



Pay, Power, and Health: HRI and the Agricultural Conundrum

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Abstract

As part of a five-year integrated study on heat-related illness (HRI) among farmworkers in California, the California Institute for Rural Studies (CIRS) convened focus groups with farmworkers in regions of the state where HRI was prevalent. CIRS also interviewed employers and other stakeholders in the state. While this study was not designed to identify causal relationships, we were able to identify patterns of interaction that point to the intersection of agricultural system structures and worker agency in making self-care decisions. Structural categories, such as productivity losses/gains, cut across all self-care choices, often overriding other factors for decision making.

Keywords

farmworkers, heat illness, self-care, rural, piece rate pay

Introduction

The major environmental and personal risk factors for heat-related illness (HRI) are known. And yet, high numbers of deaths occur among agricultural workers annually that are attributed to HRI. From current research on core body temperature and the effects of hydration, clothing, work-rate and environmental conditions (Courville, Wadsworth, and Schenker 2016; Hoyt et al. 2017; Schenker 2013; Seo et al. 2016), it is clear that simply training workers to drink more water or rest in the shade will not

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necessarily decrease occurrence of HRI. Between the years 1992 and 2013, at least 689 workers in the United States died from HRI, and 56,114 were injured severely enough to result in days away from work (Centers for Disease Control and Prevention 2008; U.S. Department of Labor n.d.-a). Agricultural workers are by far the most severely affected group of workers, with an annual average of heat-related morbidity for crop workers of 0.39 per hundred thousand workers, compared with 0.02 for all U.S. civilian workers (Centers for Disease Control and Prevention 2008).

Because little is known about the sociocultural and behavioral factors that impede the reduction of HRI among agricultural workers, this study was initiated to investigate factors that influence decision-making processes in self-care related to working in the heat. *This study was part of the California Heat Illness Prevention Study (CHIPS), initiated in 2012 in response to the ongoing impact of heat on farmworkers. The overall goal of CHIPS was to understand both the physiological responses to heat among California farmworkers, and the sociocultural influences that affect the behavior of fieldworkers and their choices for self-care.*

California is an excellent location for initiating research to understand the complexity of HRI occurrence and prevention. California has the largest population of farmworkers in the nation, with estimates ranging from two hundred thousand to five hundred thousand individuals engaged in field labor.¹ California has the most stringent regulations in place for protecting outside workers from HRI (State of California 2010, 2015). Despite these safeguards, there are more than two hundred heat-related workplace illness claims annually in California, reflecting nonfatal illnesses, and this number increases significantly in years of severe heat waves. Coupled with the national incidences of worker fatalities due to heat (Centers for Disease Control and Prevention 2008; Rao 2007; U.S. Department of Labor n.d.-a), it appears possible that workers exert themselves in the fields beyond healthy limits, even though intervention strategies are in place, including workplace training (Stoecklin-Marois et al. 2013; U.S. Department of Labor n.d.-a). This poses questions about the assumptions that undergird current HRI-prevention strategies and regulatory practices in California.

California's San Joaquin Valley is home to the largest proportion of the state's agricultural workers (Villarejo and Runsten 1993; Walker 2004), who work in extremely high temperatures. From 2005 to 2009, the California office of the Occupational Safety and Health Administration (CalOSHA) received reports of ninety-three cases of severe HRI in farmworkers, including deaths. The rate of heat-related fatalities has grown over the past ten years, and extreme heat events are expected to increase with climate change (California Department of Public Health 2009; McCarthy et al. 2001).

The relationship between how a worker identifies a potential workplace health risk and takes steps to prevent that risk is a topic of concern and debate within the literature on worker health (Burke et al. 2006; Cohen and Colligan 1998; Lam et al. 2013). A study of heat illness among North Carolina farmworkers by Mirabelli et al. (2010) not only identifies some specific factors that contribute to effective prevention and avoidance of heat illness but also raises questions about persistent heat-illness incidences despite farmworker knowledge of prevention techniques.

Investigations into group relationships among agricultural workers have found that the reproduction of worker identities (Akerlof and Kranton 2000) help explain the persistence of compromised health over time (Duke 2011). Subjective views influence and shape behaviors and choices of workers as well as their roles in the labor force (R. D. Holmes 1989; S. M. Holmes 2013; Surkin and Georgakas 1999). Membership within a particular group based on race (Duke 2011; Mines, Nichols, and Runsten 2010), ethnicity (Landrine and Klonoff 2004), gender (Martin 2003), and citizenship (Martin, Fix, and Taylor 2006; Thomas 1985) has also been found to interact in ways that shape both self-care behavior and overall workplace dynamics. These findings shed light on the social contexts that operate all around workers, pointing to structural relationships that serve to limit worker agency. Likewise, the contexts and frameworks that workers draw upon to make sense of their world are based in the social and material dimensions of agricultural production (Knights 1990; Mann 1990; Thomas 1985).

There are significant debates among social scientists over the nature of agricultural production (Mann 1990; McMichael 1994) and the persistent forms of farm labor in highly industrialized societies (Majka and Majka 1982; Martin 2009; McWilliams 1935). All sides agree that work in farm fields is lower wage and riskier than that in most other employment sectors (Aldrich 1997; Guthman 2004; Mendeloff 1979; Walker 2004). The exclusion of agricultural workers from fair labor standards can be traced back to the Fair Labor Standards Act of 1938 in which President Roosevelt conceded to Southern Democrats on the agricultural workforce to improve conditions for the majority of workers in the United States (Samuel 2000). Compounding this exclusion are highly stratified relations of production and workplace management in agriculture (S. M. Holmes 2013; Lobao 1990; Wells 1996).

Thomas (1985) found evidence that employers in agriculture use direct and indirect means of control to increase worker productivity, and this extends to choices they make related to workplace organization and hiring practices. Relationships between such types of control in workplace settings have been found to negatively affect worker health (Karasek and Theorell 1990; Theorell 2003). Controlling workplace organization and job hierarchies reduces conflict between workers and employers (Knights 1990; Thomas 1985), and speeds the pace of work at the expense of worker health (Fairris 1998; Grzywacz et al. 2014). Westerlund et al. (2010) found that management style impacts the health of workers, indicating the importance of employer relations in worker self-care.

Under the direction of the University of California, Davis Western Center for Agricultural Health and Safety, California Institute for Rural Studies (CIRS) undertook a qualitative research project focused on the behaviors and perceptions of agricultural workers with regard to HRI. Our analysis of the structure-agency dynamic suggests that decisions to engage in self-care are calculated based on multiple integrated factors, and that some factors more than others may significantly limit the range of options a worker will act upon at any point in time.

We found two overarching structural patterns that cut across all the focus group sessions.

- The first pattern is tied to the structure of *payments and the position of participants within the labor force hierarchy*.
- The second is related to the interplay of *worker control and employer relations* in the workplace.

Method

Sixteen focus groups were carried out in the San Joaquin Valley, California between 2012 and 2016 involving 166 agricultural workers. In addition, three in-depth interviews were done with direct supervisors of crews, fifteen in-depth interviews were completed with farm operators, and five with farm labor contractors.

Purposive sampling was used to identify and recruit focus group participants. Staff from local community-based organizations serving farmworkers in the study areas recruited participants through the use of a screening tool. Recruiters used a process that ensured participant age (over eighteen years) and involvement in farm labor (active in the previous three years). In addition, workers who stated that they had at least two years of work in the fields within the past three years were invited to participate. Participants had to have experience working outside in the fields during daylight summer temperatures. CIRS employed a consent process, including a consent form, consent waiver, or alteration of consent that met all federal and state requirements and was approved by the University of California, Davis (UC Davis) institutional review board (IRB).

Focus groups were facilitated by a moderator and a note-taker from JBS International. Both were native Spanish speakers. For indigenous groups, there was a local indigenous interpreter present. Each focus group was recorded and later transcribed in Spanish and then translated into English for analysis. In addition, the note-taker documented nonverbal reactions and expressions among participants. Following each focus group, the moderator and note-taker debriefed about the focus group and recorded observations. This method of gaining information allowed us to grasp farm workers' feelings and perceptions on specific issues related to HRI.

Overview of Geography and Relation to HRI Reports

Locations for focus groups, listed in Table 1, were selected based on regions with high summer temperatures and reported HRI morbidity or mortality in previous years as can be seen in Table 2. Counties with the highest numbers of HRI and heat-related deaths were Fresno and Kern Counties. Focus groups were held in Fresno, Kern, Tulare, Stanislaus, Merced, and Madera Counties.

A team of experienced, multilingual English/Spanish/Mixtec/Triqui facilitators conducted a total of sixteen focus groups in the selected Central Valley counties. Five groups were mixed gender, seven groups were males only, and four were females only. Four of the groups were administered in indigenous languages—Mixtec and Triqui. The choices for composition of focus groups evolved throughout the project. We found it was infeasible to recruit enough indigenous females to hold a single gender group,

Table 1. California Heat Illness Prevention Study.

Group type	Date	Location (county)	Gender	Language	Subject	No. of participants
Pilot	6/13/13	Fresno	Mixed	Spanish	Heat Illness	10
Pilot	6/14/13	Fresno	Mixed	Mixteco	Heat Illness	15
Focus Group	7/5/13	Fresno	Men	Spanish	Heat Illness	6
Focus Group	8/8/13	Fresno	Women	Spanish	Heat Illness	9
Focus Group	8/9/13	Fresno	Men	Mixteco	Heat Illness	10
Focus Group	8/6/14	Tulare	Men	Spanish	Heat Illness	12
Focus Group	8/7/14	Kern	Men	Spanish	Heat Illness	12
Focus Group	8/7/14	Kern	Women	Spanish	Heat Illness	16
Focus Group	9/3/14	Tulare	Women	Spanish	Heat Illness	10
Focus Group	9/3/14	Tulare	Men	Mixteco	Heat Illness	10
Focus Group	9/17/15	Merced	Mixed	Spanish	Mitigation	14
Focus Group	9/20/15	Madera	Mixed	Triqui	Heat Illness	8
Focus Group	12/14/15	Stanislaus	Men	Spanish	Heat Illness	5
Focus Group	1/28/16	Stanislaus	Women	Spanish	Heat Illness	11
Focus Group	1/28/16	Stanislaus	Men	Spanish	Heat Illness	4
Focus Group	07/29/16	Fresno	Men + 1 Woman	Spanish	Mitigation	14

Table 2. Reported HRI Incidents 2012-2013.

Incident	County	Crop	Year
Hospital	Kern	Almond	8/7/2013
Nonhospital	Kern	Grapes	7/25/2013
Nonhospital	Napa	Grapes	9/6/2013
Nonhospital	Kern	Grapes	7/23/2013
Nonhospital	Fresno	Cantaloupe	7/16/2013
Hospital	Yolo	Wheat	7/5/2013
Fatality	Fresno	Watermelons	7/2/2013
Hospital	Kings	Celery	7/3/2013
Nonhospital	Stanislaus	Sweet potatoes	7/3/2013
Hospital	Fresno	Melons	7/5/2013
Nonhospital	Fresno	Almonds	7/2/2013
Fatality	Monterey	Lettuce	10/2/2012
Hospital	Madera	Grapes	8/29/2012
Nonhospital	Kings	Cotton	7/31/2012
Fatality	Fresno	Peaches	1/11/2013
Hospital	Kern	Carrots	7/26/2012
Nonhospital	Fresno	Peaches	7/27/2012

Counties in bold were included in study. HRI = heat-related illness.

resulting in two mixed gender indigenous groups and two male indigenous groups. Our initial concern in holding mixed gender groups was that females would be inhibited, but this did not turn out to be the case. Our goal was to select representatively from the farmworker population: 24 percent female (Kandel 2008), 30 percent Indigenous (Mines, Nichols, and Runsten 2010), and the remainder Spanish-speaking males.

The focus groups were conducted in nonwork settings. They were administered at locally based nonprofits—all specifically serving farmworkers and some specifically serving indigenous Mexican farmworkers. Recruiters for the focus groups were employed by local community-based groups working with farmworkers in the San Joaquin Valley. Participants were screened to ensure they were over eighteen years of age, were either currently involved in farm work, or had been active at least two years within the previous three years. Participants had to have worked outside in the fields during daylight summer temperatures.

Questions were developed by CIRS in conjunction with the UC Davis research team, and focused on discrete behavioral and workplace variables. The focus group moderator guide was designed to explore worker behaviors and perceptions related to HRI in the fields, at home, among their coworkers, and within their everyday lives.

Focus groups were digitally recorded. Written transcripts were generated from these recordings first in Spanish and then translated into English by native Spanish speakers. The recorded sessions conducted in indigenous languages were translated into Spanish during transcription before being translated into English.

Sixteen sets of transcripts were then reviewed for technical accuracy, general completeness, and overall content by CIRS staff. Minor data cleaning was performed on the transcripts to address clarity, technical errors, and language/word choice decisions made by the transcription team. There was an open dialogue among focus group moderators, transcribers, and the analytical team.

A process of open coding on the transcripts was then undertaken. Open (or free) coding yielded a set of holistic codes that captured high-level themes and recurring ideas for further investigation. The holistic codes were discussed within the research team at CIRS before a second round of focused axial coding was conducted.

Axial coding was further informed by theoretical and research findings gleaned from the literature review, and combined with a process of analytic memoing and variable mapping. The coding and analysis were based in grounded theory (Holton 2010). The final code list was revised, built, and refined until all transcripts were coded.

Key informant interviews were conducted in-person and over-the-phone using a semistructured interview protocol (guide). This guide was a list of questions or general topics asked of every interviewee in a systematic fashion, to explore the topics of research. The researcher was free to inquire more deeply into topics within the predetermined areas of interest and allow the participant to speak in depth on related topics. Some interviews were recorded with the permission of the participant, but for the most part, extensive notes were taken by the interviewer, reviewed, and filled in on completion of the interview while it was still clear in the interviewer's mind. Many

participants refused to be recorded, but when allowed, recordings were transcribed and combined with interviewer notes.

Analyses were necessarily ongoing to reduce the possibility of gaps in data collection. This iterative process allowed the study to focus quickly on the issues important to participants and then to explore them in greater depth. It also allowed us to make sure all discussions were being conducted optimally and that the information collected met our goals. Our ongoing, iterative analysis also generated testable hypotheses about the conditions—both in the field and in the daily lives of workers—that shaped behaviors or explained described patterns of behaviors (Becker 1998; Miles, Huberman, and Saldaña 2014; Stake 2010). For example, workers consistently referred to the attributes of a “good worker” in early focus groups. This led us to revise the focus group guide to explore this concept in depth.

We created a thematic framework. This framework consisted of indexing, coding, interpreting, networking, and tabulating information. In the initial focus group transcripts, this was done by the qualitative analysts without the assistance of software. However, as the data sets grew in volume, it was decided that the transcripts, codes, and notes would be input into AtlasTi qualitative analysis software for ease of interpretation and data handling. This move of data also allowed for more rapid review and analysis of networks and frequencies of codes.

Major themes emerged in the process of reviewing focus group data, and analysts developed categories and made comparisons among all groups. This allowed for reduction of the data from the focus groups and selection of those statements that were most relevant to study goals. For example, in reviewing of transcripts, we looked at the subjective reactions of participants, including actual words used and their meaning, the context of those words, the frequency and extensiveness of comments, the intensity or depth of feeling of the comments based on vocal tone and nonverbal expression, internal consistency of comments for each specific participant, specificity of responses (i.e., are they firsthand or hypothetical) and any “big ideas” that emerged through the discussions that revealed a trend in perceptions of the individual group and of the series of groups as a whole. Focus groups provided a venue to explore topics through an interactive dialectic among participants and facilitators.

Results from key informant interviews were broken into manageable units and analyzed in a similar manner to the focus group information. Using content analysis, we coded the data for keywords, patterns, and concepts. Coded data were grouped into content categories based on context, frequency, and key concepts. Grounded theory was useful in answering questions concerning procedural issues. For example, it elucidated the conditions that prevent workers from taking breaks—from both the employer and employee perspectives.

Analysts conducted content analysis of the transcriptions and notes. We systematically read through the transcripts and assigned codes to specific characteristics or phrases within the texts. Learning through these forms of communication provided a comprehensive understanding, including subcultural values and group norms, and identified potential strategies to support preventive measures.

Results

Payments and Position within the Labor Force Hierarchy

The majority of the participants in the Fresno and Kern-Tulare focus groups were paid by piece rate. Piece rate pay is a common form of compensation in agriculture, especially during harvest where workers are paid by the box or bucketful picked rather than by the hour. Piece rate boosts productivity (Billikopf and Norton 2004) but can increase accident and injury risk (Davis 2016) and reduce impetus for workers to stop and rest (Billikopf 1996).

No, most [hourly jobs] don't pay. Like us where we are, it is by contract,² people give as much as the body can give. If people know they can't go on, they sit, but because it's by contract, one gives as much as the body endures, because the more you deal, the more you make. You earn more . . . (Participant 2, Farmworker Focus Group, August 8, 2013)

Northern San Joaquin Valley (NSJV) participants (Stanislaus, Madera, Merced) were paid by the hour at the time of the focus group convenings, but all had been paid by piece rate at some point in their careers. The relationship between quantity picked and payment earned was a constant part of the workplace calculus for these workers. This was especially true for decisions they made that were related to self-care and their level of risk from exposure to high-heat conditions.

Adequate hydration is of utmost importance in reducing HRI. The U.S. Department of Labor standards for outside work focus on “water, rest, shade” (U.S. Department of Labor n.d.-b). As a result, all focus groups included dialogue dedicated to considerations of hydration, the benefits of drinking water, and the challenges associated with hydration throughout the workday. The exchange below highlights the differences in decision making with regard to hydration and the method of payment.

On the contrary, they want you to do more work. Sometimes we ask them to bring water when we run out, and they say, well you go get it, there is water at the beginning of the row. They don't even want to do that. (Participant 3)

And that is what happens, the foreman provides water, but since it is piece work, if you want water, you can go get a drink of water, but if not then you don't go . . . but if it is per hour, then if you are thirsty, then you go get your water. (Participant 1, Farmworker Focus Group, September 3, 2014)

Workers make tradeoffs between lost pay, lost time, self-care (especially for water), and bathroom breaks. They know they do not drink enough water. And they realize that if they did drink enough water, they would have to go to the bathroom more frequently and thus be less productive, make less money, and run the risk of not getting called back for work in the future. This holds true even when the supervisor encourages them to drink and provides a nearby water source.³ Discussions emphasized the desire by workers to make their own economic calculations about hydration and rest periods. A deep degree of belief is held around this matter, as one participant explains:

And so, sometimes [the supervisor says], “Go and drink water . . . and don’t get dehydrated,” and you say, “Well, no, we already drank some, we have our own right by our feet.” (Unidentified Male Participant, Farmworker Focus Group, August 20, 2015)

Participants referred to their desire to be seen as a good worker, with great fortitude, and the interest of employers to hire fast, low-maintenance workers. Taking breaks or rests under piece rate agreements result in little financial loss to the employer.⁴ Workers, on the other hand, refer to potential losses in earnings while idle, including the risk that another farmworker could step in and take their place. As a result, many focus group participants bring their own water to the work site to reduce frequency of time spent not picking, and to maintain more control of their overall labor time.

When supervisors paying by the piece interrupted workers with encouragements to take breaks or stop for water, they were seen as a drag on the workers’ potential to maximize wages.

Yes, we continue working because we want to advance to earn what we are supposed to for the day, when it is piecework, we have to continue working, until we can’t handle it anymore. Even though the foremen place shades and ask us to drink water, they don’t know our feelings that we want to continue working to earn a little bit more money and we just rest in the end. (Participant 5, Farmworker Focus Group, June 14, 2013)

Power imbalances are pervasive in both piece rate and hourly wage agreements. The difference is that the power disparity under hourly wage agreements was most pronounced among the participating women and indigenous men. In addition, women and indigenous workers were more commonly paid by the piece and employed for a shorter period of the year. In some instances, the employer used information as power, and withheld facts about how or how much workers were getting paid. Some NSJV participants mentioned efforts to make demands on employers or take a stand against perceived violations of their rights. Here is an example from one participant:

Well . . . what I’m thinking: you’re not giving me enough information and confidence to say, “Today I’m going to sit for about 15 minutes because I feel a little tired” or something . . . the breaks and the information that they give you . . . it’s not enough. . . . I still don’t feel it’s enough. (Male Participant 4, Farmworker Focus Group, January 28, 2016)

The tendency for employers to withhold information was referred to more frequently among the women and the indigenous men, who pointed to several instances where they were misled about payment rules, amount of work to complete, and/or their rights to seek rest or shade.

And there are more [women] working [now], and a woman I know was saying that the foreman was using a strategy to advance his work, right. And he asked them “come tomorrow, we will work.” They present on the day and they already know that the work is per hour, but he told them “today, we will do piecework” when they were already there. So people would say, I already woke up early, I made my lunch and I am here already, there is no other option but get in. And many times, they say that per hour, they don’t earn

as much. And they were saying, this is how we work, one day we work per piecework, other day per hour and that is how they balance out. And I think that is a form to swindle people. (Participant 10, Farmworker Focus Group, September 3, 2014)

Worker Control and Employer Relations

Our analysis of worker control and employer relations provides evidence of the larger structural relationships between farmworkers and their employers, power being lodged with the employer.

In our interviews with employers, we noted a clearly stated sense of pressure to complete time-dependent tasks on time. With harvest, it is essential to get produce out of the field to meet market demands or to avoid spoilage of a crop. Time-related tasks and meeting deadlines are of primary concern to farmers. Thus, productivity becomes an imperative by which farmers decide to modify either expectations of their workers or the structure of the workday. Under hot conditions, employers we interviewed chose from one of three general tactics.

- Allow workers to stop working when temperatures get very high, usually above 100 degrees
- Accept a slower pace from workers, which may result in a longer day
- Modify the workday by having workers arrive early in the morning, or work at night

Employers stated that they give workers control to decide when they stop for a rest and when they stop work for the day. However, employers also know that given the choice, workers will almost always choose to continue working, due to their economic demands. Employers did not acknowledge the pressures workers feel to be seen as “good workers” or to meet individual economic goals. Employers benefit from this choice, by having the crop ready for delivery on time. In addition, it is more profitable for the employer to encourage workers to complete the job quickly in order to meet production goals. Employers view “good workers” as those who decide to continue working to meet productivity goals.

And, while workers in the focus groups stated that they liked having the control piece rate pay gave them, including being able to decide when to rest and go home, none of them ever cited an example of a time when they had actually exercised the option to stop work early.

In analyzing employer interviews, we found that some farmers believe that workers are reluctant to take breaks and use air conditioning because of their essential nature.

Coming from Mexico, they don't have air conditioning. When the guys finish work, they sit outside. We provide air conditioning in the building where they live of course, but by large they all are old school and they figure that they are tempered. It would be different if they were in an office with air conditioning, they would become very tender and they know that . . . I think we are so concerned at times but these people are ok. (Farmer 666, 2014)

These same farmers, in fact, believe workers prefer heat and working in hot weather and that workers know when they need to take breaks and how best to take care of themselves. Employers believe that when they assign agency to workers in this way, they are shunning paternalism and giving over power and control to workers.

In my opinion the farm labor contractor and employer should not be responsible for that [providing water]. What about personal responsibility? (Farm Labor Contractor Interview 1)

In effect, what they are doing is assigning personal responsibility for HRI to workers.

The deep sense that fortitude is a virtue on the part of farmworkers couples with farmer beliefs about worker essentialism to create this “good worker” identity. The result is a tendency for workers to avoid cool down periods and reinforcement of a racialized view of worker behavior among some employers.

The concept of fortitude came up in every focus group discussion. In order to investigate the concept of a “good worker,” focus group participants in Stanislaus, Merced, and Madera Counties were asked a series of questions related to their conceptualization of what makes a good worker: an exploration of the attributes that they associate with a worker who is viewed in a positive light.

Both men and women described good workers in relation to productivity as well as the contribution individual speed has on collective worker pace. This positive notion of “good” workers emphasizes those who “give you a hand,” or those who “continue working.” The measurement of goodness is tied back to a valuation of work unit over some measure of time. Another aspect of goodness as a worker was self-sacrifice: not taking breaks and not resting. The recurring theme is that good workers work fast and do not slow things down and jeopardize success for the group. They continue working in spite of the conditions or how they feel.

Segregating the male responses, we found an additional emphasis on compliance with supervisors, and pleasing the employer. One male participant from the Indigenous community brings this into sharp focus: “[You] try harder, because there are those who work more than you who are coming back” (Male Participant 4, Farmworker Focus Group, 1/28/16). A good worker is one who works hard and is asked to return to work, day after day.

Workers’ experiences with employers varied quite widely, yet there were some recurring themes related to employer relations that emerged from the data. There were two very broad categorizations of employers that participants identified: employers who care and employers who do not care. This distinction largely falls along lines of moral obligation to worker well-being and a sense of fairness.

In-depth interviews with crew supervisors also described the difference between “good” and “bad” supervisors. According to these interviews, a “good” supervisor is someone who is people oriented, someone who works well with people. They treat people with respect. They talk to people in a proper manner and have patience in dealing with many different personalities. They do not demand things. They know

workers' skill sets and abilities. They care for people. A "bad" supervisor does not treat people right: demands and expects too much from people. In addition, "bad" supervisors show favoritism among workers, assigning easier tasks to their favorites.

To explore further the dynamics of relationships and power in the workplace, participants in later focus groups (Kern-Tulare and NSJV) were asked to imagine a role reversal, a sort of thought experiment, to consider what they would do to help workers avoid HRI if they were in the role of supervisor. Indirectly, it was an invitation for participants to think abstractly about the workplace and to consider how they might change things that are currently beyond their control.

One group of responses clustered around notions of limited control, that workers could not make demands or even expect things to change. This was especially true in regard to the organization of the labor process (timing, pace, field conditions). However, there was a sense that there might be some receptivity to worker suggestions for technical improvements, such as changing pruning methods or using a certain harvest technique.

Another cluster of responses orbited around concrete practices that workers already observed among their own supervisors. This cluster included suggestions such as a restatement of existing rules governing breaks, affirmations to ask workers whether they are feeling well, and advising workers about what to avoid at work (e.g., drugs, alcohol) to reduce their risk level for HRI.

Participant explorations of role-reversal questions offer insights into the dynamics of worker control. Envisioning reversals of power was not an easy shift in perspective for many participants, some even emphasized that they have no control at work and to speculate is too hypothetical to even ponder. One Indigenous participant asserted, "No, there is no control. They control us." However, some participants were able to articulate their visions, and they most frequently emphasized the values and behaviors of supervisors that align with low-level worker control.

If I were the supervisor or the boss I would treat my workers well, and tell them to work at their own pace, to their pace. I would not force them, I wouldn't ask them to turn a certain amount because they will not all work at the same pace (Unidentified Participant, Farmworker Focus Group, September 3, 2014)

Voluntarily bringing water to the workers in the field and offering them a drink was described as an attribute of a more caring employer, despite the fact that this action by the employer had no clear relationship to the workers' willingness to drink the water they might be offered. And workers across the board were wary of the source of employer-provided water, afraid that it was not clean. But the action itself was viewed as caring.

Participants also referenced requirements or directives by supervisors to take breaks or seek shade, as impositions when under piece rate, and solely as acts of legal compliance under hourly agreements. In other words, dictating self-care by employers was not necessarily viewed as a caring action or an attribute of a good employer.

To further explore relationships in the field, workers were prompted to discuss what makes a “good friend” at work. This shifted conceptualization toward someone who encourages you to engage in self-care, alongside others, on behalf of your well-being. As one participant explained, a good friend at work is, “someone that comes over and tells you let’s take a little break, let’s eat, or go and get a drink of water, or go to the bathroom” (Female Participant 2, Farmworker Focus Group, 1/28/16). Clearly, a good friend is someone who cares for you at work, much like a good supervisor.

Discussion

Pay

Our research shows that there was a tension in the focus group discussions between the assertion that workers have a choice to work as much or as little as wanted when paid by the piece, and the compulsion to ignore the self and subordinate the body to the rhythms and pace of the task at hand. Workers subordinate their bodies most when getting paid at piece rate. This tension is further reinforced by a set of beliefs and assertions about the quality of water provided by employers. Holding misconceptions about water consumption and the impacts of water on the body while at work may support the perpetuation of piece rate work in agriculture, and contribute to the rapid pace described as most desired by the supervisor, the crew, and the strong individual.

Workers referred to their own personal desire to be seen as a good worker who can keep going and get asked back day after day. They also wanted to meet the need of employers to hire fast, low-maintenance workers. Taking breaks or rests under piece rate agreements are viewed as a financial loss to the worker. The worker fears both a loss in immediate earnings, and the possibility for a longer term loss if another worker steps in and maintains a faster pace.

Not only does the institution of piece rate pay undercut efforts to keep workers safe (Johansson, Rask, and Stenberg 2010), but it also reinforces misconceptions and beliefs workers hold about their bodies and their health, in ways that benefit employers. The idea that workers exercise control over their pace and ultimately their level of exertion convolutes worker efforts to engage in self-care and take timely action to address HRI symptoms. The incentive to demonstrate fortitude in the workplace even when suffering from early symptoms of heat illness is best understood as both a coping mechanism and a response to the structure of wages in the sector (Fleischer et al. 2013). The risk with this compensation strategy for workers is that it can ultimately result in a worker losing his earning capacity altogether if health and safety are compromised in the process (Horton 2016).

Employers often argue that a piece rate pay structure ensures a more continuous harvest, and it helps meet market and crop deadlines. The benefits to the employer are a workforce working at a rapid pace that allows employers to control the timing of harvest and to ensure they get produce out of the field before it spoils. Piece rate pay also allows the employer to assess workers and determine which ones fit the ideal of a good worker. Employers in our study did not acknowledge the risks of piece rate work.

Gregorio Billicopf has completed comprehensive research on piece rate versus hourly pay in agriculture. He encapsulates his observations here:

When paid by the hour, the fastest crew worker performs at the same speed of the slowest one. This can be easily observed when driving by a field or walking into an orchard. All the workers seem to be moving across a field or orchard together. When workers are moving very fast or running, or are well spread out through the field, it usually means that the piece-rate pay has been well designed—at least from the worker perspective. If workers are moving faster than by the hour but not as fast as in a motivating piece rate, it often means that workers are paid on a group piece-rate. (Billicopf 2008)

The findings of the current study indicate that the pressures of the productivity imperative on employers and the desire by employees to be seen as good workers—by both peers and employers—have a direct impact on worker self-care choices.

The incentive to demonstrate fortitude in the workplace even when suffering from early symptoms of heat illness was determined, from worker responses, to be a way to both cope with demands and respond to the roles, rules, and goals of the workplace. The ultimate risk for workers is that the pressure to demonstrate fortitude can result in long-term loss of earning capacity when health and safety are compromised by pushing oneself too hard under hot conditions. Billicopf (2008) notes that workers working under piece rate systems require a higher intake of water, but our focus group participants clearly state that while getting paid by the piece, they prefer not to stop working to take water breaks.

Power

Employers believe they are giving workers the power to make choices about resting and drinking when they state that workers have this right. By handing this decision to workers, they are, in reality, absolving themselves of responsibility for negative outcomes. In practice, workers do not embrace nor exercise the power employers say they are given because they use a complicated calculus for decision making that includes economics as well as workplace and social factors. Employers espouse the independence and agency of workers to care for themselves without clearly stating an awareness of the multiple structural factors influencing workers' decisions.

There are also inherent contradictions between the individual orientation of workers and the existence of formal, legal regulations in the workplace. Workers manage the stress between working as hard and as fast as possible, and having a need to take care of themselves. Data point to a divergence between workers knowing about legal regulations and rights and believing that the rules exist only as a requirement for employers and not as a mechanism to support worker freedom to engage in self-care.

In the case of HRI, the power imbalance in the workplace makes it very difficult for workers to exert control that is self-directed and that employers often state they “give” to workers. Required safety and health training, along with existing legal regulations, create a buffer for workers, but the data from our research point to a more complex

workplace than such top-down protections and preventive measures can mitigate. Employer manipulation of payment rules and workplace safety requirements are ways of manifesting power indirectly (Boonstra and Bennebroek Gravenhorst 1998). The employer may use information as power, and withhold facts about the pay scheme that can result in workers underestimating their need for self-care preparations or their later choices around rest and hydration.

Another popular piece rate game is simply not telling employees how much they are earning until after the job is done. Piece-rate paid cucumber pickers at one farm did not find out what the pay per bucket was until the end of each day. When I question farm employers about this practice, their immediate retort is, "My workers trust me." This notion that the workers trust management in setting a fair piece rate after the work is done is, of course, a fallacy. A worker thinning peaches expressed frustration at not knowing what the piece rate was: "If I knew how much I was getting paid per tree, I would have already finished this long row and would be on my way back." His employer had given me the same line I had heard so often.

Farm employers reason something like this: "It is hard to set a piece rate because field conditions are different every day. When workers are paid by the piece they perform, on the average, 40 percent faster than hourly paid workers. So, I will calculate the cost per piece making sure my average employee makes 40 percent more than when he is paid by the hour." (Billicopf 2008)

The employer's productivity imperative reinforces a tendency to push workers forward under adverse conditions. This employer-induced imperative is like the pressure workers place on themselves to maximize their personal earnings and maintain their place on the crew. And thus, employers emphasize good workers as those who continue working. Simultaneously, workers put pressure on themselves to make a certain wage or quota, to be viewed as a good worker, and to not let their coworkers down, reinforcing the farmer's production imperative. The employer's emphasis on time-dependent production deepens the desire on the part of workers to be seen as good workers and, thus, to make more money and be retained on the crew.

Levels of employer control depend upon manifestations of power to minimize worker control (Kanter 1979). Farmworkers have little power in the workplace and little control over many aspects of their lives. Exerting power and control when they can is important to them. A large number of workers exert a modicum of power/control by bringing their own water to work. By not relying on their employer for water, they know that the water they are drinking is high quality and that by carrying their own water into the fields they can reduce their down time—both in taking breaks to get water and to use bathrooms. This also allows them to maintain control over the total time they spend working. However, it is virtually impossible for workers to carry enough water for their own safety on hot days.

The type of control workers exert over their pace and length of work can lead them to reduce their participation in self-care and respond slowly to HRI symptoms, if at all. Power and control in the workplace, thus, shape the choices workers make to take care

of themselves in risky conditions. In addition to stifling the exercise of self-care, the existing dynamics of workplace power and control present formidable obstacles to group organizing for action. Despite farmworkers having the legal right to act together to improve working conditions, participants did not identify this as an option when they described poor field conditions. One way to interpret the role-reversal responses we heard is as assertions of concrete thinking, modeled upon the workers' view of power and control in the workplace.

Research by Smith, Wigboldus, and Dijksterhuis (2008) found a relationship between abstract thought and worker power, as well as a concrete-thought and control relationship. Their research shows that a bidirectional relationship between power and abstract thinking may maintain hierarchies within the workplace. If it is possible for workers in low-power positions to feel more powerful, it is more likely that they will be able to change the existing power structure. They conclude that simply taking a more abstract perspective may be the first step in helping the powerless challenge the powerful. Other research supports this claim (Wakslak, Smith, and Han 2014), while another body of literature describes the narrowing affect that more automatic thinking can have on the set of possibilities for an individual action (Kahneman 2000; World Bank 2015).

Focus group participants shared most of their thoughts in concrete terms. Based on the results of the research cited above, we asked workers to think about altering forms of power relationships through engagement in abstract thought in role-reversal exercises (Johnson 1971). An initial analysis of employer interviews showed evidence that abstract thought, and the use of abstractions, increased the sense of power employers exert over their workers. Focus group statements and employer interviews showed that employers prioritize training that relies upon the reproduction of concrete thinking and, as a result, more concrete action by workers (e.g., be sure to drink, take breaks when you need them).

Health

Considering the preceding discussion of pay and power, it is easier to grasp the ways in which these structures in agriculture shape the repertoire of self-care choices for individual workers. The dynamics of workplace power and control stifle individual worker choice about self-care. Research by Theorell (2003) shows a relationship between increased levels of worker control and improvements and the overall health of the worker. The pay structure (piece or hourly), the organization of the field, the range of control, and a personal sense of fortitude are all factors that shape self-care decisions. This finding helps explain the puzzle of reluctant self-care motivation identified in Lam et al. (2013).

Our explorations of the meanings of a good worker, a good boss, and a good friend help reveal that relationships matter in interrupting or reproducing notions of fortitude and encouraging self-care (Boonstra and Bennebroek Gravenhorst 1998). The sense of personal fortitude can retreat to the background when thinking of good friends (let us take a break together) or come to the fore in descriptions of good workers (keep the

pace, compete, do not stop). The direction, degree, and tenor of relationships to other workers can either affirm or undercut self-care behaviors. This finding elaborates upon theoretical models developed in Courville, Wadsworth, and Schenker (2016), which posit that self-care decisions are shaped, in part, by the behaviors and perceptions held by other workers.

Through multivariate analyses, Karlsen and Nazroo (2002) showed strong independent relationships between health and experiences of racism, perceived racial discrimination, and class. Their work posited that ethnicity represents both a position in a social structure and an internalized identity that is a consequence of agency.

Our research provides examples supporting this theory. Employers stated that workers, being Mexican, did not need air conditioning, were not used to it, and, thus, were okay working in the heat. This in essence places workers in a different category than employers. And workers themselves expressed their internalized identities as workers—wanting to be seen as “good” through various traits. This finding supports previous research that states that farmworkers are seen as “different” with ethnic characteristics that make them suitable for the kind of work they do (S. M. Holmes 2013).

Conclusion

The data presented in this paper provide a profile of worker and employer relations that orbit around worker control as perceived by both the worker and the employer. By leveraging subjective worker views about their own sense of fortitude, employers bolster a preference among workers for pay structures (piece rate) that diminish production losses while increasing worker risk taking. This finding harmonizes with S. M. Holmes (2013) and Thomas (1985), asserting the interplay of worker identity and workplace practices to explain the persistence of workplace inequalities and worker risk taking related to health outcomes.

Not only does the structure of piece rate pay itself undercut efforts to keep workers safe, but it reinforces workers’ misconceptions and beliefs about their bodies and health, in ways that benefit the employer. Notions of worker control discourage workers from engaging in self-care or taking timely action to address HRI symptoms. The incentive to demonstrate fortitude in the workplace even when suffering from early symptoms of HRI is best understood as both a coping mechanism and a response to the structure of pay in the sector. The risk with this compensatory strategy for workers is that it can ultimately take a person out of the earnings game altogether, if health and safety are compromised in the process.

The way current California state regulations are written for outdoor workers, employers must provide water and shade and allow workers to take breaks when needed to recover from heat. Employers state that they give their workers the power to take care of themselves. But there is some distrust among workers regarding employer actions around HRI mitigation. Workers view admonitions to drink water and rest in shade as part of a managerial repertoire of directives and oversight schemes around productivity. Reminders and prompts to engage in self-care may be helpful for some, but they are not viewed as an effort to transmit knowledge or

information in order to advance or promote learning, personal development, or safety, nor were they seen as a manifestation of caring. In addition, workers were more comfortable bringing their own water with them, expressing distrust of sources of employer-provided water.

The relationship between agency and structure in agriculture is complex. How workers decide to care for themselves in a highly prescriptive environment depends on a complex calculus. While both workers and employers assign agency to workers to make decisions and take control in the workplace, the choices workers make rely on an industry structured to thrive on an essentially powerless underclass. The solution to the HRI conundrum in agriculture is not clear, but indications from this work suggest that ending piece rate pay and training workers about their rights rather than in the current concrete manner might be steps along the way to reducing HRI in California farm fields.

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Notes

1. See Mines, Ward, and Schenker (2000), for a good discussion of the challenges related to farmworker enumeration.
2. Workers in these groups referred to piece rate pay as “by contract.”
3. Both of these actions, providing water and encouraging workers to drink are legal requirements under California law.
4. However, in 2016, a new law was enacted in California to compensate workers for breaks even when getting paid by the piece (Piece Rate Pay Compensation Labor Code 226.2), changing that dynamic.

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