HHS Public Access

Author manuscript

Occup Health Sci. Author manuscript; available in PMC 2023 May 11.

Published in final edited form as:

Occup Health Sci. 2019 December ; 3(4): 387–407. doi:10.1007/s41542-019-00051-3.

A Participatory Action Research Approach to Mental Health Interventions among Corrections Officers: Standardizing Priorities and Maintaining Design Autonomy

Martin Cherniack[1], **Sarah Berger**[2], **Sara Namazi**[1], **Robert Henning**[2], **Laura Punnett**[3], **the CPH-NEW Research Team**

[1]UConn Health, 263 Farmington Avenue, Farmington, CT 06030, USA

[2]University of Connecticut, 406 Babbidge Road, Unit 1020, Storrs, CT 06269, USA

[3]University of Massachusetts Lowell, One University Avenue, Lowell, MA 01854, USA

Abstract

A central dilemma in Participatory Action Research (PAR) is to establish participant decision authority on interventions while adhering to rigorous research practices. We faced this dilemma as part of an ongoing multi-site field research project in the corrections sector, where semi-autonomous union-based Design Teams (DTs) address worker health issues and design interventions. Employee focus groups and surveys elicited areas of concern, pointing to four topics in particular: overtime and sleep, work-family balance, physical fitness, and mental health; these were later expanded to eight priority areas. Quantitative rankings were generated by focus groups of line-level employees and supervisors. A multi-level, iterative priority selection process averaged focus group ratings of topic importance and also difficulty to address separately. Areas of job stress and mental health had highest importance but were also considered most difficult to address. A labor-management steering committee reviewed and endorsed the rankings and transmitted these to newly formed DTs. In principle, each DT was free to establish a different topic for initial intervention but they all chose the most important and difficult to address topics. This structured multi-tiered participatory process preserved ownership by all parties. Balancing participant autonomy and efficient prioritization of topics among multiple interest groups in this PAR effort met research methods needs and also made it easier for DTs to focus on the difficult and stigmatized area of mental health in the correctional workforce.

Keywords

Participatory action research; Correctional workers; Intervention design; Mental health intervention

✉Martin Cherniack, cherniack@uchc.edu.

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Introduction

Background

Participatory Action Research (PAR) poses a central dilemma, regardless of the setting where it is used: the construct of “fidelity” to fixed research hypotheses and methods may conflict with active participant decision-making once the study begins. Conflict resolution in PAR has been described most commonly as the balance in decision-making between community participants and investigators (Baum et al. 2006; Kindon et al. 2007), but strategies are needed as well to manage the participatory process in a way that supports meaningful research evaluation. The potential tension exists not only between the researchers and participants/subjects, but also among multiple participating stakeholders, who may have differing priorities and might not share investigator sensibilities over rigorous design and measurement.

When Kurt Lewin introduced the terms of PAR, he condensed two independent concepts – community participation and action research (Lewin 1946, 1948). The model presumed mutual and direct engagement of the researcher and the study population, and the study population’s articulation of its own activist objectives. The theoretical basis of PAR rests on the integration of Action Research (AR) with direct involvement of the study population, although the two concepts are not necessarily linked (McTaggart 1994; Mordock and Krasny 2001). AR has been particularly prominent in education where the separation of investigator and population is implicit (Stringer 2013). On the other hand, participatory research, particularly as represented by Community Based Participatory Research (CBPR) is intended to improve research quality and completeness, but does not require an action plan matched to a population defined priority (Viswanathan et al. 2004). There has been an implicit conflict between community participation that encouraged rapid turnaround on broadly conceived problems and an opposing scientific rigor that required robust design, reproducible metrics, discrete comparison, and skepticism towards common sense certainties. The emphasis on engagement, situational context, and a democratic determination of aims did not require specific rules for defining optimal subject areas and guidelines for participation, or for priorities that were amenable to investigator preferences (Greenwood et al. 1993). There has been an implicit conflict between community participation that encouraged rapid turnaround on broadly conceived problems and an opposing scientific rigor that required robust design, reproducible metrics, discrete comparison, and skepticism towards common sense certainties. The emphasis on engagement, situational context, and a democratic determination of aims did not require specific rules for defining optimal subject areas and guidelines for participation, or for priorities that were amenable to investigator preferences (Greenwood et al. 1993).

The reconciliation between study participant objectives and research design needs has provoked recognition and uncertainty among the community of PAR investigators who have explored the complexities of participatory design. Utilizing PAR to increase worker decision-making requires a gradual process, rather than involving only a single intervention, wherein both the workers and the researchers learn over time (Hugentobler et al. 1992; Nielsen and Abildgaard 2013). Some other familiar difficulties include balancing controlled

measurements with rapid data co0llection and demonstration of immediate effectiveness, maintaining control populations and preventing contamination, and resolving lay and professional differences on human subjects and privacy. Argyris and Schön (1989) argued in a seminal paper that the *rigor* of social science research and the *relevance* of action research are by definition in tension, and that the division between strict methodology and pluralism requires a choice between them, not a blending. While this is largely true, training and preparation of the participating population in organizational change can introduce familiarity with methodological rigor and therefore support more exacting metrics later on at the time of actual interventions. Nielsen and Abildgaard (2013) made this point in describing the contextualization of interventions. From this perspective, an extenuated interval of process preparation becomes a format for considering interventions and outcomes as closely connected events.

The process for establishing priorities among participants, as described below, is an attempt to develop the multi-level training and governance and tools that can serve as a foundation for continuous improvement in PAR. The goal is to construct a foundation for continuous improvement through use of PAR. This process description does have specific boundaries, pertinent to being situated in corrections. While there are particular, and even unique, hazards and stresses in this workforce, the corrections workplace also provides a concentrated variant of top-down organization, is ridden with suspicions of management intentions, and produces a culture based around personal privacy. These are generalizable qualities that prevail in other workplaces.

Occupational Health in the Corrections Sector, Including the HITEC Program

There are approximately 500,000 correction officers (COs) in the U.S. workforce and they have the highest rate of non-fatal injury (3 per 100 FTE) of any occupational group (Konda et al. 2013; Bureau of Labor Statistics 2014, 2015). NIOSH investigators determined that the rates of work-related injuries due to assaults and violent acts in COs are forty times the average rate for all employees (Konda et al. 2013). COs are at high risk for suicide, depression, obesity, hypertension, injury, and early death due to chronic disease (Obidoa et al. 2011; Warren et al. 2015; Violanti 2017). Several investigators have applied psychosocial constructs, such as job stress, burnout, organizational commitment and procedural justice to characterize adverse reactions in corrections personnel (Finney et al. 2013; Lambert et al. 2009; Schaufeli and Peeters 2000). However, research attention on correctional officers (COs) has lagged behind other public safety professional groups such as police officers and fire fighters (Cherniack et al. 2015; Elliot et al. 2015).

In 2006, investigators from the Center for the Promotion of Health in the New England Workplace (CPH-NEW) launched the Health Improvement Through Employee Control (HITEC) research program in the Connecticut Department of Correction (CT DOC). Baseline evaluation uncovered a high prevalence of overweight/obese individuals (83%), hypertension (56%), and job stress (20%). The male correction officer life expectancy in this population (age-adjusted) was more than 12 years below the average for other male state employees (Cherniack et al. 2016). Upstream risk factors for corrections officers (COs) and supervisors included perceived lack of personal safety at work, work-family imbalance, poor

sense of job coherence, burnout, anxiety/depression, and sleep quantity and quality problems (Cherniack et al. 2015; Buden et al. 2016). This documentation of morbidity and mortality rates generated institutional support within the agency for preventive actions. Interventions followed the *Total Worker Health*® (TWH) approach of the U.S. National Institute for Occupational Safety and Health, emphasizing the 'integration' of occupational safety and health with the maintenance of personal health and well-being (Feltner et al. 2016; Tamers et al. 2019).

By CT DOC initiative, the project developed a governing Study Wide Steering Committee (SWSC) consisting of central and facility-based administrators, labor representatives, and academic investigators, which coordinates activities, evaluates interventions and privacy protections, and addresses logistical and budget challenges. Through a series of interventions, some utilizing administratively conceived best practices and others featuring cooperative teams (Cherniack et al. 2016; Dugan et al. 2016; Dugan and Punnett 2017; Ferraro et al. 2013; Reeves et al. 2012), the feasibility of a participatory approach was established. Intervention experiments utilizing ad hoc participatory groups and short-term labor-management 'kaizen teams' were program-matically successful, but were unable to generate institutional change or continuity (Dugan et al. 2016). Ten years of this collaboration has led to general consensus on common evaluation measures and has facilitated comparison of sub-populations and programs. Extended investment in the tripartite relationship between management, labor and academic investigators has evolved to a high level of trust and a weakening of the very tangible underlying suspicions between these groups. Thus HITEC III emerged in a cooperative climate.

One consequence of the increase in peer-based and union-led activism has been the opportunity to openly discuss new topics. A focus on sleep quality and quantity and mental health had previously been off limits because of privacy concerns and conflicting views on overtime and extended hours within union membership. Similarly, the topics of mental health and stress reactions had previously been too stigmatized for open discussion. These are salient features of work in corrections that pose a dilemma because of confidentiality breach risks and the threat of mandatory dismissal with acknowledged substance misuse (Carlson and Thomas 2006; Kinsler and Saxman 2007).

In HITEC III which began in 2016, the labor unions solicited the SWSC for a more distinct union involvement and responsibility in intervention design and implementation in which they would play a central role. Despite an established labor-management cooperation on workforce health and well-being, through health and safety and quality of work life committees, there were situational barriers that challenged this new approach: the differences between labor and management in fiscal resources and work rules hierarchy; the different work cultures between 18 separate corrections facilities; the unfamiliarity of all parties with the mechanics of participatory action, and the fact that the bargaining units themselves were divided by different priorities and practices. There was also a history of labor-management committees and initiatives rapidly rising and falling or remaining perfunctory. A formidable main task remained: how to develop intervention priorities, sufficiently analogous in main themes and study design characteristics to allow scientific

comparisons later on while maintaining independent decision making among different parties and interests.

Central Challenges to PAR in the HITEC III Project

The iterative intervention design process entailed bi-directional interaction within CT DOC between line-level Design Teams and their facility-based steering committees (Cherniack et al. 2016; Dugan et al. 2016; Nobrega et al. 2017). The decision to follow a union-based strategy meant that union executive councils would be directly involved in the prioritization process and would appoint members to the facility-based DTs. However, COs work and interact at the level of an individual facility. This underlined the importance of local facility steering committees, including wardens, supervisors and union leadership to maintain local oversight and the importance of vetting of interventions proposed by the DTs. It also introduced complexity into consensus priority-setting, given the addition of a tier of bottom-up DTs, each with its own union local and facility characteristics. The multi-level consensus required to move forward meant many levels of the organization had to be on board and had gained some ownership in the overall process of picking priorities. A decision-making process would likely fail without the mutual satisfaction and concurrence of the Commissioner, CT DOC human resources, union leadership, line-level correction officers, facility administration (wardens), existing committees with mandates related to employee health, and the researchers. An effective DT could not be selected and trained until organizational alignment had taken place.

There is good reason to articulate the key issues that divide local decision making (*autonomy)* from robust and reproducible study design (*rigor)*, and the challenges that they posed to PAR in HITEC. In corrections, there are security, scheduling and contractual obligations which remain administrative prerogatives. Multi-tiered governance, as distinguished from non-decision-making consultation with staff and committees, meant that the intervention selection process was more complicated than simply assisting the mechanics of priority selection and providing a modest degree of feedback. Because the current workplace is necessarily hierarchical for security reasons, introduction of a participatory process for improving workforce health requires a structure that is compatible with the existing system while simultaneously increasing worker decision latitude and autonomy (Henning et al. 2018). To succeed through the basic obstacles in PAR methodology and to introduce a sustainable process, the priority selection process, itself, was an exercise in cultural change. In a PAR decision-making process, where the study population and supervisory groups propose, vet, interact, and come to consensus on action, the participating parties differ from traditional ‘stakeholders’ by their central and continuous involvement (Cherniack and Punnett 2019).

While successful participatory governance is informed by internal education, organizational skill, participant capacity building and participant and investigator integrity, a foundational consensus over goals and rules is not enough. In the case of HITEC III, the substitution of an externally introduced priorities and protocol for DT implementation was antithetical to discretionary control by the participating working groups. In particular, as the participatory groups became more actively engaged in selecting and overseeing intervention priorities,

developing an acceptable methodology for identifying a common set of intervention priorities and measurement tools became more central. Resolving divisions between investigator and participant concerns include maintenance of co-existing quantitative and qualitative effect measures and process evaluation (Björgvinsson et al. 2010; Shirk et al. 2012). However, adopting measurable common outcomes and processes tends to work against participatory autonomy. A goal of this manuscript is to accent situations where this type of essential contradiction arises.

The specific dilemma named by Argyris and Schön (1989) was encountered by the CPH-NEW research team when working to balance participant planning with protection of established research methods and hypotheses. Further, in the case of workplace interventions, the distinctions that separate HR staff, and administrators and supervisors from the general workforce are based on formal lines of authority as well as differences in their organizational experience. These were the considerations that lead the study team to adopt a multi-tiered and temporally extended approach for priority setting in HITEC III. This was originally conceived as a multi-site intervention, with the objective to develop self-sustaining labor-management interventions units for eventual scale-up and dissemination, with each unit expected to focus on one common priority and one discretionary priority. The DT in each unit would be facilitated in their intervention design efforts by following a set of prescribed steps in the Intervention Design Analysis Scorecard (IDEAS) Tool (Robertson et al. 2013; Robertson et al. 2015). This is a 7-step root causes analysis and intervention process (https://www.uml.edu/Research/CPH-NEW/Healthy-Work-Participatory-Program/) which facilitates DT members, with the help of a facilitator (either a DT member who has been trained as a facilitator or one provided by the study team), in designing interventions for management review and approval. Use of the IDEAS Tool is a prolonged team-building process, where ownership of the intervention is established through continuous review and reformulation involving both the DT and the steering committee. The IDEAS Tool also served as an instrument for education of participating groups, including union executive councils of both COs and supervisors and the SWSC (i.e., management and other key decision makers). Familiarizing key constituencies with the use of the IDEAS Tool in simulation provided a shared understanding of problem-solving and the importance of a structured approach to intervention design, development, and implementation.

Methods

Prioritization of Interventions

The sequential steps in priority decision making are outlined in Fig. 1. To begin, a short list of themes or topics for possible intervention had been previously identified through Focus Groups (FGs) and survey responses in HITEC II, and served as a starting point in HITEC III:

1. *Overtime and Sleep*. Excessive overtime and reduced sleep quality and quantity appeared to be responsible for some of the worsening health observed in HITEC I and II (Cherniack et al. 2015).

2. *Family Support and Work*. In HITEC I and II, work-family conflict had significant associations with depression in baseline corrections surveys (Obidoa et al. 2011).

3. *Fitness and Work Culture*. Fitness was one of four project areas in HITEC II. The Kaizen Effectiveness Team in HITEC II successfully designed nutrition and walking programs. There was increased interest by CT DOC administration in voluntary fitness, since a health-based discrimination lawsuit in 2011 had forced the abandonment of fitness standards at induction (Morse et al. 2011).

4. *Mental Health in a Violent Culture*. The CT DOC Commissioner has championed nationally Connecticut's Second Chance Society Initiative, lowering incarceration rates and producing a more humane prison environment. An initiative from the Commissioner's office had established a related staff health departmental goal aimed at reducing officer-on-officer confrontation, decreasing officer stress and improving mental health.

These four themes were reviewed by each party and augmented with other topics that were collected from HITEC III participants and shared among groups and with the SWSC. At this point the prioritization process replicated a traditional Delphi approach with key constituent representatives in parallel groups generating qualitative ranking and preferred priority topics for intervention.

The following list of eight topics for interventions was then presented to and vetted by the SWSC: 1) Fitness and health culture in corrections, 2) Overtime and sleep, 3) Work-family conflict, 4) Mental health of COs in a violent culture, 5) Financial stress and job security, 6) Managing inmate mental health, 7) Effects of violent incidents on workforce, and 8) Corrections: Making the public case. Regarding two issues that are somewhat idiosyncratic to corrections: *Managing inmate mental health* refers to the high proportion of inmates with clinical psychiatric disease, and the limited preparation for COs, supervisors and staff for handling necessary mental health interventions. *Corrections: Making the public case* refers to the negative portrayal of corrections and corrections staff in popular media, and a general public skepticism towards the professionalism and capacities of this workforce. This includes indifference towards the personal health and safety risks encountered by COs, and a presumption that health problems and incriminating public events, such as DUIs, are entirely attributable to the quality of personnel (Brough and Williams 2007; Dowden and Tellier 2004).

Structured priority identification of themes or topics for possible intervention began with parallel assessments from three groups: CT DOC administrators, union executive councils, and representatives from wellness committees that had been established administratively. The process of recurrent review and refinement by key parties depended on open communications among these groups. There was also an extensive process of preparing management and support structures at the facility and overall agency level (Dugan et al. 2016). In addition to managerial and union leadership training, it was essential that all parties recognized the formal authority of the SWSC over health and safety decision-making, unless bound by contract or essential security considerations.

The next step was to conduct an in-depth review with representative corrections personnel who would likely participate in DTs or had direct experience with prior participatory or health-related workplace efforts. This review process used two existing bodies, the SWSC (12 members) and a group of corrections supervisors who had formed their own DT. In addition, FGs were convened at five facilities, with the assistance of the unions and administration; correction officers and supervisors and standing committee members were invited by facility wardens at the request of the investigators. The FG members were a convenience sample and did not represent all facilities or the proportional distribution of job categories. Prior to participating in the FG, participants were provided with an information sheet with a working list of "health and safety topics of interest (for use as a starting point)". Topics listed were the same eight topics vetted earlier by the SWSC. Each facility FG met once to conduct its review. There were three elements in this step:

1. ***The TWH Organizational Readiness Survey***: This is a short instrument to assess institutional readiness for participatory interventions (https://www.uml.edu/Research/CPH-NEW/Healthy-Work-Participatory-Program/survey/), which was made more specific to corrections for this activity (Table 1). This survey was also completed in a group setting by the SWSC and members of the existing supervisors DT.

2. ***Interview/Assessment***: FG meetings included a scripted process that reviewed the survey responses as items of discussion. Because the FGs were small, survey responses could be tabulated during the meeting and presented back to participants as a summary indicating response consistency as well as any significant discrepancy in responses. In particular, the FG was asked to review responses where there was discrepancy and/or uncertainty.

3. ***Intervention Ranking***: FG attendees were invited to add to the 8 recommended recommendations, if desired, and then to rank the interventions separately by two criteria: 1) Importance for employee health and safety, and 2) perceived Difficulty of implementation.

In scoring the organizational readiness items, "agreement" was defined as a majority response of *yes* to the item. "Disagreement" was defined by a majority response of *no*. "Mixed" meant that there was no predominant response pattern. Overall semi-quantitative rankings were obtained by averaging the individual priority ratings from Step 3 across all respondents, independent of FG location. Importance and Difficulty were ranked separately.

Finally, FG respondents were presented with a list of voluntary and mandated (required by statute) standing labor-management committees. Three of the standing committees were mandated by the State of Connecticut – Health and Safety, Diversity, and Quality of Work Life (QWL). Most of the committees were marginally functional and only met sporadically. Representation from these standing committees had been requested for FG attendance, but participation was minimal. After ranking the importance and expected difficulty of the proposed interventions, participants were asked to assess the suitability of each standing committee (in either current or adapted form) for performing each of the eight potential interventions. The point of this appraisal was to estimate fully the viability of existing labor-

management joint committees, such as mandated health and safety committees. Deferral to standing committees is often the preference of administrators and investigators (Bauer and Hämmig 2014).

A multi-step review of survey responses involved determining the average ranking across all FG participants and the average among supervisors and officers separately. In this way, the examination of response differences between officers, supervisors, and senior managers was supported. It also had a secondary purpose, which was to engage in discussions that would help identify potential future DT members from among FG participants.

Many questions in the adapted *TWH Organizational Readiness Survey* overlapped intentionally with items in prior larger surveys of COs and supervisors. Thus, members of the SWSC also were able to compare their own responses to those coming from elsewhere in the DOC. Quantitative comparison of the responses is not reported here, but qualitatively the process of taking the survey did promote a greater appreciation by members of the SWSC of the range and variations of opinions.

Results

Twenty-four COs and supervisory staff (16 COs and 8 supervisors) participated in 5 FGs. Responses to major Readiness for Change questions are presented in Table 2. The variation in responses around Workforce Participation and current Integration of Personal and Organizational Health suggested uncertainty in core readiness areas, with a level of skepticism towards organizational change. The most striking result is the high frequency of the “don’t know” response among FG participants, at 17% to 50% of participants depending on the question. This was especially high compared with responses to similar questions from the SWSC and a supervisors’ survey done in the previous year, where unscaled responses had been less than 5%.

The overall summary of Importance and Difficulty rankings by FG members is presented in Table 3. *Mental health of COs in a violent culture* and *Effects of violent incidents in the workforce* were recognized explicitly as the two most important issues for all participants in the FGs (Rank 1 tied) (i.e., for both COs and supervisors). Their relative importance was complicated by the perceived difficulty of introducing effective interventions (Rank 7 and 8, respectively, both on the high end of difficulty). *Financial stress and job insecurity* was the only other intervention with a comparable ranking of difficulty. When correction officer responses were analyzed separately, *Mental health of COs in a violent culture* was recognized as the most important issue, but *Financial stress and job insecurity* replaced *Effects of violent incidents in the workforce*, being ranked second in importance. The ranking is semi-quantitative and is a reflection of the full representation of respondents in the FGs, rather than the CO-specific sensitivity to. *Financial stress and job insecurity* was not reflected in the cumulative results in Table 3.

The *Mental health of COs in a violent culture* and *Effects of violent incidents in the workforce* are related because of their common emphasis on stress and mental health. In this light, the SWSC and the Executive Councils of the unions made a common recommendation

that the eventual DTs should all address mental health as the top priority. After this topic was selected for the next round of interventions, the seven other priority interventions were retained for consideration in future DT efforts.

There was extensive effort to encourage the inclusion of members of the three mandated committees in the FGs but only three participants agreed to attend. Regarding the utility of engaging these committees in the 8 priority interventions, only the Health and Safety Committee was considered a possible platform by a majority of FG participants (Table 4). The decision by the FGs, the SWSC and the research team to proceed with a new formation, the DT, reflected an appraisal that the standing committees were generally ineffective and transiently attended. There was an additional recognition that standing committees were based on single individual and ad hoc interest and not group or team development.

In fact, the study team and CT DOC offered to attempt the transformation of an existing Health and Safety Committee into an intervention team, in the event that the union locals were unable to develop their own DTs. Decision-making on this point entirely was left to the union locals, which universally decided to form and facilitate one DT in each local.

Discussion

This study presents a process for consideration and resolution of a core problem in PAR: conflict between participant priority and independence, and formal study design demands, as considered in the public sector corrections workforce. In the HITEC participatory experience, the interaction involving proposal and revision between constituent groups is a continuous iterative process rather than a more traditional stakeholder consultation, and involves the building of capacity and knowledge in the study population and in the major oversight groups – administrators, union leaders, wardens – that provide review and revision. These groups do not end their participation at the point of priority selection and initial design. Rather, priority selection is an initial step in ongoing consultation. Stated differently, focus groups become the partial predecessors of design teams, organizational readiness surveys equip an oversight group with insights on potential obstacles, and the importance of survey design, and union leadership moves from acceptance or denial of existing problems to engaging in an iterative process of problem solving.

However, even with the consensus on the importance of mental health issues in the present study, it would be wrong to infer that the lengthy preparatory process will override discretionary decision making in fashioning the outcomes of actual interventions. Nonetheless, extended introduction through pre-intervention processes promotes the recognition that complex problems recognized as difficult to address are amenable to structured design and analysis and more comprehensive intervention design efforts. There is also the clear implication that the success of participatory design efforts and continuous improvement programs depends on a sense of ownership at all organizational levels. That sensibility is different from a limited ‘buy-in’ by managers. For participatory interventions to succeed, more senior managers and oversight groups are necessary contributors to changing work culture.

Challenges and Opportunities in Corrections

There are particular features of the corrections workplace that would appear to reinforce disassociation of *autonomy* from *rigor*. The hierarchical and paramilitary nature of prison corrections management would appear to be a high barrier to multi-level participation and DT independence. Corrections may seem too dissimilar from other work settings to support generalization for a number of reasons. A warden is in complete command of a prison's day-to-day operations. Senior managers, supervisors, labor representatives, and the line workforce also constitute a formal and informal hierarchy. The security concerns of corrections personnel amplify a top-down organizational structure, and the normal vehicle for policy change is a systems-wide directive. However, the dominating hand of top-down management and strict terms of permission for workforce independence in matters of health and work conditions are not unique to law enforcement. While the resolving methodologies around priority setting were new to HITEC and, seemingly, to the PAR literature in general, the default to management 'buy-in' in the private sector, underlines several barriers to line-level workforce control (Mattke et al. 2013; Michaels and Greene 2013). PAR in corrections took place in an environment where union representation and job security are stronger than in most American workplaces, and where the imperatives of the competitive market place are muted. On the other hand, there was no pre-existing culture of participatory decision making, no culture of preventive health, and instead a longstanding default to authority. At its core, HITEC was a structured response to the problem of participatory priority setting in a multi-site and complex organizational setting. That is why it is not narrowly specific to corrections or law enforcement in general, but has generalizable applications to other workforces.

Cultural Change and the Priority Decision Making Process

Among the factors favoring this effort was the fact that union assumption of a leadership role resulted in a higher degree of participation and commitment and an increased sense of ownership of the overall intervention design process. Further, the selection and training of DTs occurred in an environment where there was already sensitivity to academic research and the need to standardize data collection and establish process measures for the intervention design efforts. A decade long familiarization process is not feasible for many research teams, but other settings also provide venues for participatory groundwork and familiarization with the work process.

The engagement of union leaders and energized bargaining unit members in the selection of intervention priorities and in familiarization with participatory tools for designing interventions meant that the determinants of success or failure rested within a grass-roots workforce initiative, providing that administrative support was sufficient. A line-level DT could not control fiscal resources or guarantees of cross- coverage and compensation for many participatory activities, but knowing there was top-down support made it easier for the DTs to seriously consider addressing their priority topics, and also to take on the hardest challenge and topmost priority of mental health. The DT preparation process assured that each separate DT and its parent bargaining unit would establish cross-bargaining unit consensus through the vehicle of the SWSC. Each DT was sufficiently autonomous to choose to reject the recommended priority ranking. However, in practice, the participatory

priority setting process virtually assured that the most important priority issue would be selected and that intervention planning would proceed forthwith through each DT. Thus, intervention priority adoption by DTs was neither driven by authority nor left to full spontaneity. By introducing participatory decisions making methods to administrators and union leadership, an important gap that haunts community-based participatory interventions is addressed. Namely, the inevitable gap between leadership that must execute and the rank and file participants can be narrowed through a common training culture. However, the time and availability commitments are substantial.

Alignment of focus from separate DTs was encouraged by prior cross-project SWSC experience with workforce participation through HITEC I and HITEC II. There had been joint labor-management study oversight and familiarity with members of the study team, thus reducing the burden to create wholly new oversight functions from scratch. In our experience, constructing the conditions for effective multi-site study participatory management is a lengthy process that can consume many months of start-up time. However, the HITEC process is continuously refined, and each application to a new DT has become shorter and more efficient. Moreover, as DTs have become active, their member-facilitators cross-train and support new teams through the SWSC and through direct inter-facilitator contact. The main lessons are that preparation may be lengthy, that the evolution from the study of group mechanics to the implementation of best practices shortens introductory time, and that, once established, successful DTs spontaneously transfer their experiences throughout the organization.

The issue of time allocation is intertwined with another dilemma that has afflicted PAR. Traditionally, the principal identified separation has been between the researcher's priority for rigor and the study population's preference for action Argyris and Schön 1989). As noted in the Introduction, other issues have involved potential conflict between controlled measurements and pairing rapid data collection to prompt intervention, establishing a true control population and preventing cross-arm contamination, resolving lay and professional differences over privacy (Buchanan et al. 2007; Minkler 2005). The complementary theoretical distinction has been articulated most commonly as the balance in study governance between participants and investigators – the spectrum ranging from investigator→community to community→investigator (Baum et al. 2006; Kindon et al. 2007). A major ethical consideration may arise around confidentiality and informed consent requirements that are imposed by an Institutional Review Board (IRB), when the community action perspective is less stringent and less bureaucratic (Banks et al. 2013; Wilson et al. 2018). The success of HITEC III in navigating these issues rests on established collaborative relationships and the study population's sensitivity to researcher expectations. Furthermore, an organized workforce is already familiar with confidentiality breaches because of effect on employment. The collegial relationship in HITEC III between study population and investigator may reflect circumstances that are not replicable in projects with more limited inception time.

As was learned by earlier efforts from HITEC and the CT DOC's own problematic efforts to create effective wellness, health and safety, and quality of work life committees, it is questionable whether existing committee structures can support an intervention culture

without significant reconstruction. That being said, the multiple year learning curves of HITEC I and HITEC II are not necessary pre-requisites for other institutions introducing participatory process, especially if many of the research contingencies are unnecessary. At this point, the HITEC experience tends to support a preference for new types of committees that are trained from the start in a participatory process. However, the issue is far from resolved and is currently under study by other arms of CPH-NEW.

The priority selection process in a PAR format reported on here was carried to the point of starting structured intervention design efforts through use of the IDEAS Tool. To date, each of the union-based DTs has elected to prioritize mental health as its general intervention focus. The progression of setting intervention priorities through a multi-level process was open and often revised, but it was not unstructured. It required a priori identification and scaling of the parties who were expected to later oversee interventions, or who were in a position to thwart outcomes by simply abdicating all responsibility to support participatory actions.

Approaches to Priority Decision Making

The process for establishing priorities while still preserving a participatory format has been addressed previously through a number of approaches. Perhaps the most recognized strategy for establishing priorities through group facilitation is the multi-step Delphi method (Hasson et al. 2000; Whitehead 2008) and variations, such as the Community Priority Index (Salihu et al. 2015). However, as critics of the delegated priority-setting process have noted, horizontal or external expansion of opinion from solicited group representatives does not necessarily approximate the involved population, and structured sampling techniques may not improve over conventional interviews, focus groups and surveys (Hasson et al. 2000; Powell 2003). Moreover, the dicing and reassembly of representative opinion from a homogenous group of leaders and spokespersons does not reconstruct vertical arrangements of power and delegation.

These arrangements are particularly pertinent to communities and especially to workplaces, where a top-down hierarchy exists. It extends from managers and key advocates, to supervisors and operational personnel to line workers. The corrections sector is a particularly concentrated variant of top-down organization. As such, it provides a specialized window on the limits of interventions filtered through a top-down structure, even with well-intentioned figments of representation.

Because PAR is based on principles of representativeness, the solicitation of interest groups is not a new concept. Conventionally, this has taken the form of stakeholder assessment through brief workshops (Lalonde et al. 2012), sample surveys (Peacock et al. 2009), and weighting of under-represented groups (van der Velde et al. 2009). HITEC amends these experiences through preparation of key parties that requires familiarization through immersion in the structured participation intervention process.

Organizational Level Change and Outcomes

The selection process was necessarily intertwined with intervention preparation. Introducing mixed methods principles in the issue priority identification, categorization, and selection

process was accompanied by highlighting the importance of objective measures and using historic and current survey results.

It is too early to attribute prioritization of long avoided initiatives in staff mental health to the introduction of participatory methods. However, some of the mental health intervention ideas being considered have been highly innovative and, as determined by survey, highly motivating. These have included training all supervisors in mental health awareness, and developing the physical space and protocols for ‘decompression’ following critical incidents, such as assaults. Despite uncertainty over eventual outcomes, the extended induction of pre-intervention processes does promote the accessibility of complex and difficult problems to structured intervention design and analysis, and can succeed in maintaining a sense of ownership at all organizational levels that is critical to the success of participatory design efforts and continuous improvement programs consistent with TWH principles and goals.

Another positive organizational outcome is that the importance of pre- and post-measures and of ongoing evaluation has been internalized and accepted by the study population. In general, the corrections workforce has a tacit aversion to surveys, due to confidentiality concerns and the historical experience of prior surveys being unmoored from visible outcomes (Obidoa et al. 2011). In HTEC I and II, participation in surveys did not exceed 50% of the tested population, despite intense efforts and incentives. However, the correction officer and supervisor DTs have both accepted and endorsed survey work as key components of their intervention work and have taken responsibility for distribution. To date, pre-intervention surveys have had response rates that exceed 65% in the absence of incentivization, but involving active distribution and feedback from DT members. Encouraging an appreciation of research design and generalizable surveys was an unforeseen benefit from presenting the priority selection process as an introduction to HITEC’s research methodologies. The problem of survey-based assessment with limited resources in a non-survey compliant population appears to be self-resolving.

There may be an apparent contradiction between the structured process of prioritization and the use of the IDEAS Tool and the intent to encourage workforce independence for participatory interventions. However, a period of compulsory and structured training for a job with a high level of professional independence is not uncommon. Apprenticeship training in the building trades and attendance at a training academy for corrections and police work are the norm and are by design non-participatory. The reliance on experience-driven training to instill independent action is at the heart of apprenticeship training in skilled trades, the military, and medicine. It anticipates rather than precludes progression to greater autonomy. The narrow time constraints that have become the norm in ‘lean’ production are new and alien to traditional training culture. We see evidence that the training/apprenticeship approach encourages rather than stifles independent thinking.

Investigators endorsing intervention through a process of organizational learning have emphasized a necessary threshold for aligning workforce members with the perspectives of their leadership (Augustsson et al. 2015; Nielsen et al. 2006). Apart from the distance between operations and central management, there are sub-divisions in organizational leadership. An approach to assessment of degree of conformity and discontinuity between

workforce perceptions and administrative goals at multiple levels has been approached generically in the organizational readiness survey (Helfrich et al. 2009; Robertson et al. 2019; Stamatakis et al. 2012). The ‘bottom-up’ prerogatives of HITEC interventions anticipate an additional perspective – the alignment of objectives between intervention teams that are separated chronologically and geographically. This is why the organizational readiness survey, while an essential assessment tool was only one element in the process of cross-team and cross-facility standardization of intervention priorities.

Participatory Decision Making in the Context of Workforce Empowerment

The HITEC experience, while pertinent to PAR in general, also touches on broader issues of workforce self-management. HITEC has gone beyond conventional solicitation and advisement by the line workforce, and articulated a broader ‘quality of work life’ perspective consistent with Total Worker Health principles. It requires a management team that is sufficiently sophisticated and developed to defer to workforce prerogative in key areas. The administrative hand is not invisible and it goes well beyond ‘buying in’. DTs require release time and scheduling flexibility. While the IDEAS process is elaborate and iterative in its commitment to parsimony and documented budgeting, unmitigated access to financial and material resources are, and must remain, limited. Apart from a committed management, the HITEC DT is distinguishable from several other forms of formalized methods that invite worker participation. The ‘co-determinism’, exemplified by German Work Councils (Frege 2002) in which key groups are guaranteed a seat at the table for major decisions, exceeds the latitude of worker control explored in HITEC. The HITEC work in corrections as of yet has not been underwritten by public or long-term institutional policy. Moreover, the concept of union-based projects is restrictive in the harsh Right to Work climate of the United States, given the low level of private sector unionization and the relative limits on public sector unions towards shared decision making. Thus, the HITEC emphasis on stress and mental health in the corrections workforce has not been the primary focus of other ‘co-determinist’ activities, and it requires workforce sophistication and high levels of commitment.

Corrections is an exceptional sector, with its stressful, monotonous, or ‘alienated’ work and the basic impositions of forced incarceration. However, this group of corrections personnel also has relative job security, union representation, and a management whose metrics are largely outside of the market. Nonetheless, the work culture tends towards suspicion, isolation, and competition over shifts, benefits, and facility locale, and safety. The fact that productive and participatory teams and a culturally sophisticated management can evolve in such a problematic milieu does suggest the PAR methods reported on here for standardizing priorities and maintaining design autonomy are generalizable to other less exceptional work environments.

Acknowledgements

This work was supported by grant no. U19-OH008857 from the National Institute for Occupational Safety and Health (NIOSH) at the Centers for Disease Control and Prevention. The contents of this article are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.

References

Argyris C, & Schön DA (1989). Participatory action research and action science compared: A commentary. American Behavioral Scientist, 32(5), 612–623.

Augustsson H, von Thiele Schwarz U, Stenfors-Hayes T, & Hasson H (2015). Investigating variations in implementation fidelity of an organizational-level occupational health intervention. International Journal of Behavioral Medicine, 22(3), 345–355. [PubMed: 24866259]

Banks S, Armstrong A, Carter K, Graham H, Hayward P, Henry A, et al. (2013). Everyday ethics in community-based participatory research. Contemporary Social Science, 8(3), 263–277.

Bauer GF, & Hämmig O (2014). Bridging occupational, organizational and public health: A transdisciplinary approach. In Bridging occupational, organizational and public health (pp. 1–11). Dordrecht: Springer.

Baum F, MacDougall C, & Smith D (2006). Participatory action research. Journal of Epidemiology & Community Health, 60(10), 854–857. [PubMed: 16973531]

Björgvinsson E, Ehn P, & Hillgren PA (2010) Participatory design and democratizing innovation. In Proceedings of the 11th Biennial Participatory Design Conference (pp. 41–50). ACM.

Brough P, & Williams J (2007). Managing occupational stress in a high-risk industry: Measuring the job demands of correctional officers. Criminal Justice and Behavior, 34(4), 555–567.

Buchanan DR, Miller FG, & Wallerstein N (2007). Ethical issues in community-based participatory research: Balancing rigorous research with community participation in community intervention studies. Progress in Community Health Partnerships, 1(2), 153–160. [PubMed: 20208234]

Buden JC, Dugan AG, Namazi S, Huedo-Medina TB, Cherniack MG, & Faghri PD (2016). Work characteristics as predictors of correctional supervisors' health outcomes. Journal of Occupational and Environmental Medicine, 58(9), e325. [PubMed: 27483335]

Bureau of Labor Statistics. (2014). Occupational outlook handbook: Correctional officers (2014–15 ed.). Washington, DC: U.S. Department of Labor. Retrieved from: www.bls.gov/ooh/protective-service/correctional-officers.htm.

Bureau of Labor Statistics. (2015). Nonfatal occupational injuries and illnesses requiring days away from work, 2014. Washington, DC: U.S. Department of Labor Retrieved from: http://www.bls.gov/news.release/archives/osh2_11192015.pdf.

Carlson JR, & Thomas G (2006). Burnout among prison caseworkers and corrections officers. Journal of Offender Rehabilitation, 43(3), 19–34.

Cherniack M, & Punnett L (2019). A participatory framework for integrated interventions. In Hudson HL, Nigam JAS, Sauter SL, Chosewood LC, Schill AL, & Howard J (Eds.), Total Worker Health®: Integrative approaches to safety, health, and well-being (Chapter 6). American Psychology Association Press.

Cherniack M, El Ghaziri M, Dussetschleger J, Elliot D, & Kuehl K (2015). Making for a healthy CO. American Jail Association Magazine, 29(4), 16–23.

Cherniack M, Dussetschleger J, Dugan A, Farr D, Namazi S, El Ghaziri M, & Henning R (2016). Participatory action research in corrections: The HITEC II program. Applied Ergonomics, 53, 169–180. [PubMed: 26542616]

Dowden C, & Tellier C (2004). Predicting work-related stress in correctional officers: A meta-analysis. Journal of Criminal Justice, 32(1), 31–47.

Dugan AG, & Punnett L (2017). Dissemination and implementation research for occupational safety and health. Occupational Health Science, 1(1–2), 29–45. [PubMed: 29725613]

Dugan AG, Farr DA, Namazi S, Henning RA, Wallace KN, El Ghaziri M, et al. (2016). Process evaluation of two participatory approaches: Implementing Total Worker Health® interventions in a correctional workforce. American Journal of Industrial Medicine, 59(10), 897–918. [PubMed: 27378470]

Elliot D, Kuehl K, El Ghaziri M, & Cherniack M (2015). Stress and corrections: Addressing the safety and well-being of correctional officers. Corrections Today, 77(4), 40–44.

Feltner C, Peterson K, Weber RP, Cluff L, Coker-Schwimmer E, Viswanathan M, et al. (2016). The effectiveness of Total Worker Health interventions: A systematic review for a National Institutes

of Health pathways to prevention workshop. Annals of Internal Medicine, 165(4), 262–269. [PubMed: 27240022]

Ferraro L, Faghri PD, Henning R, Cherniack M, & Team CPH-NEW (2013). Workplace-based participatory approach to weight loss for correctional employees. Journal of Occupational and Environmental Medicine, 55(2), 147–155. [PubMed: 23291996]

Finney C, Stergiopoulos E, Hensel J, Bonato S, & Dewa CS (2013). Organizational stressors associated with job stress and burnout in correctional officers: A systematic review. BMC Public Health, 13(1), 82. [PubMed: 23356379]

Frege CM (2002). A critical assessment of the theoretical and empirical research on German works councils. British Journal of Industrial Relations, 40(2), 221–248.

Greenwood DJ, Whyte WF, & Harkavy I (1993). Participatory action research as a process and as a goal. Human Relations, 46(2), 175–192.

Hasson F, Keeney S, & McKenna H (2000). Research guidelines for the Delphi survey technique. Journal of Advanced Nursing, 32(4), 1008–1015. [PubMed: 11095242]

Helfrich CD, Li YF, Sharp ND, & Sales AE (2009). Organizational readiness to change assessment (ORCA): Development of an instrument based on the Promoting Action on Research in Health Services (PARIHS) framework. Implementation Science, 4(1), 38. [PubMed: 19594942]

Henning RA, Robertson MR, & Dugan AG (2018). Supporting participatory organizational interventions: New opportunities, roles and responsibilities for researchers and OSH professionals. In Nielsen K & Noblet A (Eds.), Designing, implementing and evaluating organizational interventions (Chapter 7, pp. 169–194). Routledge.

Hugentobler MK, Israel BA, & Schurman SJ (1992). An action research approach to workplace health: Integrating methods. Health Education Quarterly, 19(1), 55–76. [PubMed: 1568874]

Kindon S, Pain R, & Kesby M (Eds.). (2007). Participatory action research approaches and methods: Connecting people, participation and place. London: Routledge.

Kinsler PJ, & Saxman A (2007). Traumatized offenders: Don't look now, but your jail's also your mental health center. Journal of Trauma & Dissociation, 8(2), 81–95.

Konda S, Tiesman H, Reichard A, & Hartley D (2013). US correctional officers killed or injured on the job. Corrections Today, 75(5), 122–123. [PubMed: 26740730]

Lalonde L, Goudreau J, Hudon É, Lussier MT, Duhamel F, Bélanger D, Lévesque L, Martin É, & Group for TRANSIT to Best Practices in Cardiovascular Disease Prevention in Primary Care. (2012). Priorities for action to improve cardiovascular preventive care of patients with multimorbid conditions in primary care—A participatory action research project. Family Practice, 29(6), 733–741. [PubMed: 22379187]

Lambert EG, Hogan NL, Jiang S, & Jenkins M (2009). I am fried: Stressors and burnout among correctional staff. Corrections Compendium, 34(2), 16–23.

Lewin K (1946). Action research and minority problems. Journal of Social Issues, 2(4), 34–46.

Lewin K (1948). Resolving social conflicts. New York: Harper & Row.

Mattke S, Liu H, Caloyeras J, Huang CY, Van Busum KR, Khodyakov D, et al. (2013). Workplace wellness programs study. Rand Health Quarterly, 3(2), 7.

McTaggart R (1994). Participatory action research: Issues in theory and practice. Educational Action Research, 2(3), 313–337.

Michaels CN, & Greene AM (2013). Worksite wellness: increasing adoption of workplace health promotion programs. Health Promotion Practice, 14(4), 473–479. [PubMed: 23545334]

Minkler M (2005). Community-based research partnerships: Challenges and opportunities. Journal of Urban Health, 82(2), ii3–i12. [PubMed: 15888635]

Mordock K, & Krasny ME (2001). Participatory action research: A theoretical and practical framework for EE. The Journal of Environmental Education, 32(3), 15–20.

Morse T, Dussetschleger J, Warren N, & Cherniack M (2011). Talking about health: Correction employees' assessments of obstacles to healthy living. Journal of Occupational and Environmental Medicine, 53(9), 1037–1045. [PubMed: 21860329]

Nielsen K, & Abildgaard JS (2013). Organizational interventions: A research-based framework for the evaluation of both process and effects. Work and Stress, 27(3), 278–297.

Nielsen K, Fredslund H, Christensen KB, & Albertsen K (2006). Success or failure? Interpreting and understanding the impact of interventions in four similar worksites. Work and Stress, 20(3), 272–287.

Nobrega S, Kernan L, Plaku-Alakbarova B, Robertson M, Warren N, Henning R, & CPH-NEW Research Team. (2017). Field tests of a participatory ergonomics toolkit for Total Worker Health. Applied Ergonomics, 60, 366–379. [PubMed: 28166897]

Obidoa C, Reeves D, Warren N, Reisine S, & Cherniack M (2011). Depression and work family conflict among corrections officers. Journal of Occupational and Environmental Medicine, 53(11), 1294–1301. [PubMed: 22005395]

Peacock S, Mitton C, Bate A, McCoy B, & Donaldson C (2009). Overcoming barriers to priority setting using interdisciplinary methods. Health Policy, 92(2–3), 124–132. [PubMed: 19346024]

Powell C (2003). The Delphi technique: myths and realities. Journal of Advanced Nursing, 41(4), 376–382. [PubMed: 12581103]

Reeves DW, Walsh BM, Tuller MD, & Magley VJ (2012). The positive effects of participative decision making for midlevel correctional management. Criminal Justice and Behavior, 39(10), 1361–1372.

Robertson M, Henning R, Warren N, Nobrega S, Dove-Steinkamp M, Tibirica L, et al. (2013). The Intervention Design and Analysis Scorecard: A planning tool for participatory design of integrated health and safety interventions in the workplace. Journal of Occupational and Environmental Medicine, 55(12 Suppl), S86–S88. [PubMed: 24284761]

Robertson M, Henning R, Warren N, Nobrega S, Steinkamp M, Tibirica L, et al. (2015). Participatory design of integrated safety and health interventions in the workplace: A case study using the Intervention Design and Analysis Scorecard (IDEAS) Tool. International Journal of Human Factors and Ergonomics, 3(3/4), 303–326. [PubMed: 33898018]

Robertson MM, Tubbs D, Henning RA, Nobrega S, Calvo A, & Murphy L (2019). Designing an organizational readiness survey for Total Worker Health® workplace initiatives. In Bagnara S, Tartaglia R, Albolino S, Alexander T, & Fujita Y (Eds.), Proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018). IEA 2018. Advances in intelligent systems and computing (Vol. 821, pp. 437–445). Cham: Springer.

Salihu HM, Salinas-Miranda AA, Wang W, Turner D, Berry EL, & Zoorob R (2015). Community Priority Index: Utility, applicability and validation for priority setting in community-based participatory research. Journal of Public Health Research, 4(2), 443. [PubMed: 26425490]

Schaufeli WB, & Peeters MC (2000). Job stress and burnout among correctional officers: A literature review. International Journal of Stress Management, 7(1), 19–48.

Shirk JL, Ballard HL, Wilderman CC, Phillips T, Wiggins A, Jordan R, et al. (2012). Public participation in scientific research: A framework for deliberate design. Ecology and Society, 17(2), 29.

Stamatakis KA, McQueen A, Filler C, Boland E, Dreisinger M, Brownson RC, et al. (2012). Measurement properties of a novel survey to assess stages of organizational readiness for evidence-based interventions in community chronic disease prevention settings. Implementation Science, 7(1), 65. [PubMed: 22800294]

Stringer ET (2013). Action research. Sage Publications, Inc.

Tamers SL, Chosewood LC, Childress A, Hudson H, Nigam J, & Chang CC (2019). Total Worker Health® 2014–2018: The novel approach to worker safety, health, and well-being evolves. International Journal of Environmental Research and Public Health, 16(3), 321. [PubMed: 30682773]

van der Velde J, Williamson DL, & Ogilvie LD (2009). Participatory action research: Practical strategies for actively engaging and maintaining participation in immigrant and refugee communities. Qualitative Health Research, 19(9), 1293–1302. [PubMed: 19690209]

Violanti JM (2017). Suicide behind the wall: A national analysis of corrections officer suicide. Suicidology Online, 8(1), 58–64.

Viswanathan M, Ammerman A, Eng E, Garlehner G, Lohr KN, Griffith D, et al. (2004). Community-based participatory research: Assessing the evidence: Summary. Evidence Report Technology Assessment, 99, 1–8.

Warren N, Dussetschleger J, Punnett L, & Cherniack MG (2015). Musculoskeletal disorder symptoms in correction officers: Why do they increase rapidly with job tenure? Human Factors, 57(2), 262–275. [PubMed: 25850157]

Whitehead D (2008). An international Delphi study examining health promotion and health education in nursing practice, education and policy. Journal of Clinical Nursing, 17(7), 891–900. [PubMed: 18321288]

Wilson E, Kenny A, & Dickson-Swift V (2018). Ethical challenges in community-based participatory research: A scoping review. Qualitative Health Research, 28(2), 189–199. [PubMed: 29235941]

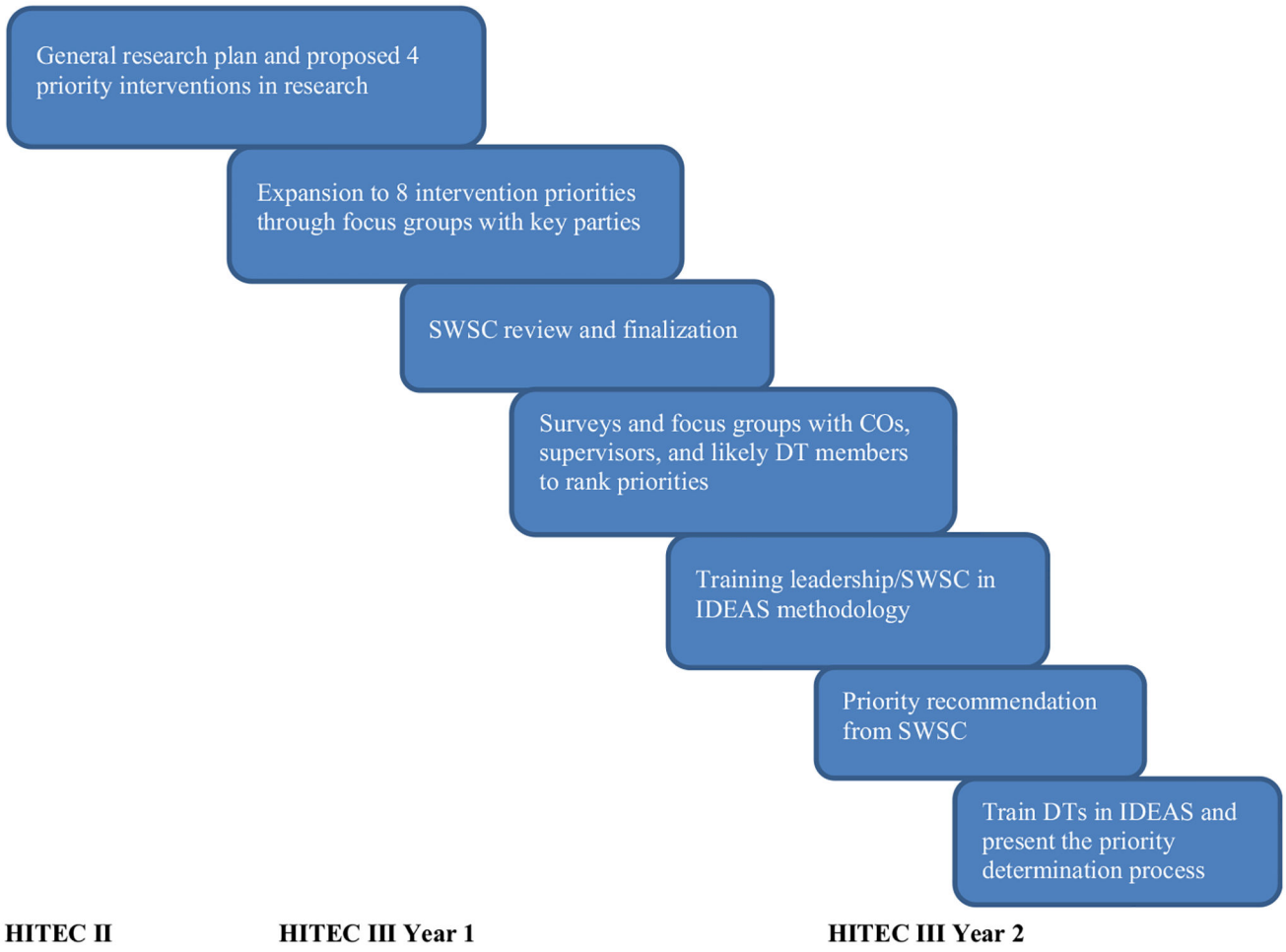

Fig. 1.
Timeline and taxonomy of priority setting for HITEC III

Table 1

Total worker health organizational readiness survey domains and content

Survey Domain	Items	Question Content
I. Current programs to promote employee safety, health, and well-being	3	Presence and integration of health and safety activities
II. Current approaches to safety, health, and well-being in this organization	6	Types of health and safety activities
III. Resources available for safety, health and well-being	4	Availability of time, space, expertise
IV. Resources and readiness for change initiatives to improve safety, health, and well-being	11	Climate/receptivity to innovation and intervention programs
V. Resources and readiness for use of teams	6	Experience and quality of existing health and safety and labor-management teams
VI. Teamwork in your work group	8	Assessment of co-worker and supervisory cooperation
VII. Resources and readiness for employee participation	6	Status of processes for employee participation
VIII. Management communication about safety, health and wellbeing	8	Managerial communications on health and safety activities
IX. Multifaceted organizational health climate assessment	10	Multi-dimensional health climate scale
IX. Safety at work	6	Multi-dimensional safety climate scale

Table 2

Survey responses on participation and integration (n = 24)

Domain	Item	Yes	No	Did Not Know
Participatory Climate				
	At DOC health and safety activities are regularly communicated to the workforce	11	8	4
	Activities of the Quality of Work Life, Diversity, and Health and Safety Committees are regularly communicated to the workforce	18	3	1
	Suggestions from COs and corrections staff about safety and health issues are taken seriously at DOC	9	9	5
	There is currently a managerial culture at DOC overall that encourages all employees to get involved in decision making	6	10	9
	There is currently a managerial culture at my facility that encourages all employees to get involved in decision making	7	10	8
	Suggestions by COs and corrections staff are considered equally to suggestions by supervisors and senior leadership	9	11	3
	There is a well-known process in place for voicing health and safety concerns	9	11	4
	At DOC, major things are going on that would make it hard to adopt a new approach to health and safety	4	9	11
Integration				
	At my facility, personal health issues are primarily seen as an individual's problems	12	7	5
	At my facility, making changes in procedures and working conditions are considered or seen as a possible approach to addressing health issues	9	7	8
	At my facility, both issues at work and individual factors are given equal weight as causes of health problems	5	11	8

Table 3

Ranking of the eight consensus topics for interventions

Rank	Issue	Ranking of Difficulty (8 = hardest)
1 (most important)	Mental health of COs in violent culture	7
1	Effects of violent incidents on workforce	8
3	Health culture including fitness and nutrition in corrections	1
4	Work-family conflict	3
4	Overtime and sleep	5
6	Financial stress and job insecurity	6
7	Corrections: making the public case	2
8 (least important)	Managing inmate mental health	4

Table 4

Suitability of mandated committees for each of the eight themes or topics for possible intervention

Themes	QWL	Health & Safety	Diversity
Health culture including fitness and nutrition in corrections	26%	83%	17%
Overtime and sleep	17%	52%	9%
Work-family conflict	22%	52%	22%
Mental health of COs in violent culture	13%	70%	9%
Financial stress and job insecurity	17%	26%	17%
Inmate mental health	0%	30%	13%
Effects of violent incidents/post-traumatic stress	26%	52%	22%
Corrections: making the public case for its value	30%	39%	30%