight weeks later.[1]

3. Theory of change: The information intervention

Choice of sexual harassment behaviors. Sexual harassment is an umbrella term covering many behaviors. We employ a broad definition of sexual (or "sex-based") harassment as behaviors that humiliate or demean people based on their sex or gender (Berdahl 2007). The tripartite model of sexual harassment categorizes relevant behaviors into three types (Gelfand et al. 1995). *Unwanted sexual attention* is unwelcome verbal or physical sexual advances, *gender harassment* is verbal and nonverbal behaviors that convey hostility, objectification, or second-class- status based on gender. We focus on these types rather than the third, *sexual coercion,* which usually comes from workplace supervisors and includes behaviors linking unwelcome sex-related behaviors to threats of punishment or promises of reward.

Because sexual harassment includes many behaviors, intervening against sexual harassment becomes a question of intervening against various specific actions. We focus our intervention on the two most common behaviors in our empirical context. This ensures relevance by targeting common behaviors, and makes information delivery clearer by

[1] Moyer and Nath (1998) discuss how their field experiment about a sexual harassment training video among university students resulted in muddled treatment effects because trained participants perceived more sexual harassment than control participants even in scenarios without harassment.

sidestepping problems associated with delivering information about "sexual harassment"—an ambiguous concept without a single, clear definition in society (or in research).

We collect data on sexual harassment behaviors with the most common behavioral experiences survey, the Sexual Experiences Questionnaire (SEQ). Following best practices, we use a version of this survey developed for measuring sexual harassment in the U.S. military (SEQ-DoD and SEQ-DoDs, see Fitzgerald et al. 1999, Stark et al. 2002) and with minor adaptations to the Norwegian context (see Rones et al. 2018, and Fasting and Køber 2018 for details).[2] The questionnaire asked respondents whether they had experienced 14 distinct sexual harassment behaviors during boot camp.

Table 1 lists the behaviors alongside their prevalence rates among 780 recruits surveyed in the previous year's bootcamp cohort of 2022. Women self-report more sexual harassment than men: 43% of women and 21% of men experienced at least one of the behaviors during the eight-week camp. The most common behavior (28%) was "*Offensive or unpleasant comments about your gender or sexual orientation, for example, that you, because of your gender or sexual orientation, are not suited to do certain types of tasks or should not have the opportunity to perform certain tasks?*" and the second most common (21%) was "*That someone has told sexual jokes or stories that upset you/you found offensive/ made you feel uncomfortable?*" We focus our information intervention on these two behaviors.

[2] Modifications address a critical discussion in the literature that SEQ items should clearly state unwantedness or undesirability of the behavior (Gutek et al. 2004), reflect sexual harassment based on either gender identity or sexual orientation. Other concerns have less relevance for our survey setting and empirical approach, such as measurement problems for gender gaps in prevalence, time costs to respondents, or low respondent attention in online surveys (see Adams and Walia 2025 for a discussion of the SEQ and comparison to other measurement methods).

Table 1. Survey instrument for sexual harassment with prevalence data collected in 2022.

Survey question: During your time at the boot camp, have you, either on duty or in your spare time, experienced…	Women	Men
Offensive or unpleasant comments about your gender or sexual orientation, for example, that you, because of your gender or sexual orientation, are not suited to do certain types of tasks or should not have the opportunity to perform certain tasks?	0.28	0.06
That someone has told sexual jokes or stories that upset you/you found offensive/ made you feel uncomfortable?	0.21	0.04
Sexually charged stares or looks that upset you/ you found offensive/ made you feel uncomfortable?	0.19	0.05
That someone has treated you poorly, ignored, or insulted you because of your gender or sexual orientation?	0.15	0.04
Unwanted physical contact that upset you/ you found offensive/ made you feel uncomfortable, such as touching, petting, hugging or kissing against your will?	0.11	0.06
Comments or throwaway remarks about your appearance or body that upset you/ you found offensive/ made you feel uncomfortable?	0.11	0.05
Unwanted sexual attention (glances, throwaway remarks, jokes and teasing) about your body, your clothes, your private life, your sexual orientation or the like?	0.11	0.03
That someone has shown condescending behavior or has made demeaning or unpleasant comments or throwaway remarks to you because of your gender or sexual orientation?	0.11	0.02
That someone has tried to establish a romantic or sexual relationship with you, despite your discouragement?	0.07	0.04
Bothersome or intrusive invitations for dates, dinners or the like, despite the fact that you had said no to this?	0.04	0.01
That someone has taken or shared sexually suggestive photos/videos of you that upset you/ you found offensive/ made you feel uncomfortable?	0.02	0.01
That someone has tried to have sex with you without your consent or against your will, but without success?	0.01	0.01
That someone has had sex/intercourse with you without your consent?	0.00	0.00
Being forced into sexual acts?	0.00	0.00
Any sexual harassment behavior	0.43	0.21

Note: Data collected by the authors in 2022 for the same boot camp site as the main data collection. N(Women)= 274; N(Men)= 421. A fifth item was included in the data collection in 2023, namely "To receive or been shown unsolicited content (such as text messages, email, letter or message on social media) related to your gender or sexual orientation?"

The information intervention: targeting drivers of sexual harassment. We examine theoretical research on sexual harassment in work groups to outline three relevant driving factors. Although we chose these drivers with our two sexual harassment behaviors in mind, they together hold strong relevance across the range of behaviors in Table 1.

Our first factor is knowledge about sexual harassment definitions. Roehling et al. (2022: 7) describe how "[m]any people do not clearly understand the concept of sexual harassment. For example, they may not recognize that telling sexist jokes or repeatedly asking a coworker out on dates can constitute sexual harassment." Lilia Cortina's influential "iceberg model" describes how knowledge varies across behaviors (see Cortina and Areguin 2021). While many

people recognize sexual coercion or unwanted physical touching as sexual harassment, substantial ambiguity surrounds other, including our two behaviors of interest.

Cheung et al. (2018: 554) explain how knowledge that behaviors can constitute sexual harassment is a "prerequisite for appropriate behaviors such as reporting sexual harassment, intervening as a bystander, and not engaging in sexual harassment behavior." Several theories underpin this prerequisite role. Recognizing a behavior as potential harassment is to recognize its wrongfulness, which reduces the likelihood to transgress. The same connection between labeling and wrongfulness assessments predicts deterrence behaviors by potential harassment targets and witnesses. Whistleblower theory describes the mental process that creates a moral imperative to speak out against instances of misconduct in the workplace (e.g., Felstiner et al. 1980—1981). The first step is to "name" the behavior in the incident as a wrongful act. This lets the person mentally identify a victim (the subject to the wrongful act) and a perpetrator (who performed the behavior). This process of "naming" and "blaming" leads to the imperative of "claiming"—speaking out—against the misbehavior (see also theory on legal consciousness for sexual harassment, e.g. Blackstone et al. 2009).

Permissive attitudes to sexual harassment in social groups is a second relevant driving factor of sexual harassment. The "Person x Situation" model describes perpetration as a function of individual traits (the proclivity to sexually harass) and the social environment (local social norms) (Pryor 1987, Pryor et al. 1995). It describes how some men perpetrate sexual harassment some of the time: men with a predisposition to transgress are more likely to do so in social groups with peers holding more permitting attitudes toward the behavior. Other key theories about antecedents of workplace sexual harassment have incorporated this fundamental idea (e.g., Fitzgerald et al. 1997), and experts often describe a tolerant social environment as a primary, if not *the* primary, antecedent (Fitzgerald and Cortina 2018).

Recent empirical research in economics enforces the importance of permitting peer attitudes. Sharma (2024) identifies perceptions of other men's attitudes as an important mechanism behind reduced sexual harassment prevalence following training sessions in an education setting. Amaral et al. (2025) study street harassment in India and point to tolerant attitudes among police officers, including their ability to define "mild forms" of sexual harassment as such, as a key driver of perpetration.

The third driving factor is negative attitudes about women's job performance in male-dominated jobs. These attitudes are commonplace (Eagly and Mladinic 1994) and arise, for

example, because people conceptualize skills desirable for performing well in a specific job with stereotypical traits of its majority gender. Perceived desirable skills for jobs as a police officer, soldier, etc. become stereotypically male traits like aggression, dominance, or status competition. "Having what it takes" for the job becomes conflated with being a "real" man (Ely and Meyerson 2010) and women become viewed as less capable.

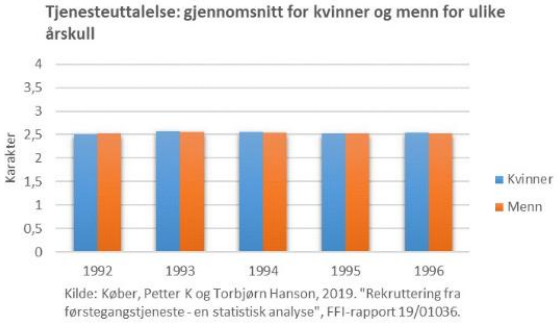
Sex-role spillover theory explains how negative attitudes about women in male-dominated jobs can affect perpetration via a salience mechanism (Gutek and Morasch 1982; Gutek and Cohen 1987). Women working in nontraditional jobs become visible role deviants in the workplace, making their presence more salient and increasing the likelihood of sexual harassment exposure. A relevant insight for understanding this mechanism is that sexual harassment is mainly an expression of power or hostility rather than an outcome of sexual attraction (Berdahl 2007, see also Pryor et al. 1995). Sexual desire is usually secondary to the (often unconscious) motivation of "putting people down and pushing them out" in terms of, e.g., professional recognition and status in the group (Cortina and Areguin2021).

Information targeting three misperceptions. Our information intervention seeks to correct misperceptions related to the driving factors for sexual harassment. We use pre-existing data and statistics to specify two pieces of information, which we deliver jointly in a single treatment arm. This section documents the misperceptions in our empirical context and explains which information we chose to address them.

Soldiers misperceive whether certain behaviors can constitute sexual harassment. The 2022 survey asked respondents about their agreement with the statement "sexualized jokes can be called sexual harassment." Response categories followed a five-point Likert scale ranging from "agree completely" to "disagree completely." While a larger share of respondents agreed with the statement (44 percent) than disagreed (30 percent), 26 percent selected the middle option, "neither agree nor disagree". Soldiers also misperceive their peers' permissive attitudes toward sexual harassment behaviors. We document this by combining data from an earlier cohort surveyed in 2022 with data from the current cohort. Members of the current cohort were informed about the 2022 cohort survey, which asked whether "sexualized jokes can be labeled sexual harassment." When asked about their beliefs regarding peers in the 2022 cohort, 33 percent incorrectly believed that more soldiers had disagreed than agreed with this statement (full question wording in Table 2, Panel A).

To correct these misperceptions, we provided accurate information about second-order beliefs—namely, that more soldiers in the 2022 cohort agreed than disagreed that sexualized jokes can be called sexual harassment. 28 percent of respondents reported being surprised by this information, indicating that it was novel, and 92 percent stated that they interpreted it as a signal of peer *attitudes*, i.e., as information that "most recruits share the perception that sexualized jokes should not be part of life in the military" (see Table 2, Panel A).

Table 2. Survey questions delivering the two pieces of information.

Questions for both groups	**Additional text/questions for treatment group**
Panel A. Information focusing on crude sexual jokes	
In 2022, we asked the recruits at the Madla Camp whether they agreed or disagreed with the statement, "Telling sexualized jokes can be called harassment." The question was posed at the end of the recruit school. What do you think they answered? □ More recruits agreed than disagreed that telling sexualized jokes can be called harassment. □ More recruits disagreed than agreed that telling sexualized jokes can be called harassment	The correct answer is: "More recruits agreed than disagreed that telling sexualized jokes can be called harassment." Only 5 percent strongly disagreed with this statement. Are you surprised that only a small minority strongly disagreed with this statement? □ Yes □ No We would like to hear your interpretation of this finding. Do you believe it indicates that most recruits share the perception that sexualized jokes should not be part of life in the military? □ Yes □ No
Panel B. Information focusing on derogatory comments about women in the military	
The Norwegian Armed Forces uses a service statement to evaluate recruits upon completion of their service. The service statement assesses various qualities such as leadership ability, responsibility, collaboration, professional competence, judgment, and overall perspective. Which statement do you believe is correct? □ Men generally receive higher ratings than women on the service statement. □ Men and women receive similar ratings on the service statement. □ Men generally receive lower ratings than women on the service statement.	When comparing the service statements of women and men over the years, we consistently find no gender difference: Men and women receive similar ratings overall. 

A third misperception concerns women's competence in military tasks. Recruits in the Norwegian Armed Forces undergo extensive performance assessments at the end of their training. When asked in the survey of the current cohort about women's and men's performance on these assessments, a substantial share (15 percent) believed that "men generally received higher ratings than women", while 76 percent believed that ratings were mostly equal, and 9 percent believed that women received higher ratings. In fact, statistics from the military assessments show no gender gap in scores. This is true across various characteristics, including

the ability to lead or levels of responsibility, teamwork, military skills, or overall judgment (Køber et al. 2019). We borrow a graph from this prior research showing no gender gap in the average score for each birth cohorts between 1992 and 1996. This graph is our second piece of information (see Table 2, Panel B).

Predicted changes in attitudes and behaviors. We pre-registered five hypotheses about impacts of the information intervention. The first expects that *the information treatment reduces tolerant attitudes toward sexual harassment* (Hypothesis 1). We specifically measure tolerant attitudes with an index variable combining responses to three survey questions. These questions ask if soldiers agree or disagree with statements that (1) "telling sexualized jokes can be called sexual harassment", (2) "a higher share of women in the defense forces lowers a country's defense ability", and (3) "women are equally capable as men to do military service" (details in Appendix Table A1).[3] These questions capture *attitudes* by measuring perceived wrongfulness of sexualized jokes and favorability to women in the military, but we acknowledge that they also include elements of knowledge and beliefs.

Our information intervention can reduce these tolerant attitudes via several channels. Indicating to soldiers that their peers consider sexualized jokes to be sexual harassment can shift individuals' own view in the direction of the peer group. Prior research shows that even without direct exposure to a fact, knowing that "others know it" pushes people to accept new information as such (e.g., Asch 1955, Acemoglu et al. 2011). A second obvious channel is that information that women score equally well on military tests should reduce soldiers' negative attitudes about women's competence in this line of work.

The second hypothesis predicts the information intervention to *lower the prevalence of sexual harassment* (Hypothesis 2), measured with the Sexual Experiences Questionnaire in Table 1. Consider a perpetrator's likelihood to harass. We view this likelihood as a function of the person's own attitude and their perceptions of the attitudes and expected behaviors of others. An increasing awareness that behaviors can constitute sexual harassment and an increased awareness that others view this behavior negatively should reduce the likelihood to transgress (the latter channel shown in empirical research by e.g., Bursztyn et al. 2020). Improved views on women's competence should reduce the likelihood of voicing negative opinions on this topic,

3 We standardize the three 5-step Likert Scales from "Agree completely" to "Disagree completely" to have a mean of zero and a standard deviation of 1. We then create a weighted average with a 50% weight on the statement about sexual jokes and 25% each for the other two statements about women's military capabilities. We standardize this weighted sum and, as pre-registered, use the three standardized subcomponents as auxiliary outcome variables.

and potentially reduce sexual harassment more broadly by perceiving women as less counter stereotypical (socially deviant) in the military profession. A potential caveat might be that men perceive the information about women's job performance as an identity threat and react with aggressive behavior to reestablish their manhood (reviewed by Vandello and Bosson 2013).

Changes in victim and bystander behaviors or attitudes are additional channels for deterring sexual harassment perpetration. Improved knowledge about sexual harassment definitions and improved view on women's competence *among women* might deter perpetration by increasing the likelihood that potential harassment targets speak out against derogatory comments and similar behaviors. The same expectation applies to witnesses—bystanders—of both genders, and might make male bystanders more likely to withhold social support for harassing behaviors in their work groups. Information updating about (un)permissive attitudes among peers may further catalyze these social processes, as the likelihood to voice disagreement will depend on own attitudes and expected reactions of (more) social support or (less) social retaliation (see e.g., Behzadi Fard et al. 2025 for a discussion of this dynamic among victims).

We outline these changes as separate hypothesis. For victims, we predict that *the information treatment increases the probability that harassment victims cope by advocacy seeking or social coping after experiencing sexual harassment* (Hypothesis 3). We measure them as self-reports that sexual harassment targets "pressed charges or notified someone" or "talked about what happened with someone you trust or with a friend to get support" (Cortina and Magley 2003, Cortina and Wasti 2005). For bystanders, we similarly predict that *the information treatment leads to an increase in active bystander behavior in sexual harassment events* (Hypothesis 4)[4], as well *increases positive attitudes toward such active bystander behaviors* (Hypothesis 5).

4. Methods

Main regression specification. For each hypothesis, we test effects for our main outcome variables and auxiliary outcome variables (further described as we present the results). We use the same OLS specification to estimate the treatment effect on each of these outcomes:

$$Y_{i2r} = \beta Treated_{i1r} + Troop_{i1} + \delta \boldsymbol{X}_{i1} + \varepsilon_{ir} \quad (1)$$

where subindex i denotes individuals, the numbers 1 and 2 denote variables measured at baseline and endline, respectively, and r is the room. *Treated* is a dummy for the treatment group

[4] Compared to the pre-analysis plan, we switch the order of H4 and H5 to improve readability.

and its coefficient β is the estimated gap in averages of the outcome variable between the treatment and control groups. Because the randomization was carried out within troops, all estimations include troop fixed effects. We also always include fixed effects for brackets of initial room size and fixed effects for four brackets of the share of women in the room. These fixed effects net out mechanical risks of sexual harassment stemming from the number of roommates and the gender composition of the room.

The variable vector $\boldsymbol{X}$ includes control variables selected from a pre-specified list of potential controls using the post-double LASSO selection approach of Belloni et al. (2014). This approach selects variables that are correlated with both treatment and the outcomes, which may improve precision in the estimates and help correct for imbalances across groups. Appendix Section A2 lists the full list of potential controls. To make the models fully saturated, we partition the covariate space and add control variables as indicator variables rather than using their multi-valued codings (Athey and Imbens 2017). If cells are too small, with less than 5 percent of the observations, adjacent cells are combined. We cluster the standard errors at the room level in all estimations. We handle missing values on the independent variables by coding the missing observation as zero and including dummy variables controlling for missing status, so that we do not lose observations.

We compare the p-values on the treatment dummy from Equation (1) to critical p-values that adjust for the fact that we have five main outcome variables. We derive these adjusted critical values from the false discovery rate method developed by Benjamini and Hochberg (1995). This method rank orders the p-values of the hypothesis from the lowest to the highest (i) and assigns critical p-values according to the formula p(i)=a*(i/m), where a is set to 0.05 and m is the total number of hypothesis (in our case 5).[5]

Measurement error. If the information intervention reduces the number of sexual harassment events, this might hinder us from correctly observing changes in victim and bystander behaviors. With fewer instances of harassment, the number of instances where victims and bystanders take action might drop simply because there are fewer instances of harassment. We assess this measurement error in our analysis by holding the sexual harassment event constant by presenting respondents with a vignette about a scenario of sexual harassment in their own

[5] To illustrate, with 5 main hypotheses and a significance level (a) of 0.05, the critical p-value would be 0.01 for the one with the lowest p-value (0.05*1/5, which is the same as a Bonferroni correction). For the estimate of the hypothesis with the second lowest p-value, the critical p-value is 0.02 (0.05*2/5) and for the fifth it is 0.05 (0.05*5/5).

work context. This lets us study if the intervention affects *attitudes* about the relevant victim and bystander behaviors. Comparing treated and un-treated respondents' attitudes for the fixed harassment situation and relating these to the estimates for self-reported behaviors can shed light on potential measurement error in the latter analysis. Asking about a range of views on the harassment situation can also illuminate changes in awareness about the negative nature of sexual harassment.

Summary statistics and randomization checks. Our pre-registered balance tests regress the treatment dummy on each of 15 pre-specified variables measured at baseline. Each regression also includes the fixed effects for troops as these are strata variables within which rooms were allocated. The results in Table 3 show no significant estimates for 14 of the 15 variables. A small gap of 3 percent of the treatment mean (0.13 SD) in recruits' preferences for living in a gender-mixed rooms is different from zero at the 10% significance level. With 15 variables tested it is not surprising to have one variable being different at the 10 percent level of significance. A joint F-test fails to reject the null hypothesis that the full list of variables cannot jointly predict treatment status.

We have baseline information for 949 individuals, including their room and troop assignments. Not everyone completes the bootcamp training, and in our sample, 78 recruits had quit by endline. In addition to attrition, some observations are missing because recruits left specific questions unanswered, and at wave 2, some individuals missed the survey due to illness. Importantly, attrition is not correlated with treatment status or gender, nor is it differentially correlated with treatment status for men and women.[6]

[6] Regressing a dummy variable for quitting on treatment status and troop fixed effects gives a coefficient of 0.0093 (p-value = 0.60). Regressing attrition on treatment, a female indicator, and their interaction (with troop fixed effects and room-clustered SEs) yields coefficients of 0.011 (p = 0.67) for female, 0.022 (p = 0.36) for treatment, and −0.031 (p = 0.39) for the female × treatment interaction.

Table 3. Summary statistics and balance tests.

DV: Dummy for belonging to the treatment group	Treatment group (96 clusters)		Control group (117 clusters)		Pairwise t-test (195 clusters) (1)-(2)	
Independent variables: Listed below	Mean (SD)	N	Mean (SD)	N	P-value	N
	(1)		(2)			
Attitude about gender-mixed rooms	3.25	460	3.25	486	0.97	946
	(1.09)		(0.83)			
Family social rank	6.77	460	6.88	488	0.171	948
	(1.19)		(1.23)			
Female	0.42	461	0.42	488	0.935	949
	(0.39)		(0.45)			
High school GPA	4.57	454	4.54	479	0.661	933
	(0.66)		(0.63)			
Immigrant background	0.07	460	0.05	487	0.471	947
	(0.22)		(0.23)			
Father employed	0.95	460	0.94	484	0.326	944
	(0.21)		(0.23)			
Mother employed	0.93	460	0.93	484	0.906	944
	(0.25)		(0.27)			
Father higher education	0.61	460	0.65	486	0.217	946
	(0.51)		(0.49)			
Mother higher education	0.75	460	0.75	486	0.836	946
	(0.44)		(0.38)			
Plan for higher education	0.75	461	0.72	488	0.188	949
	(0.41)		(0.45)			
Plans to continue military service	1.90	461	1.89	488	0.859	949
	(0.57)		(0.60)			
Suited for military service	3.60	461	3.57	488	0.449	949
	(0.53)		(0.59)			
Motivated effort in military service	8.36	461	8.26	488	0.417	949
	(1.74)		(1.71)			
Consider working in Armed Forces	3.77	461	3.74	488	0.745	949
	(1.18)		(1.21)			
Share of women in the room	0.41	461	0.42	488	0.632	949
	(0.39)		(0.44)			
F-test of joint significance (F-stat)					0.96	
F-test, number of observations					831	
F-test, number of clusters					191	

Note: The table shows estimates of Equation (1) with the treatment dummy as the outcome variable and separate specifications with the right-hand side including each of the variables listed in the table plus fixed effects for troops. The number of clusters was lower for the regression for preferences for living in gender-mixed rooms, 90 for the treatment group and 116 for the control group.

5. Results

Impacts on tolerance of sexual harassment. Figure 1 shows estimated treatment effects for the index of tolerant attitudes toward sexual harassment. The top part shows our validation tests for immediate impacts on attitudes in the baseline survey, and the bottom part shows the main results for attitudes at endline. Appendix Tables A4 and A5 show the regression outputs corresponding to Figure 1, and Tables A6—A7 show that the results are robust for regression specifications including only troop fixed effects (A6) and including all control variables (A7).

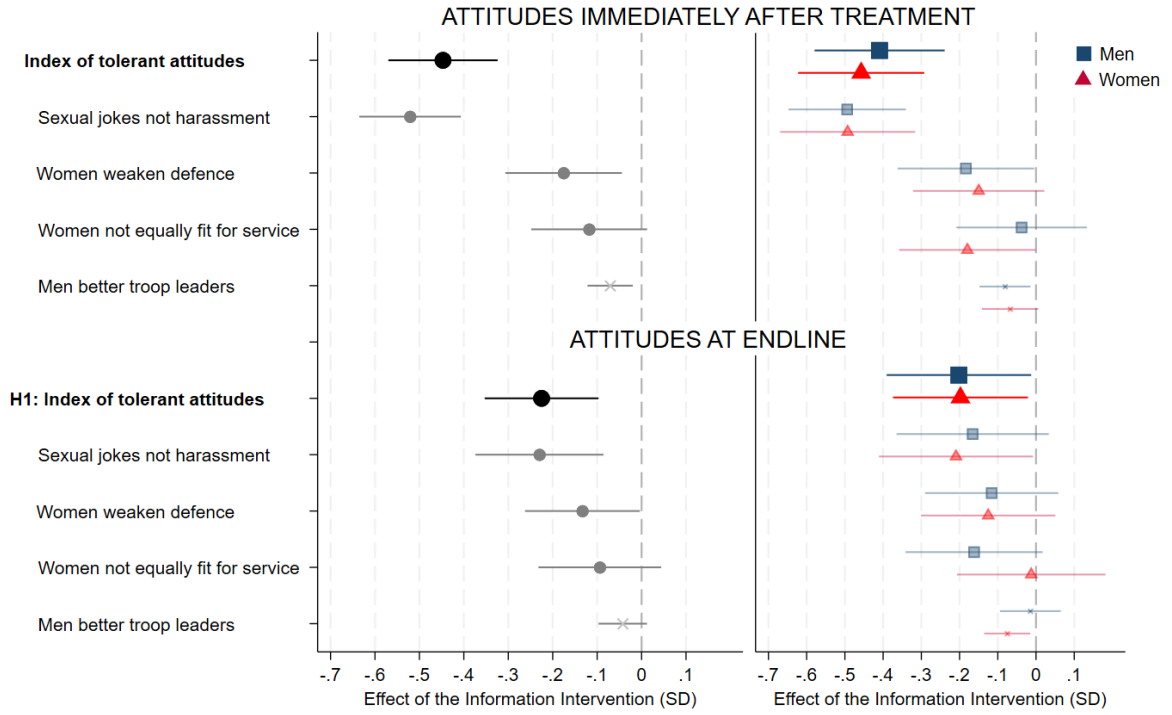


Figure 1. Effects of the information intervention on tolerant attitudes for sexual harassment.

Notes: This figure presents coefficient estimates for the treatment indicator from Equation (1). Each point corresponds to a separate regression using one of the attitudinal outcomes shown on the left axis. Horizontal bars indicate 95% confidence intervals. The "Index of tolerant attitudes" is a standardized composite of three items: (i) "Telling sex-related jokes can be called sexual harassment" (reverse-coded so higher values indicate more tolerant attitudes); (ii) "A higher share of women in the defense forces lowers a country's defense capacity"; and (iii) "Women are equally capable of military service as men" (reverse-coded). The preregistered measure "H1: Index of tolerant attitudes" is constructed in the same way. The left panel displays estimates for the full sample; the right panel displays the same set of coefficients separately for women and men. The pre-specified auxiliary outcome "Men are better troop leaders" is also shown in the figure (not part of the index). Sample sizes are: baseline N = 948, clusters = 195; endline N = 854, clusters = 191. By gender: women baseline N = 394, clusters = 146; women endline N = 359, clusters = 143; men baseline N = 554, clusters = 183; men endline N = 495, clusters = 175. Corresponding regression output is reported in Appendix Tables A4–A5.

The results for attitudes at baseline validate that the information intervention shifted the intended attitudes in the intended direction. Soldiers who received the treatment report less tolerant attitudes toward sexual harassment immediately thereafter. The harassment attitude index is 0.447 standard deviations lower in the treatment group (p-value=0.000) and reductions

also occur for the three index subcomponents. Treated individuals are less likely to disagree with the statement that sexual jokes can be considered sexual harassment (-0.521 SD, p-value 0.000). They are also less likely to agree that a higher share of women in the military forces lowers defense capacity (-0.175 SD, p-value 0.01), and less likely to disagree with the statement that women are equally capable of military service (-0.118, p-value 0.076).

The results for attitudes at endline show that about half of the immediate reduction in the index for tolerant attitudes remain eight weeks later (-0.225 SD). The p-value on this estimate (0.001) is clearly below the critical value prescribed by our pre-registered correction for multiple testing (0.010). This implies strong support for our hypothesis that the information intervention reduces tolerant attitudes towards sexual harassment.

Among the three index subcomponents, the largest reduction in tolerant attitudes at endline occurs for attitudes about sexual jokes (-0.230 SD, p-value 0.002) and smaller reductions occur for attitudes about women's competence in the military (-0.133 SD, p-value 0.043, and -0.094 SD, p-value 0.182). For the auxiliary outcome listed in the pre-analysis plan of answering "men" on a question about which gender makes for the best leaders of military troops, we find a reduction of 0.042 standard deviations (p-value 0.126).

The right side of Figure 1 splits the analysis by binary gender and documents that the information intervention reduces tolerant attitudes in both groups. The shift in the attitude index at the end of the bootcamp is clearly visible for men (0.202 standard deviations, p-value 0.037) and women (0.198 standard deviations, p-value 0.028). The results for relatively stronger effects on attitudes about sexual jokes than about women's military competence also apply to both genders.[7]

We can assess which part of the distribution of tolerant attitudes that shifts by comparing distributions of attitudes by treatment status and gender at baseline and endline (see Appendix Figure A1). The immediate reduction in tolerant attitudes among men partly reflects reductions among men with the relatively high tolerance levels, and this reduction in the part of the distribution is also visible in the endline data. There is no evidence that the treatment *increased* tolerance among the men with initially high values. Our low-salience method of delivering the information treatment in a survey seemingly resulted in less backlash among highly intolerant

[7] At endline, there is no treatment effect on women's attitudes about women being equally capable of military service. The vast majority of women in both the treatment and control groups (96.4 percent) agree or agree strongly that women are equally capable.

men compared to other prevention methods, such as training sessions or materials about sexual harassment that make the topic and intention salient.

Impact on sexual harassment prevalence. Our outcome variable for *sexual harassment prevalence* combines responses on the Sexual Experiences Questionnaire with a follow-up question about perpetrator identity. The main outcome variable is a dummy variable set to 1 if a woman self-reported, from a person residing in the same room as them, either unwanted sexual jokes (Item 2 in Table 1), gender harassment directed at her competence (item 1 in Table 1) or "negative comments about your qualifications or competence" (this behavior was measured by a separate survey question). We use dummies for each of these three behaviors as auxiliary outcomes. Table A1 provides details about the variable coding.

The results in Figure 2 suggest that the intervention reduced women's exposure to the behaviors targeted by the information intervention by 3.7 percentage points, which corresponds to a 29 percent reduction relative to the 12.6 percent prevalence in the control group. While the effect is large relative to the mean in the control group, it is small relative to the variance in the data. The estimated reduction corresponds to 12 percent of the sample standard deviation (-.037/0.321), which is well below our pre-registered minimum detectable effect of 26 percent of a standard deviation. This means that the estimate is highly imprecise, and with a p-value of 0.370, we cannot exclude a null-effect or establish support for hypothesis 2.[8] While the magnitude of the point estimate indicates a potentially large and meaningful reduction in sexual harassment prevalence from the low-cost information intervention, the results also underscore the importance of follow-up studies with greater statistical power to evaluate this promising prevention approach.

Three additional results are relevant for reflecting on whether the information intervention reduced sexual harassment prevalence. First, the subcomponent estimates in Figure 2 indicate a larger reduction in unwanted sexual jokes than in gender harassment related to competence. The former shows a 4.1 percentage point reduction relative to a benchmark 6.0 percent prevalence in the control group (p-value 0.156). The size of this treatment effect implies a removal of 2 out of 3 cases of this harassment behavior. This larger reduction of sexual jokes is

[8] Pre-registered alternative outcomes that go beyond the behaviors targeted by the treatment show negative and imprecisely estimated treatment effects (regression results in Appendix Table A9). Self-reports of any sexual harassment behavior from a roommate declines by 2.3 percentage points relative to a control mean of 15.8 percent, and the likelihood of observing a female roommate being harassed by another roommate drops by 1.2 percentage points relative to a control mean of 4.3 percent. Neither estimate comes close to statistical significance at conventional levels.

consistent with the larger reduction in tolerant attitudes toward this behavior observed in Figure 1. Second, findings from other pre-registered analyses show smaller treatment effects when widening the prevalence measure to include any of the behaviors in the Sexual Experiences Questionnaire. Third, the intervention seems to have triggered greater awareness about the negative nature of sexual harassment. We further discuss these results below.

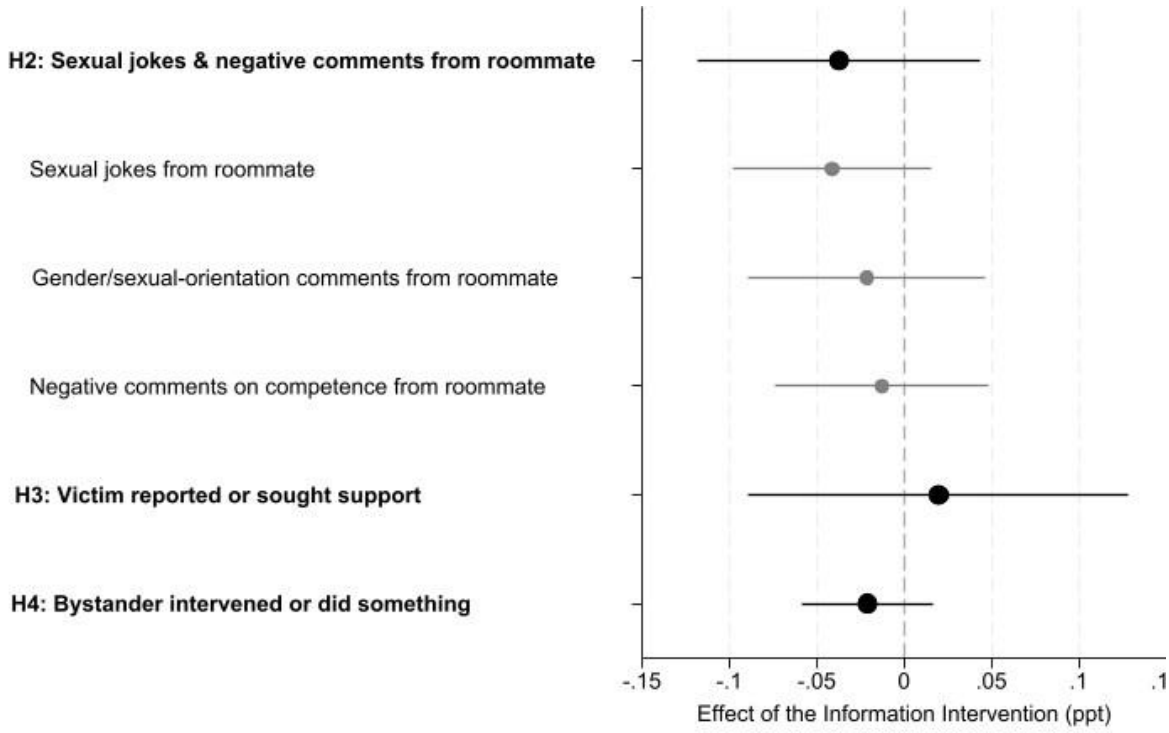


Figure 2. Effects of the information intervention on behavioral outcomes.

Notes: The figure shows estimates from Equation (1) for the binary outcome variables listed on the left. Variables corresponding to the paper's main hypotheses are denoted H2–H4, auxiliary outcomes are shown in gray. H2 measures the *prevalence of sexual jokes and negative comments from the roommate* and is an index constructed from three items: (1) whether the roommate made sexual jokes or stories that upset, offended, or made the respondent uncomfortable; (2) whether the roommate made offensive or unpleasant comments about the respondent's gender or sexual orientation; and (3) whether such comments suggested the respondent was not suited to perform certain tasks. The fifth coefficient in the figure corresponds to H3, which measures whether a harassment victim filed a complaint or talked with someone to get support. The sixth coefficient corresponds to H4, which measures whether a bystander intervened or did something when witnessing sexual harassment. Variable coding is reported in Appendix Tables A2 and A3. All regressions use women respondents except for the analysis of bystander intervention (H4). Sample sizes: *N*(Women)=359, Clusters=146; *N*(All)=858, Clusters=191. Regression output appears in Appendix Table A8.

Victims and bystanders. In the control group, 9 percent of respondents in mixed gender rooms report witnessing sexual harassment of a female roommate, compared to 6 percent in the treatment group. The remaining respondents report either never witnessing such situations or responding "do not know" in similar proportions across groups. This difference is not statistically significant (Table A9, column (4), third panel; p = 0.122). Among women, the implied reduction in witnessed incidents is substantial—about 45 percent relative to the control

mean (0.062/0.137)—corresponding to roughly one-fifth of a standard deviation (0.062/0.344), but also imprecisely measured (p-value 0.147).

We measure *victim coping behaviors* with two follow-up questions to the Sexual Experiences Questionnaire. We set a dummy for active coping behavior equal to 1 for women who self-report harassment and also self-report that they either "pressed charges or notified someone" or "talked about what happened with someone you trust or with a friend to get support", and otherwise zero (coding details are in Appendix Table A2). The estimated treatment effect on this outcome is small and highly imprecise: an increase of 2.0 percentage points relative to a control group mean of 21.3%, and a p-value of 0.721 (Table A8, column (5)). The same null-results apply to dummies for each of the two coping behaviors (Table A9, columns (2)-(3)).

If the treatment lowers the prevalence of sexual harassment, this mechanically reduces the number of times that women in the treatment group can engage in active coping behaviors relative to women in the control group. Restricting the analysis of coping behaviors to only include the women who self-report sexual harassment mitigates this source of measurement error. In this alternative sample, the point estimate is larger but remains statistically insignificant (0.08, p-value 0.401).

We measure *self-reported active bystanding* using an indicator equal to 1 for soldiers who self-report witnessing sexual harassment as well as "intervening or doing something" in response to that situation, and 0 otherwise (details in Appendix Table A2). Figure 2 shows an estimate with the opposite sign of our prediction: a 2.1 percentage point reduction in active bystanding. This effect is large relative to the control group mean of 6.7 percent with a p-value of 0.277 (Table A8, column (6)). For the alternative outcome of observing a roommate engage in active bystanding in a situation with sexual harassment between roommates, we find a similar negative effect of 2.7 percentage points (Table A9, column (6), p-value 0.126).[9] While responses for the vignette survey question suggest measurement error from reduced prevalence, as above, the structure of our survey questions regrettably precludes a sample restriction to witnesses only.

[9] An analysis of auxiliary outcomes for social norms on bystanding show no clear findings (results in Appendix Table A9 and variable details in Table A2).

Bystanding attitudes and discussion of measurement error. We use a vignette survey question to test our fifth and final hypothesis about bystanding attitudes and to discuss measurement error in our hypothesis tests.[10] The vignette presents a scenario drawn from recent media reports on a case of sexual harassment among Norwegian youth in military service. Besides measuring attitudes about bystanding (for hypothesis 5) we also measure knowledge about sexual harassment definitions (for a different behavior than the main analysis), and attitudes to victim deterrence behaviors.

We split the scenario into two parts describing one milder and one more severe sexual harassment behavior. We ask about knowledge of definitions and light-touch deterrence behaviors by the victim for a behavior of similar severity to the ones in our main analysis. We then ask about formal complaints and bystanding behavior for a more severe behavior, which is more clearly sexual harassment and, unlike the milder form, would be more likely to incur formal complaints from the victim or active interventions from bystanders.

The vignette states that [*t]he following situation occurred in a room like yours during boot camp training. After the training session is over, the recruits return to their rooms. A male recruit puts his female roommate in an uncomfortable situation by shouting to her "Can you pull up your sweater, please, I want to see your tits".* Soldiers rate three statements on a scale from (1) *strongly agree* to (5) *strongly disagree*: "This situation was sexual harassment", "The woman should just let the situation go", and "The woman should confront the man and clearly say that this behavior is not OK".

After the first three scenario evaluations, the vignette text asks recruits to "*[i]magine that the man did not give up, and despite the woman trying to fend him off, he managed to touch her anyway*". This is followed by three additional statements to rate: "If there are others present in the room, they should clearly tell the man that this is not OK", "Given that the reporting of the recruit would have clear consequences for him, the woman should file a complaint", and "If there were others present in the room who did not react to the situation, they would be co-responsible". We transform the variables to Z-scores and test the fifth hypothesis with ratings of the final statement about *bystander co-culpability*.

[10] The pre-analysis plan also outlined an exploratory analysis of women's career ambitions and people's views on the social cohesion or their rooms. Appendix Table A3 and Table A10 lists these outcome variables and shows the regression results. We see small and non-significant results for career ambitions. The estimate on an index of group cohesion shows an improvement of 0.183 SD with a p-value of 0.036 (Table A13, column (4)), see section A4 in the Appendix.

Table 4 presents the results from the scenario evaluations. Focusing on the main outcome variable first, soldiers in treated rooms are 0.117 standard deviations more likely to agree that bystanders are co-culpable for the severe harassment situation in our scenario. The p-value of 0.081 falls above our adjusted critical p-value of 0.02, and we cannot reject a null-effect on attitudes about active bystanding (no support for Hypothesis 5). The treatment effect on agreeing with the statement that bystanders should intervene is also positive at 0.123 SD and has a similar-size p-value of 0.063. As already noted above, the fact that attitudes appear to move in favor of active bystanding suggests that the negative estimate on self-reported active bystander *behaviors* may be a product of measurement error.

Beyond our specific hypothesis on attitudes about bystanding, the overall results from the evaluations of the harassment scenario indicate that the information intervention reduced tolerance for sexual harassment beyond attitudes about the specific behavior targeted by the treatment.[11] All the estimates in Table 4 go in the same direction and four out of six are statistically significant at the 10% level. Combining all six statements to a single index (not pre-registered) gives a large and precise treatment effect of nearly 0.2 standard deviation and a p-value of 0.003. Notably, the statements with the smallest and most imprecise treatment effects concern whether the victim should confront the perpetrator or not. These small estimates might reflect enduring views that confrontations will mainly harm the victim rather than sanction the perpetrator. A large and precise treatment effect (0.169 SD, p-value 0.016) for whether the victim should file a formal complaint supports this interpretation, because that statement clearly explains that the formal report will carry negative consequences for the harasser.

Taken together, the results from the scenario evaluations show that the information intervention raised awareness about the problematic nature of sexual harassment situations. In addition to improving knowledge about definitions, it seems to have strengthened norms of collective accountability. The most pronounced change is a stronger expectation that the victim files a formal complaint. Men chiefly move on the duty of bystanders to step in, while women become more likely to favor reporting by victims and holding passive by-standers responsible (see Appendix Section A3 for these results). These attitudinal shifts are consistent with the

[11] Regarding the first statement that "this situation was sexual harassment", the relatively small coefficient and imprecise results compared to the main analysis of tolerant attitudes likely reflect the specific harassment behavior in the vignette. About 80% of soldiers in the control group marked the highest value on the Likert Scale and were thus "immune" to the treatment. Assuming the same distribution in the treatment group, only 20% of the soldiers had attitudes that could be affected by the treatment.

observed—but imprecisely measured—decline in sexual harassment prevalence by suggesting that the local social climate became less permissive of misconduct. At the same time, the very rise in awareness that underpins such norm changes can inflate victims' recall of marginal incidents, potentially dampening measured treatment effects on prevalence. The following section discusses how such awareness-induced measurement error complicates inference and what future field experiments do to address this concern.

Table 4. Effect of the information treatment on evaluations of a sexual harassment scenario.

Dependent variable (SD):	This situation was sexual harassment	The woman should let the situation go (rev)	The woman should confront the man	Bystanders should tell the man off	The woman should file report	**H5: Bystanders are co-responsible for the situation**	**Index**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treatment	0.135	0.094	0.086	0.123	0.169*	0.117	0.192**
	(0.074)	(0.070)	(0.073)	(0.066)	(0.070)	(0.067)	(0.064)
Observations	856	856	857	857	856	856	858
Clusters	191	191	191	191	191	191	191
Troop FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Appendix Section A2 lists the control variables for the LASSO selection procedure. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001. For results on men and women separately, see Appendix Section A2.

6. Challenges for field experiments to prevent sexual harassment

Few studies use experimental methods to evaluate the efficiency of prevention methods against sexual harassment. Moreover, these studies usually evaluate impacts on attitudes rather than impacts on sexual harassment prevalence (reviewed by, e.g., Bondestam and Lundqvist 2020, Roehling and Huang 2018; but see Sharma 2024 for a notable exception). The analysis in this paper has shown that field experiments on prevalence face empirical challenges that experiments on attitudes do not. This section outlines two pitfalls that should be addressed in future research.

If the prevention policy reduces tolerant attitudes about sexual harassment, this may bias the treatment effect on harassment prevalence toward zero. This challenge stems from the likely impact of attitudes (and knowledge) on self-reported victimization. Lower tolerance increases

awareness and makes a person more likely to recall harassing behaviors when asked about them at endline, as these behaviors now stand out as problematic elements in the work environment. For example, a policy that makes people view sexual jokes as sexual harassment will make the same people more likely to notice such jokes in their work environment and raise their self-reports of experiencing them. This pushes harassment prevalence upward in the treatment group and makes it harder to capture a potential reduction in actual harassment relative to the control group. It is a well-established fact that people's awareness and views on sexual harassment affect their likelihood to self-report experiences in standard survey instruments like the Sexual Experiences Questionnaire (e.g., Ilies et al. 2003).

We need methodology to address measurement error from changes in awareness. This is particularly urgent because awareness—embodied in knowledge, attitudes, and beliefs about sexual harassment—is a key pathway for prevention policies to reach their intended goal of harassment reduction. Using "objective data" to measure prevalence is not a viable option, because only a small proportion of harassment victims and bystanders make formal complaints (reviewed by the EEOC 2016). Designing interventions to target behaviors for which most people already have high awareness may also be problematic since these behaviors are often the least common, for example the cases of serial sexual coercion at the center of the #MeToo movement. Nevertheless, subsets of data on harassment experiences from research subjects with high awareness might be useful to benchmark the measurement error while solid methodologies to address the problem are unavailable.

A second empirical pitfall applies to treatment effects on victims' and bystanders' behavioral responses in harassment situations. These treatment effects may be biased toward zero if the policy under evaluation leads to a reduction in the prevalence of sexual harassment. In this study we saw attitudes about these behaviors moving in ways consistent with behavioral changes, but small and imprecise changes in victim and bystander behaviors in the direction of *less* active responses to harassment events. The two seemingly contradictory results are consistent with a situation where a prevalence reduction mechanically lowers the number of situations where victims and bystanders can take action.

A survey structure that allows sample restrictions to harassment victims and/or bystanders and a comparison of estimates in subsamples of people who experienced or witnessed harassment is helpful for detecting measurement error from a reduced harassment prevalence. But this step does not fully solve the problem since the composition of harassment behaviors may change between the treatment and control groups. If the policy being evaluated leads to

increased awareness, this may cause changes in the *composition* of *recalled* behaviors and endline. Treated subjects may recall more behaviors on the margin of severity, and these may be less likely on average to merit active responses. These two issues—increased awareness and decreased prevalence—both contribute to attenuating potential treatment effects on victim and bystander behaviors and should be further addressed in future research. We anticipated these challenges and discussed them already in our pre-analysis plan, and our results demonstrate that including vignettes that hold the harassment event constant may be a viable solution. However, we did not fully foresee the extent to which these issues could attenuate our ability to detect *behavioral* effects. Future research should account for this measurement error when calculating required sample sizes in statistical power calculations. We also need methodology to adjust treatment effect sizes for this measurement error, since effect sizes are key to understanding and comparing the efficiency of different prevention methods.

7. Conclusions

This paper contributes to existing research on sexual harassment by developing and testing a new type of prevention method based on non-salient delivery of information. We run (to our knowledge) the first field experiment on sexual harassment prevalence in a work context. These types of experiments represent a research frontier where economists are well-positioned to contribute important new knowledge. While our experiment finds solid evidence that the information treatment lowered tolerant attitudes about sexual harassment, imprecise estimates for sexual harassment prevalence prevent clear conclusions on that key question. We draw on challenges in our empirical approach to argue that future field experiments—in work, education, or other settings—should seek to avoid methodological pitfalls associated with awareness and prevalence that bias treatment effects toward zero.

Our paper documents that information delivered in a non-salient manner can reduce tolerant attitudes about sexual harassment in a long-lasting way. These results echo a growing literature on information provision experiments in other domains than sexual harassment (recently reviewed by Haaland et al. 2023). Our results indicate that information about other people's attitudes were more efficient than objective statistics for producing the attitude change. Future research might focus on peer attitudes to further explore this promising type of intervention.

Experts on sexual harassment tend to agree that "knowledge about harassment and recognition of behaviors as harassment represent critical first steps in preventing sexual

harassment" (Cheung et al. 2018: 536). Such knowledge and awareness empower bystanders and victims to act against perpetrators, reduces the social stigma of doing so, and provides grassroots support for managers to act decisively against sexual harassment in the workplace. Our study shows that a non-salient delivery of information to change attitudes may allow doing so without producing backlash among people who might resist more salient prevention strategies. This, together with the call for methodologies to address empirical challenges in field experiments on sexual harassment, is the main conclusion of our study.

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APPENDIX: SUPPLEMENTARY MATERIAL

Section A1. Translated invitation letter to the survey

Information about the survey

You are hereby invited to take part in a survey that maps values, attitudes, and preferences among recruits at KNM HH. The purpose is to better understand how the environment you have been randomly placed in —defined by platoon/squad, room, and command staff—affects well-being, motivation, and performance for recruits in their initial period of service.

The survey is a collaboration between the Norwegian Defence Research Establishment (FFI), the Frisch Centre, and KNM HH. How well do soldiers in the Armed Forces thrive? How motivated are they for service, and how can motivation be increased? What culture(s) and socialization processes do soldiers encounter during service, and how are these experienced? These are the questions we aim to answer with this survey.

The survey consists of three parts: Part 1 is carried out upon reporting (today), Part 2 after approx. 8 weeks of service, and Part 3 toward the end of service. Each part involves completing a questionnaire. The answers from each part of the survey will be linked together. In addition, the survey responses will be linked to the results of various tests and tasks conducted at the individual and group levels during recruit school (boot camp). All personal data will be treated confidentially. No one in your unit, at KNM HH, or in the Armed Forces will be able to trace your answers back to you. The information will be deleted when the project is completed. The number you are asked to register during the survey (your recruit number) is used only to link your answers across the different parts of the survey. You will not be identifiable in publications of the survey results, and information about specific individuals will never be presented externally.

Participation in the survey is voluntary. After you have completed the questionnaire, you will be asked to give your consent for us to store and process your responses. You may stop the survey at any time. If you do so, your responses will not be stored.

If you have questions about the survey, contact Torbjørn Hanson at the Norwegian Defence Research Establishment (FFI) at **torbjorn.hanson@ffi.no**.

Section A2. List of control variables for the LASSO selection procedure

- ***Attitude towards living in mixed gender rooms***: Based on the question: "To what degree do you prefer to live in a room where everyone has the same gender as you?" The answer categories are on a five-point scale from Strongly prefer that everyone is of the same gender to Strongly prefer a mixed gender room. We will create up to four dummy variables but ensuring that at least 5 percent of the individuals are in each variable (if not, we combine the categories).
- ***High social status***: A dummy for answering high on the question: "In Norway there are groups that are more or less at the bottom and groups that are more or less at the top of the societal ladder. Below you see a scale that goes from bottom to top. If you think about the family you grow up in, where would you place it. Scale (1=bottom to 10=top). We will transform this into a binary variable by splitting it in a way that retains the ordering while it minimizes the difference in number of observations between the two categories.
- ***Female***: A dummy variable equal to one if the respondent is female.
- ***High (school) GPA***: Self-reported grades from high school at baseline, equal to 1 if grades are above median and zero otherwise.
- ***Immigrant background***: A dummy equal to one if the individual or any of their parents are born abroad.
- ***Mother and Father employed*** (2 variables): Based on the question: "Are your parents working?" Original: 1= Yes, both, 2=My mother is in work, my father is not, 3=My father is in work, my mother is not, 4=No, neither of them is in work. Recode: We recode into two variables: Mother employed (1/2=1, 3/4 = 0) and Father employed (1 and 3=1, 2 and 4=0)
- ***Mother and Father with high education*** (2 variables): Based on the question: "Do your parents have higher education (university/college)?". Original: 1= Yes, both have higher education, 2=My mother has higher education, my father has not, 3= My father has higher education, my mother has not, 4=No, neither of them have higher education. We recode the answers into two variables: Mother with high education (1/2=1, 3/4= 0) and Father with high education (1 and 3=1, 2 and 4=0)
- ***Plan higher education***: Based on the question: "Do you plan to take higher education?" Original: 1=Yes, 2=Don't know, 3=No. We recode the answers such that 2 and 3 equal 0.

- ***Plan continue military service***: A binary variable equal to one for those who are considering to continue in the armed forces (answer 1 "Yes" or 2 "Maybe) and zero otherwise (answer 3)
- ***Suited for military service***: A binary variable equal to one for the ones fully agreeing (1) with the statement "I believe I have what it takes to carry out service in the Armed Forces", otherwise 0 (answer 2 to 4).
- ***Motivated effort in military service***: A binary variable equal to one for those who respond that they are strongly motivated (9 or 10) on the question ("How motivated are you to make an effort in the Armed Forces?"). Those answering 1 to 8 are coded as zero.
- ***Consider working in Armed Forces***: We ask recruits whether they would consider working in the armed forces at a later stage in your life, and code all positive answers (4 to 6) as yes and the other answers (1 to 3) as zero.
- ***Fixed effects for the number of women in the room***.
- ***Fixed effects for combinations of room size and the number of women***. We include fixed effects for all combinations of the number of individuals and the number of women in the room for which there is both a control room and a treated room. For the combinations that there is not at least one room of each type, we will group the most similar rooms, according to the scheme shown in Table 3.

Table A1. List of outcome variables: Tolerant attitudes and sexual harassment prevalence.

	Variable name	Coding
1. Main	**Index of tolerant attitudes**	This index is a Z-score of a weighted sum of three standardized variables (auxiliary outcomes 1.1—1.3 below). We put 50% weight the statement about sexual jokes (1.1) and 25% weight each on two statements about negative views on women's capabilities in the military (1.2 and 1.3).
1.1 Auxiliary	Telling sex-related jokes can be called sexual harassment (rev)	Z-Score transformation of a 1—7 Likert Scale from 1 for "Disagree completely" to 7 for "Agree completely" with the statement that "Telling sex-related jokes can be called harassment".
1.2 Auxiliary	A higher share of women in the defense forces lowers a country's defense capacity	Z-Score transformation of a 1—5 Likert Scale from 1 for "Disagree completely" to 5 for "Agree completely" with the statement that "A higher share of women in the defense forces lowers a country's defense ability".
1.3 Auxiliary	Women are equally capable of military service as men (rev)	Z-Score transformation of a 1—5 Likert Scale from 1 for "Disagree completely" to 5 for "Agree completely" with the statement that "Women are equally capable as men to do military service".
1.4 Auxiliary	Men are better troop leaders	Dummy variable equal to 1 for answering "Men" on the question "Which sex do you think is best at troop leadership?" and 0 for answering either they answer "Women" or "Equally good".
2. Main	**Prevalence of treated sexual harassment behaviors from roommate**	Dummy variable equal to 1 for self-reporting experiences of three sexual harassment behaviors from a roommate, and otherwise 0. These three behaviors are listed in full as auxiliary outcomes 2.1—2.3 below.
2.1 Auxiliary	Prevalence of unwanted sexual jokes from roommate	Dummy variable equal to 1 for self-reporting that a roommate "told sexual jokes or stories that upset you/ you found offensive/ made you feel uncomfortable?", and otherwise 0.
2.2 Auxiliary	Prevalence of gender harassment focused on competence from roommate	Dummy variable equal to 1 for self-reporting that a roommate made "Offensive or unpleasant comments about your gender or sexual orientation, for example, that you, because of your gender or sexual orientation, are not suited to do certain types of tasks or should not have the opportunity to perform certain tasks?", and otherwise 0.
2.3 Auxiliary	Prevalence of negative comments about competence from roommate	Dummy variable equal to 1 for self-reporting "negative comments about your qualifications or competence" from a roommate, and otherwise 0.
2.4 Auxiliary	Prevalence of any sexual harassment from roommate	Dummy variable equal to 1 if a woman self-reported, from a person residing in the same room as her, any sexual harassment behavior in the SEQ or negative comments on competence (the behavior in outcome 2.3 in this table).
2.5 Auxiliary	Third-party observation of sexual harassment from roommate	Dummy variable equal to 1 if the respondent observed any sex-based harassment directed at a female roommate by another roommate, and 0 otherwise. This variable is derived from a survey question that reminds respondents of the items in the Sexual Experiences Questionnaire and asks if they witnessed any of these behaviors targeting a female roommate, followed by a question identifying the perpetrator.

Table A2. List of outcome variables: Victim and bystander behaviors and attitudes.

3. Main	**Active coping-behaviors by victim**	A dummy variable equal to 1 for respondents with a value 1 on either the dummy for advocacy seeking or social coping (outcomes 3.1 and 3.2 below). and otherwise 0.
3.1 Auxiliary	Advocacy seeking	A dummy equal to 1 for self-reporting any sexual harassment behavior on the sexual experiences questionnaire (see Table 1) and answering "yes" on the follow-up question "Have you reported or filed a complaint about one or more of the incidents above?", and 0 otherwise.
3.2 Auxiliary	Social coping	A dummy equal to 1 for self-reporting any sexual harassment behavior on the sexual experiences questionnaire (see Table 1) and answering "yes" on the follow-up question "Did you talk about what happened with a friend or someone you trust to get support?", and zero otherwise.
4. Main	**Bystanding in situations of sexual harassment**	A dummy variable equal to 1 for individuals who witnessed someone being harassed inside or outside their own room, using the same question discussed above to measure prevalence in outcome 2.5 and who also answered "yes" on the follow-up question "Did you speak up or do something?", and otherwise zero.
4.1 Auxiliary	Third-party observed bystanding	A dummy variable taking the value 1 for respondents who answered affirmatively to observing any of the behaviors on the sexual experiences questionnaire against a female roommate, and checking the box for "fellow soldiers in your room" on a follow-up multiple choice question asking "Was there anyone who witnessed the situation(s) who spoke up or did something?", and otherwise zero.
4.2 Auxiliary	Descriptive norms for bystanding.	A Z-score based on percentage value (0 to 100%) given by respondents on the question "What fraction of your fellow soldiers do you think would confront a fellow soldier who sexually harasses someone".
4.3 Auxiliary	Injunctive norms for bystanding	A dummy variable equal to 1 for answering "Agree completely", when asked to assess the statement that "It is important to confront the perpetrator when you observe that colleagues/co-students are targets of unwanted sexual attention", and 0 otherwise.
5. Main	**Bystanders co-responsible**	**See section 5.**

Table A3. List of exploratory outcome variables for career ambitions and group cohesion.

Career ambitions	
Military career ambition index	A count variable ranging from 0 to 3, created by taking the sum of the three dummies for military career ambitions listed below in this table, i.e., plans to continue military service, high self-perceived suitability for military service, and high effort in military service.
Plans to continue in Armed Forces	Dummy variable equal to 1 for those who gave an answer to a question about which position the person was planning to pursue after basic service, and otherwise 0. This question read "What do you wish to do in the defense forces after your basic service?".
Suited for service	[Question erroneously not included in the survey]
Interested in continuing in the Armed Forces	Dummy variable equal to 1 for an affirmative answers on the question "Can you see yourself working in the Armed Forces at a later point in life?" and otherwise 0.
High motivation to make effort in Armed Forces	Dummy variable equal to 1 for those who respond that they are strongly motivated (categories 9 or 10) and otherwise 0, based on a survey asking "How motivated are you to make an effort in the Armed Forces? Enter a number between 1 and 10 to describe your motivation. (1 = not motivated at all, 5 = somewhat, 10 = highly motivated)."
Plan to attend Norwegian Military Academy	Dummy variable equal to 1 for answering "I envision pursuing a bachelor's degree at the Norwegian Defense University College (Military Academy)" on the question "What do you wish to do in the defense forces after your basic service?" and otherwise 0.
Room cohesion	
Satisfaction with room	A Z-score variable for a Likert Scale from 1 (Very unhappy) to 7 (Very happy) for the statement "All in all, how happy were you with the room you stayed in?"
Index of positive social environment in room	A Z-score variable created in two steps. The first step creates Z-score variables for three statements rated by soldiers on Likert Scales from 1 (Disagree entirely) to 7 (Agree entirely). The second step takes the sum of these three Z-scores and standardizes that sum to a final Z-score variable. The three statements are: (1) "In my room, everybody collaborates effectively to solve tasks such as cleaning the room"; (2) "If someone in the room faces challenges linked with the training, others assist them"; (3) "I consider at least one of the persons I share a room with to be a friend".

Table A4. Regression output for Figure 1: Attitudes immediately after treatment.

	Index of tolerant attitudes	Telling sex-related jokes can be called sexual harassment (rev)	A higher share of women in the defense forces lowers a country's defense capacity	Women are equally capable of military service as men (rev)	Males best troop leaders
Sample: All					
Treatment	-0.447***	-0.521***	-0.176**	-0.118	-0.071**
	(0.063)	(0.058)	(0.067)	(0.067)	(0.026)
Observations	948	948	949	949	948
Clusters	195	195	195	195	195
Control mean	0.223	0.259	0.084	0.054	0.251
Sample: Men					
Treatment	-0.409***	-0.494***	-0.183*	-0.038	-0.081*
	(0.087)	(0.078)	(0.091)	(0.087)	(0.034)
Observations	554	554	554	554	553
Clusters	183	183	183	183	183
Control mean	0.364	0.333	0.248	0.160	0.285
Sample: Women					
Treatment	-0.457***	-0.493***	-0.150	-0.179*	-0.068
	(0.084)	(0.090)	(0.088)	(0.091)	(0.038)
Observations	394	394	395	395	395
Clusters	146	146	146	146	146
Control mean	0.026	0.155	-0.145	-0.094	0.202
Troop FE	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Control variables used in the LASSO selection procedure are listed in Appendix Section A2. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Table A5. Regression output for Figure 1: Attitudes at endline.

	Index of tolerant attitudes	Telling sex-related jokes can be called sexual harassment (rev)	A higher share of women in the defense forces lowers a country's defense capacity	Women are equally capable of military service as men (rev)	Males best troop leaders
Sample: All					
Treatment	-0.225***	-0.230**	-0.133*	-0.094	-0.042
	(0.065)	(0.074)	(0.066)	(0.070)	(0.028)
Observations	854	858	854	854	853
Clusters	191	191	191	191	191
Control mean	0.102	0.092	0.065	0.058	0.222
Sample: Men					
Treatment	-0.202*	-0.166	-0.116	-0.162	-0.015
	(0.097)	(0.102)	(0.089)	(0.092)	(0.041)
Observations	495	498	495	495	495
Clusters	175	175	175	175	175
Control mean	0.316	0.185	0.273	0.302	0.290
Sample: Women					
Treatment	-0.198*	-0.209*	-0.125	-0.013	-0.075*
	(0.090)	(0.103)	(0.090)	(0.099)	(0.031)
Observations	359	360	359	359	358
Clusters	143	143	143	143	143
Control mean	-0.199	-0.042	-0.227	-0.286	0.126
Troop FE	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Control variables used in the LASSO selection procedure are listed in Appendix Section A2. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Table A6. Sensitivity results for full sample results in Tables A4 and A5: Specifications with only troop fixed effects.

Dependent variable:	Index of tolerant attitudes	Telling sex-related jokes can be called sexual harassment (rev)	A higher share of women in the defense forces lowers a country's defense capacity	Women are equally capable of military service as men (rev)	Males best troop leaders
	(1)	(2)	(3)	(4)	(5)
Sample: Baseline					
Treatment	-0.444***	-0.519***	-0.165**	-0.105	-0.086***
	(0.061)	(0.056)	(0.063)	(0.064)	(0.025)
Observations	948	948	949	949	948
Clusters	195	195	195	195	195
Sample: Endline					
Treatment	-0.207**	-0.194**	-0.122	-0.109	-0.049
	(0.068)	(0.071)	(0.064)	(0.070)	(0.027)
Observations	854	858	854	854	853
Clusters	191	191	191	191	191
Troop FE	Yes	Yes	Yes	Yes	Yes
Room size FE	No	No	No	No	No
Room gender composition FE	No	No	No	No	No

Notes: The table shows estimates for Equation 1 with troop fixed effects only. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Table A7. Sensitivity results for full sample results in Tables A4 and A5: Specifications with all controls.

Dependent variable:	Index of tolerant attitudes	Telling sex-related jokes can be called sexual harassment (rev)	A higher share of women in the defense forces lowers a country's defense capacity	Women are equally capable of military service as men (rev)	Males best troop leaders
	(1)	(2)	(3)	(4)	(5)
Sample: Baseline					
Treatment	-0.471***	-0.522***	-0.212**	-0.133*	-0.058
	(0.068)	(0.064)	(0.072)	(0.066)	(0.030)
Observations	948	948	949	949	948
Clusters	195	195	195	195	195
Sample: Endline					
Treatment	-0.216**	-0.227**	-0.124	-0.071	-0.042
	(0.072)	(0.079)	(0.066)	(0.076)	(0.032)
Observations	854	858	854	854	853
Clusters	191	191	191	191	191
Troop FE	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes
All controls from Section A1	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Table A8. Regression output corresponding to Figure 2.

Dependent variable:	Prevalence of… **H2: … treated sexual harassment behaviors from roommate**	… unwanted sexual jokes from roommate	… gender harassment focused on competence from roommate	… negative comments about competence from roommate	**H3: Active coping-behaviors by victim**	**H4: Bystanding in situations of sexual harassment**
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.037	-0.041	-0.021	-0.013	0.020	-0.021
	(0.041)	(0.029)	(0.035)	(0.031)	(0.056)	(0.019)
Observations	359	359	359	360	359	858
Clusters	143	143	143	143	143	191
Control mean	0.126	0.060	0.060	0.071	0.213	0.067
Troop FE	Yes	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A9. Analysis of auxiliary behavioral outcomes.

Dependent variable:	Prevalence of any sexual harassment from roommate	Advocacy-seeking	Social coping	Third-party observation of sexual harassment of female roommate	Third-party obs of sh of female roommate by roommate	Third-party observed bystanding	Descriptive active bystander norms	Injunctive active bystander norm
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-0.023	-0.016	0.020	-0.037	-0.012	-0.027	0.000	-0.027
	(0.049)	(0.027)	(0.056)	(0.024)	(0.018)	(0.018)	(0.065)	(0.031)
Obs.	360	359	359	771	771	858	846	852
Clusters	143	143	143	161	161	191	191	191
Control mean	0.158	0.027	0.213	0.092	0.043	0.049	-0.012	0.757
Sample	Women	Women	Women	Mixed rooms	Mixed rooms	All	All	All
Troop FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Appendix Section A2 lists the control variables for the LASSO selection procedure. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Table A10. Exploratory analysis of career ambitions and group cohesion.

	Career ambitions in the Armed Forces				Group cohesion	
Dependent variable:	Career ambition index	Plans to continue in Armed Forces	Interested in continuing in the Armed Forces	High motivation to make effort in Armed Forces	Satisfaction with room	Index of positive social environment in room
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.078	-0.039	-0.045	0.004	0.114	0.183*
	(0.111)	(0.046)	(0.051)	(0.049)	(0.090)	(0.087)
Observations	360	360	357	356	858	858
Clusters	143	143	143	143	191	191
Control mean	1.207	0.348	0.456	0.412	-0.082	-0.074
Troop FE	Yes	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Appendix Section A2 lists the control variables for the LASSO selection procedure. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

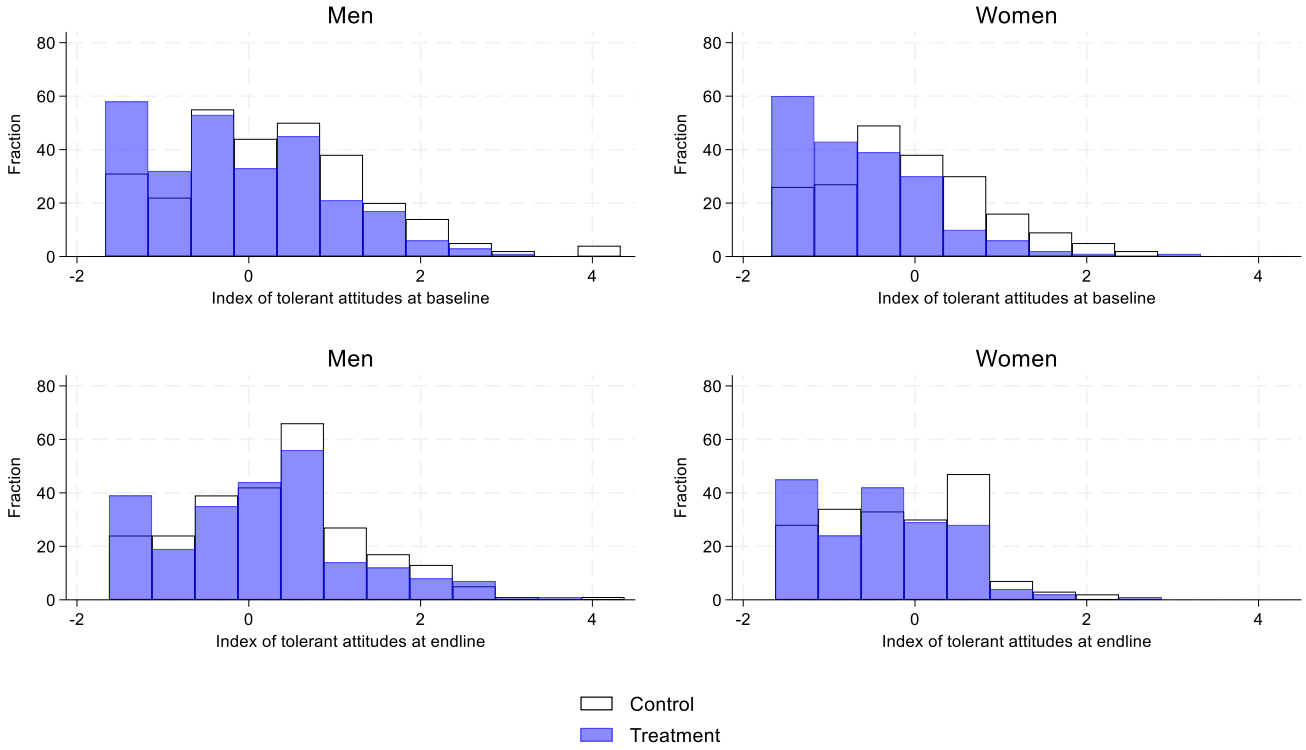

Figure A1. Distributions of the index of tolerant attitudes.

Notes: Distributions at baseline and endline by soldier gender. N(Men baseline)=554; N(Women baseline)=394; N(Men endline)= 495; N(Women endline)=359.

Section A3. Vignette module

In our pre-analysis plan we discussed the risk that any reduction in actual harassment might be offset, in the self-reports, by heightened awareness among treated soldiers: greater awareness could make borderline incidents more salient, leading to equal or higher prevalence reports in the treatment arm. To hold both the memory cue and the evaluative standard constant across respondents we therefore pre-registered a vignette.

A.3.1 Instrument

The survey introduced the following scenario (translated from Norwegian):

"The following incident took place in a room like yours during basic training. After finishing an exercise, the recruits return to their room. A male recruit puts his female roommate in an uncomfortable position by shouting: "Can you pull up your sweater, please, I really want to see your breasts."

Immediately afterwards each respondent rated six statements on a five-point Likert scale (1 = *strongly disagree*, …, 5 = *strongly agree*):

1. *This situation is sexual harassment.*
2. *The woman should just let it go.* (re-scored so higher values mean lower tolerance)
3. *The woman should confront the man and state that this is not OK.*
4. *If others are present, they should clearly tell the man that this is not OK.*
5. *Suppose the man continues and manages to touch her anyway. Given that a formal report will have clear consequences for him, she should file a complaint.*
6. *If others are present and do nothing, they share responsibility.*

Item 2 is reverse-scored so that higher numbers consistently indicate lower tolerance. As announced in the pre-analysis plan, each item is standardized (mean 0, SD 1) and analyzed separately; the simple average of the six z-scores forms our composite "vignette index."

A.3.2. Descriptive distributions

Table A11 shows raw response frequencies. Even in the control group the overwhelming majority condemn the behaviour: across 5 out of 6 items, a large majority choose *agree* or *strongly agree*. The only statement that attracts meaningful dissent is the idea that silent by-standers should share blame (16 per cent ≤ "neither"). While this ceiling leaves limited

statistical room for improvement, it also ensures that the scenario is interpreted uniformly as harassment, minimizing ambiguity about what counts.

Table A11. Descriptive Statistics for the Vignette Experiment

Item	Mean	% "Agree" (4)	% "Strongly agree" (5)	% ≤ "Neither" (1-3)
Sexual harassment	4.79	14.8	82.6	2.6
Ignore (reverse scored)	4.61	21.3	71.5	7.2
Confront	4.70	21.1	74.7	4.2
Bystanders Intervene	4.83	14.0	84.6	1.4
Victim Reports	4.89	9.6	89.6	0.8
Bystanders co-responsible	4.24	41.0	42.8	16.2
Composite index	4.68	—	—	—

Notes: ***N*** = 856-858. The composite index averages six items. Raw numbers in table for illustration, standardized versions in regressions.

A.3.3 Experimental results

Table A12 presents estimates of equation (1) with room-clustered standard errors and the full set of pre-specified fixed effects and LASSO-selected controls. In the pooled sample the information treatment raises the vignette index by 0.19 standard deviations (SE = 0.064, p = 0.003).

Table A12 indicates that the clearest overall shift is a stronger expectation that the victim should file a formal complaint (0.17 SD). Disaggregating by gender, men respond most on the duty of other recruits to step in (0.15 SD on *bystanders intervene*), whereas women show their largest movements on formal reporting (0.23 SD) and on holding silent by-standers responsible (0.23 SD). Because the vignette fixes both the conduct and the victim's disapproval, these changes signal a tighter norm of collective and institutional accountability rather than mere definitional clarification.

Overall, the exploratory analysis supports the interpretation in Section 5: the information treatment tightened injunctive norms rather than merely reinforcing private disapproval.

Table A12. Treatment Effects in the Vignette Experiment

	Sexual harassment	Ignore	Confront	Bystander	Victim Reports	H5: Bystanders responsible	Index
ALL							
Treatment	0.135	0.094	0.086	0.123	0.169*	0.117	0.192**
	(0.074)	(0.070)	(0.073)	(0.066)	(0.070)	(0.067)	(0.064)
Observations	856	856	857	857	856	856	858
Clusters	191	191	191	191	191	191	191
Control mean	-0.079	-0.068	-0.043	-0.067	-0.074	-0.069	-0.105
MEN							
Treatment	0.130	0.135	0.069	0.148*	0.126	0.092	0.186*
	(0.088)	(0.092)	(0.079)	(0.075)	(0.067)	(0.088)	(0.077)
Observations	496	496	497	497	496	496	498
Clusters	175	175	175	175	175	175	175
Control mean	-0.034	-0.138	0.018	-0.095	-0.009	-0.057	-0.083
WOMEN							
Treatment	0.133	0.060	0.028	0.047	0.224*	0.229*	0.184
	(0.103)	(0.101)	(0.122)	(0.117)	(0.114)	(0.095)	(0.098)
Observations	360	360	360	360	360	360	360
Clusters	143	143	143	143	143	143	143
Control mean	-0.142	0.031	-0.130	-0.027	-0.165	-0.085	-0.137
Troop FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. The index is constructed as in the main analysis by standardizing each component, summing the standardized components, and re-standardizing the aggregate. The table reports standardized outcome variables. Appendix Section A2 lists the control variables for the LASSO selection procedure. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.

Section A4. Exploratory analysis of room cohesion

A.4.1 Measure and pre-registered coding

The pre-analysis plan proposed that the intervention might improve the informal climate of the bootcamp rooms. To track this, the end-line survey asked recruits to rate three statements on a 1–7 scale (*1 = disagree entirely, 7 = agree entirely*):

1. "Everyone in my room works well together on common tasks such as cleaning."
2. "If someone in the room struggles with the training, the others help."
3. "I would call at least one person I share the room with a friend."

Following the same procedure as for the main outcome, we standardize each item (mean 0, SD 1) and average them to construct a room-cohesion index, which we then analyze following Equation (1).

A.4.2 Descriptive patterns

In most rooms, perceptions of help and friendship are high (means 5.9–6.6 on a 7-point scale), while cooperation on chores scores is equal to around 5.7. Men rate cohesion marginally higher than women on each dimension, but the gender gap is modest (about 0.2–0.3 points).

A.4.3 Treatment effects

Table A13 summarizes the regression results. In the pooled sample, the information treatment raises the cohesion index by 0.18 standard deviations (SE = 0.087, $p = 0.036$). Disaggregated estimates indicate a statistically significant effect for men (0.22 SD, p = 0.009), while the corresponding estimate for women is of similar magnitude but not statistically significant (0.19 SD, p = 0.251). Examining the individual components, the treatment increases men's ratings of working together and mutual help by approximately 0.18–0.20 SD. For women, coefficients are uniformly positive but estimated with substantially lower precision.

Taken together, these results suggest that providing information about peer attitudes about harassment and that women perform on par with men generates spillovers to everyday cooperation within rooms. The magnitude of the effect is comparable to the reduction in harassment-tolerant attitudes observed eight weeks after treatment, consistent with a common normative mechanism that both lowers tolerance for harassment and strengthens positive social interaction among roommates.

Table A13. Room Cohesion

	Working together	Room help	Friend in the room	Index
ALL				
Treatment	0.160	0.145	0.114	0.183*
	(0.096)	(0.081)	(0.075)	(0.088)
Observations	858	857	858	858
Clusters	191	191	191	191
Control mean	-0.063	-0.059	-0.048	-0.074
MEN				
Treatment	0.176*	0.200*	0.120	0.217**
	(0.089)	(0.083)	(0.089)	(0.082)
Observations	498	498	498	498
Clusters	175	175	175	175
Control mean	0.039	-0.017	-0.049	-0.012
WOMEN				
Treatment	0.141	0.112	0.173	0.185
	(0.164)	(0.141)	(0.131)	(0.161)
Observations	360	359	360	360
Clusters	143	143	143	143
Control mean	-0.208	-0.119	-0.047	-0.163
Troop FE	Yes	Yes	Yes	Yes
Room size FE	Yes	Yes	Yes	Yes
Room gender composition FE	Yes	Yes	Yes	Yes
LASSO-selected controls	Yes	Yes	Yes	Yes

Notes: The table shows estimates for Equation 1. Appendix Section A2 lists the control variables for the LASSO selection procedure. Standard errors clustered by room, *p<.05; **p<.01; ***p<.001.