Development and Evaluation of the Ally Sexual and Gender Minority Diversity and Inclusion Training at the Centers for Disease Control and Prevention

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ABSTRACT

Context: The Centers for Disease Control and Prevention (CDC) developed a workforce training on sexual and gender minorities (SGMs).

Objective: This article describes the evaluation of the training.

Design: Participants completed pre- and posttest surveys. After the pilot evaluation, some improvements were made to the curriculum and to the pre- and posttest questionnaires. Participants in subsequent (implementation) training were similarly asked to complete pre- and posttest questionnaires.

Setting: CDC.

Participants: CDC staff.

Main Outcome Measures: Participants' knowledge, ally identity, and perceptions of SGMs.

Results: Pilot and implementation training data showed increases in participant knowledge of 44% and 49%, respectively, increases in ally identity of 11% and 14%, respectively, and increases in positive perceptions of SGM of 25% and 31%, respectively.

Conclusion: These results suggest that the CDC Ally Training may be a useful tool for improving staff knowledge and perceptions of SGM people.

KEY WORDS: evaluation, sexual and gender minorities, training evaluation, workplace

Over the last half century, the United States has passed a series of laws that have aimed to address discrimination. Many protections were enacted through Title VII of the Civil Rights Act (1964), which prohibits employment discrimination based on race, color, religion, sex, or national origin. Additional protections were enacted through the Equal Pay Act (1963), the Age Discrimination in Employment Act (1967), the Americans with Disabilities Act (1990), and the Genetic Information Non-discrimination Act (2008).[1] More recently, in June 2020, the US Supreme Court held that "an employer who fires someone simply for being homosexual or transgender has discharged or otherwise discriminated against that individual 'because of such individual's sex'" in violation of Title VII.[2] In June 2022, President Biden signed the "Executive Order on Advancing Equality for Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex Individuals," noting, "In spite of this historic progress, LGBTQI+ individuals and families still face systemic discrimination and barriers to full participation in our Nation's economic and civic life."[3]

Several studies have examined the workplace experiences of workers who identify as lesbian, gay, bisexual, transgender, queer, and questioning

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(LGBTQ+).[4-7] One study found that gay and bisexual male workers earned 11% to 27% less than their heterosexual male counterparts with the same experience, education, occupation, marital status, and geographic location.[8] Sexual and gender minority (SGM) employees often feel the need to conceal their sexual orientation to protect themselves from harm such as violence, firing, and harassment.[9] Concealing sexual orientation is associated with increased stress, which can negatively affect workplace performance.[10] These and other forms of "prejudice" and "heterosexism" in the workplace contribute to adverse psychological, health, and occupational outcomes for SGM employees.[11,12] In the US federal workforce, which first began collecting data on sexual orientation in 2012, about 2% identified as gay or lesbian, 1% bisexual, and 1% "something else"; separately, less than 1% identified as transgender.[13]

Many employers who wish to recruit and retain a diverse and inclusive workforce seek to address the isolation and negative treatment experienced by some SGM employees.[13] Workplace training is one way to address this. The Human Rights Campaign (HRC) publishes an annual Corporate Equality Index that rates corporations on the LGBTQ+ inclusiveness of their policies, practices, and benefits. One key rating category is "internal education and training best practices."[4] Trainings that build awareness of SGMs are shown to increase overall well-being for LGBTQ+ employees and can help create environments that are affirming and supportive of all SGM employees.[14-18] One widely used curriculum for trainings on SGM and relevant concepts is the Safe Zone Project.[19] This has been used in sectors including universities (eg, Emory, Georgia State) and one federal agency.[19,20] However, there are no published evaluations of these trainings to our knowledge. Evaluation is important for understanding training effectiveness and ways to implement similar trainings in other settings.

The Centers for Disease Control and Prevention's (CDC's) Ally Training is adapted from the Safe Zone Project. This article describes the evaluation of the Ally Training pilot and subsequent implementation trainings, including findings related to the desired outcomes of increased participant knowledge; change in participant attitudes; and increased willingness of participants to confront homophobic, transphobic, and heteronormative remarks in group settings.

Methods

CDC's Ally Training is a 1-day, small-group, interactive course led by skilled trainers. It provides a space for learning through conversation, activities, and scenarios. The Ally Training was developed by the Ally Program Steering Committee, composed of staff from across CDC including GLOBE (LGBTQ+ Colleagues and Allies), Office of Equal Employment Opportunity, Human Resources Office, and others. CDC implemented and evaluated a pilot training. Evaluation data were used to understand the training effectiveness and to revise the training prior to broad implementation. Once changes were made to the training after the pilot, the revised Ally Training was implemented and evaluated.

Methods for the pilot and implementation trainings differed slightly, so we have presented them separately in the following text. For all trainings, pre- and posttest surveys were conducted to track changes in participant knowledge and perception of SGM people.

Pilot training

The pilot training was conducted by 5 trainers, all of whom were CDC/ATSDR (Agency for Toxic Substances and Disease Registry) employees and members of GLOBE. All were involved with the development of the training and taught different activities across the course. Five observers recorded their observations on the training; all were CDC employees and had been involved in developing the training and/or evaluation.

The CDC/ATSDR Ally Pilot Training consisted of the following modules:

1. *Introductions, Group Norms, and Training Overview*: Described the purpose of the Ally Program and included introductions, group norms (setting the tone, intention, and expectations), and course overview.
2. *Vocabulary*: Included a vocabulary activity and discussion to develop basic common language used throughout the training.
3. *Who Are LGBTQ+ People and Who Are You?* Involved videos, activity, and discussion to explore LGBTQ+ identities and the participant's identity. The objective was to develop a deeper understanding of participants' own self-identity and what it means to "bring your whole self"" to work.
4. *LGBTQ+ Demographics and Statistics*: Presented prevalence estimates of LGBT adults in the United States, US government, Department of Health and Human Services, and CDC.
5. *Why the Ally Program Is Needed at CDC/ATSDR*: Presented information on the civil rights climate for LGBTQ+ people, challenges specific to the federal workplace, and an activity to help participants understand privileges that non-SGM people have.

6. *How to Be an Ally to LGBTQ+ People Everywhere*: The objectives of module 6 were to demonstrate an understanding of how to be an LGBTQ+ ally at work and identity opportunities to promote greater support, diversity, and inclusion of the entire workforce.

Participants

Twenty-one CDC employees participated in the pilot training selected from approximately 50 employees from the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), CDC Human Resources Office (HRO), or OEEO, who applied to receive the training. Participants were selected to get a relative balance across job series, supervisory/nonsupervisory positions, and reasons for wanting to participate in the training. About half of the participants were supervisors (10 of 21), and 4 identified as male. No additional demographic information was collected.

Procedures

Information was gathered from 3 sources: participants, trainers, and observers. Questionnaires were administered before and after the training and after each module and included quantitative and qualitative items. Data were collected via smartphones and computers using online surveys through SurveyMonkey. To the extent possible, questions were adapted from prior evaluations of Safe Zone/Ally programs at Emory University and Georgia State University.

Following each module, participants and observers provided recommendations for improving the module and perceptions of most and least effective training components.

Pilot measures

Overall rating

A participant posttraining questionnaire provided an overall training assessment, with 8 questions for pilot participants on the quality and usefulness of the training.

Participant knowledge

Participant knowledge was assessed using 32 items that included multiple-choice, matching, selecting all correct answers, and true/false. Pre- and posttest questionnaires were anonymous; thus, we were not able to determine individual knowledge changes. Overall group-level knowledge changes were examined by calculating the overall percentage of the questions answered correctly from pretest to posttest.

Ally identity

To measure changes in participant identity as an ally during the pilot, we measured "ally identity," which is a person who seeks to understand the needs of LGBTQ+ people and challenge discriminatory and unfair treatment.[1] The perceptions and identity sections comprised 33 items based on questions from 2 questionnaires, which both measure specific aspects of "ally identity": the Ally Identity Measure (AIM) and the Allies in the Struggle evaluation.[16,19] AIM was developed to gauge a broad set of "ally identification" including the skills and behaviors an ally would exercise in support of SGM people. This expands on the traditional measures focused on knowledge and attitudes. AIM includes 19 questions across 3 subscales: Knowledge and Skills, Openness and Support, and Oppression Awareness.

Participants rated items on a 5-point Likert-type scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), with higher ratings indicating stronger "ally" behaviors and beliefs. We compared average cohort scores on the pretest survey to the posttest survey across both questionnaires and their subscales to identify changes in the training cohort's "Ally Identity Score" posttraining.

SGM Perceptions Questionnaire

In addition to the Ally Identity scale, additional questions were developed to measure changes in perceptions that are specific to the CDC Ally Training. To develop the questionnaire, we adapted content from the program logic model, questions from Emory University's LGBT Life Safe Space Assessments, and an evaluation titled "Allies in the Struggle."[16] The SGM Perceptions Questionnaire included 14 questions across 4 domains: connectedness to resources, role in environment, ability to confront, and comfort discussing LGBTQ+ issues.

Implementation training

Participants

To date, there have been 3 implementation trainings conducted, with 2 occurring in Atlanta, Georgia and one occurring in Morgantown, West Virginia. Participants from across the agency self-selected into the training, with the majority hearing about the training from a CDC announcement e-mail (47%) or a colleague (42%). Trainings were conducted by pairs of trainers. For the 3 implementation trainings, 47 total participants attended and completed the pretest and posttest surveys. Twenty-nine percent of participants were in supervisory roles, while 71% were

in nonsupervisory roles. Most participants (48%) had been employed at CDC for more than 10 years, and most employees found out about the training through a colleague (42%) or through an internal CDC newsletter (47%). Additional demographic information was not collected.

Procedures

As during the pilot, questionnaires were administered before and after the training and included quantitative and qualitative items. Data were collected using online surveys through SurveyMonkey.

Implementation measures

Overall rating

A participant posttraining questionnaire provided an overall training assessment on the quality and usefulness of the training. For the implementation training, this questionnaire was shortened from 8 questions (pilot) to a set of 4 questions (implementation).

Participant knowledge

The pilot evaluation data were used to remove 7 questions that were redundant, confusing, or not needed to adequately assess knowledge.

Ally identity

The Ally Identity section of the pre- and posttest surveys remained unchanged between pilot and implementation.

SGM Perceptions Questionnaire

The SGM Perceptions Questionnaire remained unchanged between pilot and implementation.

Results

Given the slight differences in measures between the pilot and implementation trainings, the results are reported separately.

Pilot training

Overall training ratings

All training modules were rated highly by pilot observers and trainers (n = 8), with all modules above an average rating of 4. Two modules received the highest possible average rating of 5 from the observers and trainers: Modules 3 (Who Are LGBTQ+ People) and 6 (How to Be an Ally to LGBTQ+ People). The other 4 modules ranged from 4.0 to 4.5.

For the pilot training, 21 participants from across the agency completed the pretest survey and 19 completed the posttest survey. Overall, pilot participants rated the training positively, as a 4.8 out of 5 (excellent). Participant ratings of the session format (4.7), trainers/facilitators (4.8), and ability of the trainers (4.8) were also high. Participant ratings of all 6 individual training modules were above 4 on a 5-point scale, ranging from 4.2 to 4.8. Ratings of how well the facilitator conveyed the information for each module almost mirror the overall ratings for each of the modules.

Knowledge

There was an overall participant knowledge increase from 55% correct on the pretest survey to 79% on the posttest survey. This 24-point absolute increase translates to a 44-percentage point change in knowledge from pretest to posttest. As shown in Table 1 , 4 of the 6 modules showed an absolute knowledge increase of more than 20%. Modules 1, 2, 4, and 5 had the greatest gains in knowledge, ranging from an average gain score of 43 percentage points on module 4 (LGBTQ+ Demographics and Statistics) to 22 percentage points on module 5 (Why the Ally Program Is Needed at CDC). Module 3 (Who Are LGBTQ+ People) was at 83% at pretest and had a more modest increase of 5%, likely because 2 of the 4 questions experienced a ceiling effect and because of possible conflation between the concepts of intersex and transgender. Module 6 measured a slight (2%) decrease in knowledge, although the questionnaire had only one question for this module.

Ally identity

The overall average participant Ally Identity Score (measured using the AIM questionnaire) before and after the pilot training increased from an average of 3.8 out of 5 on the pretest survey to 4.2 on the posttest survey (Figure). Stronger agreement on the AIM questionnaire indicates more knowledge and skills, oppression awareness, and openness and support.

SGM Perceptions Questionnaire

Participants increased their overall average scores by almost a full unit on the 5-point scale (nearly 24%), from an average of 3.7 on the pretest survey to 4.6 on the posttest survey (see the Figure). Stronger agreement on this scale indicates greater ability to confront injurious comments, comfort discussing LGBTQ+ issues, connectedness to support resources, and awareness of one's role in the work environment.

TABLE 1
Pilot Training Knowledge Questionnaire: Average Percent Correct for Pre- and Posttest Surveys and Absolute Change by Module

Module	Number of Questions	Pretest: Mean	Posttest: Mean	Absolute Change From Pretest to Posttest	Percentage Change
1. Introductions, Group Norms, and Training Overview	2	50%	82%	32%	64%
2. Vocabulary	12	58%	84%	26%	45%
3. Who are LGBTQ+ People and Who are You?	4	83%	88%	5%	6%
4. LGBTQ+ Demographics and Statistics	4	32%	75%	43%	134%
5. Why the Ally Program Is Needed at CDC/ATSDR	9	48%	70%	22%	46%
6. How to Be an Ally to LGBTQ+ People Everywhere	1	81%	79%	−2%	−2%
Overall	32	55%	79%	24%	44%

Abbreviations: ATSDR, Agency for Toxic Substances and Disease Registry; CDC, Centers for Disease Control and Prevention; LGBTQ+, lesbian, gay, bisexual, transgender, queer, and questioning.

Qualitative data

Participant and observer open-ended feedback and suggestions showed improved awareness of oppression and one's own role in the work environment. When asked whether the Ally Training changed how participants think about prejudice toward SGM people, participants noted that they think differently about "barriers that [SGM people] face [and] the changes in acceptable/unacceptable language" and they "had no idea that the LGBTQ community faces so many challenges still in our country."

Pilot participants and observers suggested that future participants might benefit from more time or discussion covering the vocabulary (eg, gender and sex); distinctions between gender identity, gender expression, and attraction; "do's and don'ts"; and various queer identities. Some participants noted they felt overwhelmed with the vocabulary section, and observers noted participants were struggling to comprehend the concepts.

As one participant noted, [I suggest] "spend[ing] more time on the vocabulary words. It's a lot to take in or even consider sharing in advance of training for participants to review. Most of the terms are unfamiliar to me."

Pilot training revisions

On the basis of the pilot evaluation findings, the following key changes were made:

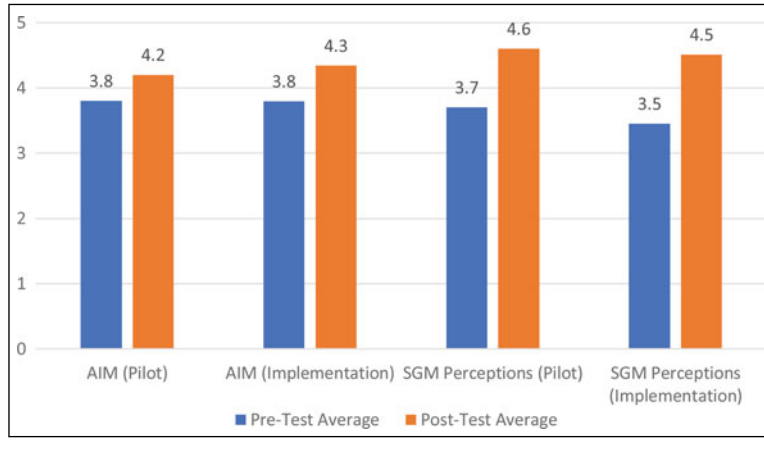

FIGURE Ally Identity (AIM) and SGM Perceptions Questionnaire Results for Pilot and Implementation Trainings
Abbreviations: AIM, Ally Identity Measure; SGM, sexual and gender minority. This figure is available in color online (www.JPHMP.com).

- Reduced the number of modules from 6 to 5 by combining "LGBTQ+ Demographics and Statistics" module with the "Why the Ally Program Is Needed at CDC/ATSDR" module.
- Mapped individual learning objectives to specific modules and described them at the beginning of each module.
- Redistributed time among modules. More time was spent on vocabulary and "How to Be an Ally" sections and less time on background, historical information, and state of LGBTQ+ discrimination laws and policies.
- Added a small-group vocabulary activity, examples from Language Dos and Don'ts into the formal presentation, and a small-group role-playing scenario activity to provide additional opportunity to practice new vocabulary and respond to injurious comments.

Implementation training

Overall training ratings

Participants rated the implementation trainings highly, with the 4.7 average rating (n = 47) out of 5. Participant ratings of the format and the session trainers were also high, with each receiving a rating of 4.7.

Knowledge

There was an overall knowledge increase from 57% correct on the pretest survey to 85% on the posttest survey (Table 2). This 28-point absolute increase in knowledge translates to a 49% increase in knowledge from pretest to posttest. All modules showed an increase between pre- and posttest knowledge. Module 4 (Why the Ally Program Is Needed at CDC) and module 5 (How to Be an Ally to LGBTQ+ People') had the greatest gains in knowledge. The lowest performing module for knowledge gain during the implementation trainings, module 2 (Vocabulary), still saw a 17% pre- and posttest difference.

Ally identity

The average participant Ally Identity Score increased from an average of 3.8 out of 5 on the pretest survey to 4.3 on the posttest survey (Figure).

SGM Perceptions Questionnaire

The SGM Perceptions Questionnaire increased from an average of 3.5 out of 5 on the pretest survey to 4.5 on the posttest survey (Figure).

Qualitative data

Qualitative data were collected from implementation participants through open-ended questions such as "Did you learn anything that changed how you think about prejudice or sexual and gender minorities?" Participants noted that they increased their knowledge around terms. As one participant noted, they "learned more about intersex people which was helpful." Participants also "increased [their] understanding of available resources in being an ally." The training also helped them gain greater understanding about the heterogeneity of SGM people and "reminded [them] of the multiple identities that people have and the depths of struggle."

TABLE 2
Implementation Training Knowledge Questionnaire: Average Percent Correct for Pre- and Posttest Surveys and Absolute Change by Module

Module	Number of Questions	Pretest Mean	Posttest Mean	Absolute Change From Pretest to Posttest	Percentage Change
1. Introductions, Group Norms, and Training Overview	1	70%	90%	20%	29%
2. Vocabulary	8	60%	70%	10%	17%
3. Who Are LGBTQ+ People and Who Are You?	3	75%	90%	15%	20%
4. Why the Ally Program Is Needed at CDC/ATSDR	4	37%	79%	42%	114%
5. How to Be an Ally to LGBTQ+ People Everywhere	9	49%	81%	32%	65%
Overall	25	57%	85%	28%	49%

Abbreviations: ATSDR, Agency for Toxic Substances and Disease Registry; CDC, Centers for Disease Control and Prevention; LGBTQ+, lesbian, gay, bisexual, transgender, queer, and questioning.

Discussion and Conclusions

Results from this evaluation indicate that 1-day training can impact participant knowledge of SGM issues and attitudes toward SGM people. Both pilot and implementation trainings were rated nearly at the top of the scale by participants, who showed increases in knowledge and positive attitude changes. This suggests an investment in 1-day training can lead to changes in employee knowledge and perceptions.

Participant ratings of the training overall showed that it was positively received by the trainees. In addition to the perceptions of the course, there was more than 40% increase in objective measures of knowledge for both the pilot and implementation trainings. Participants also showed increases in ally identity and in positive perceptions of SGM people. These across-the-board positive results indicate this type of employee training may be a useful tool for improving staff knowledge and attitudes toward SGM employees. Changes in knowledge and attitudes may lead to improved organizational culture over time.[4,14-20]

The pilot evaluation was important to help refine course content and address participant feedback. For instance, one key finding was that providing an opportunity for participants to practice appropriate terminology and vocabulary that allows for unintentional mistakes (especially regarding pronouns and appropriate terminology) may improve engagement and adoption of ally behaviors. On the basis of evaluation data, the last module was revamped to center around a creative role-play activity that provided participants dedicated time to design and act out specific responses to injurious comments. This allowed participants to apply what they learned to a real-life example.

Ally Trainings promote awareness of topics related to SGM employees in the workplace and are intended to create a welcoming environment for SGM staff, provide information about support systems for SGM staff, improve norms and attitudes toward SGM staff, and encourage a more diverse and inclusive culture.[17,21] A diverse and inclusive workforce also improves organizational effectiveness and increases recruitment, employee retention, and innovation.[4,14-20] The American Public Health Association has noted that:

> noninclusive, heteronormative, and cisnormative workplaces can silence employee voices, which can lead to an atmosphere of fear and silence . . . [while] supportive and inclusive workplace environments, grounded in gender-inclusive work policies, not only give employees a voice but can increase their contributions, job satisfaction, and commitment.[23]

Implications for Policy & Practice

- Ally Trainings promote awareness of topics related to SGM employees in the workplace and are intended to create a welcoming environment for SGM staff, provide information about support systems for SGM staff, improve norms and attitudes toward SGM staff, and encourage a more diverse and inclusive culture that can better serve SGM people.
- Rigorous evaluation of workforce trainings is critical for ensuring continuous improvement and that courses meet their desired outcomes.
- While longer-term evidence is needed, current results suggest that the CDC Ally Training changed knowledge and attitudes, which are foundational components of organizational change efforts related to SGM inclusivity.

Within public health, SGMs have been underrepresented and much of the research on SGM health has been related to sexually transmitted diseases.[24] Trainings designed to increase the competencies of public health professionals around SGM issues may also help reduce barriers to providing quality services for SGMs by improving providers' familiarity, knowledge, and comfort with this population and SGM needs, experiences, and health concerns.[24]

However, few of these trainings have been implemented at federal agencies, and similar trainings at other organizations have not been rigorously evaluated to determine their effectiveness.[19,20] Evaluation is critical to ensure desired outcomes, improve programs, and understand implementation in additional settings.[22] To our knowledge, this is the first published evaluation of a federal workforce training on SGMs. This training is in the early stages of implementation, and future work may inform how this training contributes to CDC's long-term goals. Our findings are limited by a small sample size and participant self-selection. However, changing individual knowledge and attitudes toward SGMs has been shown to improve the organizational climate for SGM staff.[4,14-20] Our findings suggest the CDC Ally Training may be a promising strategy for changing workplace knowledge and attitudes.

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