How Older Workers With Coronary Heart Disease Perceive the Health Effects of Work

by Victoria Vaughan Dickson, PhD, CRNP

RESEARCH ABSTRACT

More than 3.4 million workers have coronary heart disease (CHD) with significant work limitations and disability. Although the cohort of aging workers with CHD is growing, little is known about how older workers with CHD perceive the relationship between the work environment, including job stress, and their health. The purpose of this qualitative, descriptive study was to explore the perceptions of the health effects of work among older workers with CHD and describe how they cope with work stress. The sample was 47% female and 33% African American. Their mean age was 59.21 (± 5.4) years, and most (55%) worked in professional or managerial jobs. Themes emerged about perceptions of the health effects of work and coping strategies. Because older employees are a vulnerable work group, understanding the perceived health effects of work may guide future workplace program development and policy. [*Workplace Health Saf* 2013;61(11):486-494.]

According to the American Heart Association (Go et al., 2013), 1 in 3 adults has heart disease. It is estimated that more than 3.4 million workers have coronary heart disease (CHD) (National Center for Health Statistics [NCHS], 2001) with significant work limitations and disability. In addition, 34% of employed adults have two or more risk factors for CHD (Go et al., 2013). Evidence suggests that stress, including work stress, has deleterious effects on cardiovascular health. Work stress may contribute to CHD through both physiological (Belkic, 2000; Emeny et al., 2013) and psychological (de Jonge, Bosma, Peter, & Siegrist, 2000; Wieclaw et al., 2008) pathways. Depression, limited coping ability, and negative personality affect (i.e., aversive mood states such as nervousness, fear, anger, contempt, disgust) (Watson, 1988), all responses to job demands, are hypothesized to contribute to stress and CHD (Landsbergis et al., 2000, 2013). According to Ettner and Grzywacz (2001), work and health are interconnected; both employee attributes and the employment context influence worker well-being. Because perceived health is an important indicator of health status (Idler, 1994), workers' perceptions of the effect of their jobs on health may reflect the "true" effects. Although the cohort of aging workers with CHD is growing, little is known about how older workers with CHD perceive the relationship of work stress to their health. Therefore, the purpose of this qualitative, descriptive study was to explore the perceptions of the health effects of work among older workers with CHD and describe how they cope with work stress.

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The author has disclosed no potential conflicts of interest, financial or otherwise.

This study was funded by a grant from the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (5K01OH009785-02 PI: VVDickson).

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Received: March 1, 2013; Accepted: October 7, 2013.

BACKGROUND

The population of older employees is one of the fastest growing segments of America's work force (Toossi, 2009). As the work force ages, CHD poses new occupational health challenges for millions of workers and their employers. After age 40, the lifetime risk of developing CHD is 49% for men and 32% for women (Lloyd-Jones et al., 2009). Workers with CHD often report significant work limitations due to decreased physical capacity or noxious symptoms. Workers in safety-sensitive positions also face an increased risk for workplace accidents due to CHD symptoms (e.g., dizziness may contribute to falls). The employment outlook for workers with CHD is grim. Within 6 years after a recognized heart attack, about 22% of men and 46% of women will be disabled (Go et al., 2013). Presumably, disability from work is attributed to deteriorating cardiac function that limits workers' abilities to perform essential job functions.

According to the National Institute for Occupational Safety and Health (NIOSH), major economic shifts, advances in technology, and legal and political forces have resulted in a shift in the way work is performed, described as a new organization of work. Work organization is defined as the work process (the way jobs are designed) and the organizational practices (management, production methods, and human resources) and policies that influence job design (Landsbergis et al., 2000). The general consensus among experts is that these new work organization trends are associated with increased stress, potentially hazardous work situations, reduced job stability, longer work hours, and increased workloads (NIOSH, 2008). For the 7% of aging workers with CHD (Go et al., 2013; NCHS, 2001), work organization trends that result in increased job stress may have deleterious health effects via both physiological and psychological mechanisms. A decline in health status that is influenced by worsening cardiac disease as well as an individual's perceptions of the health effects of work may lead to the inability to perform job functions and contribute to work disability.

THEORETICAL MODEL

According to the social ecological theory of health promotion (Stokols, 1992), human health is influenced by the interrelationship of the environment and its multiple physical, social, and cultural dimensions over time and numerous personal attributes, including an individual's genetics, psychological disposition (e.g., personality), and behavior patterns. The social ecological framework emphasizes the interdependence of environments, including their physical (e.g., temperature, lighting, air quality) and social (e.g., social support) facets, across multiple settings. These interrelationships are characterized by interactive and cyclic patterns whereby the physical and social aspects of a setting, or environment, influence individuals' health (e.g., work stress). Similarly, individuals' actions affect the setting through their own behavior patterns (e.g., personal and interpersonal behaviors that promote a healthier environment). In this way, the interaction of health and environment is situational. That is, the same environmental conditions may affect individuals' health differently depending on the circumstances.

According to Stokols (1992), these health-environment effects depend on a "dynamic interplay" of individual attributes, including personality, perceptions of environmental control and health behaviors (e.g., level of physical activity, alcohol or substance abuse), and financial resources. Compatibility between individuals and their environment is essential for both physical and mental well-being. Incompatibility, therefore, can result in impaired health, or perceived negative health. Occupational settings and work environments, according to the social ecological theory of health promotion, are common domains of human activity (Stokols, 1996). Hence, the physical, social, and cultural dimensions of work as an environment interact with individual attributes, including personality, coping, and perceived control, to impact worker health. Therefore, the perceived health effects of the work environment may be explored through the lens of the social ecological theory of health promotion.

Ettner and Grzywacz (2001), guided by the social ecological perspective, examined the association between physical and mental health and job characteristics. They hypothesized that certain job features, including increased occupational stress, both physical and psychological demands, adverse environmental conditions, and long hours, would be correlated with negative perceptions of the effects of work on health. A second hypothesis was that workers with greater job control, decision latitude, and status (and remuneration) would report more positive perceptions of the health–work relationship. Results from a large sample of adult workers (N = 2,048) indicated that both individual and job characteristics were significant correlates of worker perceptions of health effects of work. Workers who reported negative health effects of work were more likely to work long hours and the night shift, have greater physical work demands, and report higher job stress. The negative health effects of work were also correlated with worker personality char-

Applying Research to Practice

The perceptions of older workers with coronary heart disease concerning the health effects of work are influenced by both work environmental and individual (e.g., individual coping style) attributes. Interventions to promote the health of this vulnerable population should address aspects of the work environment that are detrimental to perceived health as well as individualized coaching. Individual and workplace strengths, including coping style and workplace support, can be leveraged to effect positive work-health.

acteristics (e.g., extraversion, neuroticism). Interestingly, older workers and minorities reported more positive perceptions. Greater decision latitude and use of appropriate job skills as well as self-employment, which presumably is a proxy for job control, were also correlated with positive health perceptions. These findings suggest that work environment, in addition to individual personality characteristics, contributes to perceived health effects of work. Ettner and Grzywacz (2001) argue that because work and health are interconnected, a basic tenet of the social ecological theory of health promotion, the results of their study have program and policy implications for improving working conditions.

Other researchers have examined the association between job characteristics, including job demands (Cohidon, Morisseau, Derriennic, Goldberg, & Imbernon, 2009; Jamison, Wallace, & Jamison, 2004; Laaksonen, Rahkonen, Martikainen, & Lahelma, 2006; Silva & Barreto, 2012), work stress (Oxenstierna et al., 2011; Wege et al., 2008), workplace support (Rydstedt, Head, Stansfeld, & Woodley-Jones, 2012), and work hours (Nakata, 2012), and self-reported health across a range of occupations. Generally, exposure to negative job characteristics has been associated with poorer self-reported health status, including physical and mental well-being. Individual attributes that have been factored into the relationship between work stress and self-reported health include coping styles (Snow, Swan, Raghavan, Connell, & Klein, 2003), health behaviors (Payne, Jones, & Harris, 2012), personality, and negative affect (Young & Corsun, 2009).

Coping, which is considered an individual attribute according to the social ecological theory of health promotion, is an individual's cognitive and behavioral efforts to manage stress, albeit to reduce, minimize, or tolerate stress (Lazarus & Folkman, 1984). The cognitive process of evaluating a situation may involve rethinking and accepting the situation or seeking more information or social support. Behavioral efforts seek to attempt to resolve or change the stress-evoking situation. Individual attributes that affect the process of coping include prior experiences, attitudes, and self-esteem (Lazarus & Folkman, 1984; Olsson, Kandolin, & Kauppinen-Toropainen, 1990). Two categories of coping that predominate in the literature, especially occupational health, are problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1984). Studies have examined the relationship between coping strategies and work stress and report that certain coping styles have a protective effect on health in the presence of negative work situations. For example, Olsson et al. (1990) described differences in shift workers' coping styles related to individual characteristics, primarily self-esteem. Individuals with high self-esteem used active problem-focused coping that was associated with lower levels of stress. In a study of coping styles and burnout (considered an outcome of chronic work stress), control coping, an active problem-focused coping strategy, was associated with decreased burnout compared to escapist or passive coping (Leiter, 1991). Snow et al. (2003) reported that coping style was a mediator in the association between workplace stressors and psychological symptoms (i.e., depression, anxiety, and somatic complaints).

The collective body of research that has examined individual attributes such as coping styles, personality, and sociodemographic factors supports the utility of the social ecological theory of health promotion to explore the interrelationship of work and health. However, the perceived effects of work on health among older workers with CHD has not been explored. Therefore, guided by the social ecological theory of health promotion (Stokols, 1992, 1996), the purpose of this qualitative study was to explore the perceptions of the health effects of work in a sample of older workers with CHD and describe how these workers cope with work stress.

METHODS

This qualitative, descriptive study was part of a longitudinal, prospective, mixed methods research study conducted in the United States examining self-care behaviors, including adherence to treatment regimens and symptom management, of older workers with CHD. Qualitative data were collected using a semi-structured interview guide (Johnson & Turner, 2003) to elicit in-depth narrative accounts of health status, work organization, coping, and perceived health effects of work. All participants received a non-coercive $20 gift card for participating in the interview. In accordance with the Declaration of Helsinki, appropriate institutional review board approval was obtained from the institutional human research ethics committees prior to participant recruitment.

Sample and Setting

A purposive sample (n = 30) was recruited to participate in the qualitative data collection. Maximum variation sampling (Creswell & Plano Clark, 2006) was used to ensure that cases emerged that provided the maximum heterogeneity on specific attributes (e.g., age, ethnicity, CHD diagnosis, and occupation) that could affect the variables of interest in this study exploring the perceived health effects of work. Participants were enrolled from outpatient medical, cardiology, and occupational health settings associated with five health care systems in the northeast and through ResearchMatch.org, a free and secure registry that has been developed by major academic institutions across the United States to identify and link potential volunteers with researchers. Individuals were eligible to participate in the study if they met all of the following criteria: (1) CHD diagnosis confirmed by health care provider based on clinical evidence meeting criteria of ICD-9 coding (ischemic heart disease 410.*–414.*, heart failure 428.*, and/or cardiomyopathy 425.*); (2) age older than 50 years (Bureau of Labor Statistics, 2008); and (3) working at the time of study enrollment and employed at least 35 hours per week, which meets the definition of full-time employment (Bureau of Labor Statistics, 2005). Those with another serious chronic illness or demanding treatment regimen that precluded participation in a

longitudinal study were excluded. Individuals who were self-employed were excluded because many of the work organization variables would not be applicable. Workers in jobs associated with construction, agriculture, forestry, fishing, or mining were also excluded from the study because it was determined that few workers in these sectors would be available for recruitment.

Data Collection and Analysis

An interview guide based on the theoretical framework (Lipshitz, Klein, Orasanu, & Salas, 2001) guiding the principal study examining self-care in a working population with CHD was used to focus the interview while allowing participants to speak freely and distinguish essential aspects of their narratives. The interview format consisted of a series of open-ended questions (e.g., "Tell me about your heart disease" and "Tell me about a typical workday") followed by more direct probes (e.g., "How does work affect your health . . . ?" and "How do you handle <work situation>?") that elicited in-depth narratives of health perceptions and the use of coping strategies within the context of heart disease and work. All interviews were recorded and transcribed verbatim. Accuracy of transcription was confirmed by reviewing the first three interviews and noting 100% accuracy in transcription. Field notes supplemented the recorded interviews.

More than 500 pages of qualitative interview data were analyzed using Atlas.ti, version 6.0, a software package developed to support qualitative data analysis. Preliminary analysis of interview transcripts entailed a line-by-line review that yielded clusters of data labeled into brief headings. Codes derived from these data were linked to interview questions and resulted in coding categories that, at the early stage of analysis, were fairly general, descriptive, and consistent with the study aims. As new codes emerged through the analysis process, coding categories were revised. Then coding categories were summarized across cases and subsequently cross-classified to yield a rich descriptive analysis. Finally, emerging themes both within and across coding categories were identified and the review of the fit with descriptive data was verified. Methodological rigor was maintained through an audit trail and member checking of results with participants that clarified meaning and supported interpretation of qualitative data prior to final analysis (Connelly & Yoder, 2000).

RESULTS

The sample was 47% female and 33% African American. Their mean age was 59.21 years (*SD* = 5.4; range = 50 to 72), and most (55%) worked in professional or managerial jobs (Table 1). The narrative accounts of these older workers with CHD revealed three themes (Table 2). First, the perceived health effects of work varied from negative effects ("this job is killing me") to work as an essential contributor to overall well-being. A 58-year-old woman described the positive effects of work on both physical and mental well-being: ". . . work is important to me both mentally and physically. I wanted to get back to work after my heart attack so I think I worked twice as hard in cardiac rehab and working keeps me active . . . physically but also mentally . . . I don't ever want my mind to go to mush, which I think it did right after <heart attack>." Five participants described ambivalence, or a neutral relationship between work and health. These individuals reported a long history of CHD. For example, a 55-year-old man with a history of congenital heart disease said, "It's all I know, for me it's normal . . .". A 68-year-old man with stable heart disease for the past 25 years described adaptation to a "new normal": "If you had asked me that <question> 20 years ago, I might have had a different answer, but it's <heart disease> just part of my life now . . . I guess you could say it's what's normal now . . . I adjusted a long time ago . . .".

Adjustment was a significant theme in how older workers described their perceptions of the health effects of work. For those who were able to make accommodations either formally ("I have more flexibility now") or informally ("I figured out a way on my own that works better . . .") to job demands, either psychological or physical, the health effects of work were not perceived as negative. Conversely, for those who were unable to adjust to job demands or lacked support in the form of accommodations (". . . I have asked and asked <for 1 day a week to work at home> . . . but no . . ."), the perceptions of the health effects of work were described as detrimental or even life-threatening. In stressful situations,

Table 1

Participant Characteristics

Characteristic	N	%
Gender		
Male	16	53.33
Female	14	46.67
Marital status		
Single	11	36.66
Married	14	46.67
Widowed/divorced	5	16.67
Race		
White	17	56.67
Black	10	33.33
Hispanic	2	6.67
Asian	1	3.33
Workplace sector		
Healthcare & Social Assistance	5	16.67
Service	14	46.67
Manufacturing	4	13.33
Transportation	4	13.33
Wholesale/Retail Trade	3	10.00

Table 2

Qualitative Data Themes

Theme	*Example*
Perceived health effects of work vary: detrimental to health, ambivalence, or essential to overall well-being	Negative: "This job is killing me"
	Ambivalence: "It's my normal"
	Positive: "It is central to my identity"
Ability to make adjustments contributes to perceptions of health effects of work	Formal accommodations: "I have an office set up at home and I work there 2 days a week so I don't get as tired . . ."
	Informal accommodations: ". . . my supervisor is willing to be flexible so I can do what I need to do . . ."
	Lack of support: ". . . I have asked and asked . . . but they say no . . . it's taking a toll"
Coping strategies emerge from individuals' experience with coronary heart disease and work characteristics	Active coping: ". . . I have learned to be proactive . . . I take a walk, practice deep breathing . . ."
	Avoidance coping: "I just ignore it . . . only a few more years that I have to ignore it . . ."

these participants often described physiological manifestations and psychological stress, including palpitations, chest heaviness, and fatigue. One 59-year-old woman who listed her job responsibilities as including managing multiple "competing" projects and meeting "impossible" deadlines, reported that at the end of a typical day she felt "overwhelming exhausted" and was "waiting for the next heart attack."

Another prevalent theme that emerged from the qualitative data was that the coping strategies used by older workers to manage stress varied but seemed to emerge from individuals' experiences with CHD and work characteristics. Both active coping, rethinking anticipated stressful situations and putting them within a larger context (often the life-threatening experience of their CHD), and avoidance coping, "just ignore it," to manage work stress were described in the narratives. As a result of active coping, individuals were able to avert or reduce an anticipated stressful response. For example, one individual described how she coped with difficult coworkers: "I decided that I am not going to let <situation> bother me . . . it is not the end of the world I would have thought it was before my heart attack." Others used active stress management techniques, including meditation, rest breaks, and social supports, at work and outside of work to actively manage stress responses (i.e., cope). However, nearly half described avoidance coping that did not include cognitive restructuring. When asked about stress management tactics typically included in patient education, these individuals reported they either had not been used or had not been effective. One man described trying to actively cope with work stress as a manager: "I tried that . . . it doesn't work . . . so now I just ignore it and wait to retire . . .". Indeed, avoidance coping often included an anticipated exit from the work force through retirement (". . . almost there . . . 2 more years . . .").

Finally, individuals' perceptions of coping effectiveness seemed linked to perceptions of job control, supervisor relationships, and ultimately job security. Clearly, those in the sample who described autonomy ("I am the boss"), strong employer support ("the company cares"), and job security evaluated their ability to cope with stress as effective. Others who were concerned about job security ("I don't want them to think because I have heart problems, I can't do the job . . .") struggled in their efforts to cope with stressful situations at work. For example, when asked, "How do you manage stress at work?" one woman who expressed concern about job security said, "I don't . . . it's hard . . . since I got back <to work> I feel like there is a target on my back . . . and it's getting bigger."

Interestingly, about half the sample described positive, proactive changes in managing stress consistent with active coping compared to their coping styles before their cardiac event. That is, they described a change to actively managing their personal stress response to anticipated conflict, whereas "before . . . blood pressure rising . . . working long hours . . . getting all stressed out." Only three individuals described less effective coping abilities. In these cases, the physiological effects of heart disease, such as decreased concentration and fatigue, interfered with their ability to manage work stress or cope effectively.

DISCUSSION

This study provided unique insight into the perceptions of the health effects of work among older workers with CHD. These results suggest that older workers' perceptions of the health effects of work are influenced

by both the work environment and individual attributes (e.g., coping style). In addition, older workers' perceptions of job security emerged as vulnerability related to CHD; job security as well as perception of workplace support contribute to the perceived health effects of work.

These findings contribute to the research examining work and health and inform a critical gap in the literature regarding older workers with CHD. Consistent with current research (Ettner & Grzywacz, 2001; Laaksonen et al., 2006; Rydstedt et al., 2012), participants in this sample qualitatively described negative perceptions of the health effects of work. Specifically, increased work stress was reported as contributing to poor health. This sample, although small, was recruited from a variety of occupations and work sectors, whereas the current literature has focused on targeted work groups such as municipal workers, health care workers, and employees in the financial sector. For example, Laaksonen et al. (2006) studied municipal workers and examined the association of job demands, job control, organizational fairness, and physical work demands with self-rated mental and physical health. In that large study of middle-aged workers (N = 5,829), a strong association between work factors (e.g., job demands, job control) and self-rated health as well as a significant association between organizational fairness and self-rated general and mental health was found. The latter finding is consistent with the qualitative findings of this study that some individuals who perceived negative health effects of work also described an inability to make work adjustments or receive accommodations as an organizational constraint and suffered as a result.

In general, the results of this study support the applicability of the social ecological theory of health promotion (Stokols, 1992) to examine perceptions of health and work of older workers with CHD. To date, much of the literature that has used this theoretical approach has been quantitative. No studies were found that examined an older population with chronic disease, as in this study. The results of this qualitative study add to the body of research, given the qualitative data about work and perceived health effects, by reinforcing the relationship between the work environment and worker health in this unique population. First, it was apparent from the narratives that the work environments of older workers with CHD, regardless of work sector, were multidimensional and complex, consisting of physical, social, and cultural components. Individuals discussed physical job functions (e.g., "walk a lot," "not much heavy lifting") but emphasized the complexity of work as a social process (e.g., "getting along is important . . . there are different personalities that can be stressful . . .") and related the culture of work (e.g., ". . . very supportive from the top down . . .") as influential in how they perceived the health effects of work. Further, the relationship of worker and work environment was dynamic and situational. This interactiveness was described by participants in the sample as variable in perceptions and responses to work characteristics based on the individual's health, work situation, and contribution of others in the environment (workplace support). The social ecological theory of health promotion also emphasizes multiple levels of behavior, which was reflected in the interviews as individual behavior, peer-to-peer and workgroup interactions, and corporate culture. Themes from the qualitative data were consistent with the premises of the social ecological theory of health promotion—the work environment can operate as a stressor, exerting perceived detrimental effects on worker physical and mental health. The qualitative results may enhance the theory by suggesting that when synergy between environment and individual attributes is found, the perceived health effects of work are positive and may even enhance the health of workers with CHD.

Study findings regarding coping styles in this sample support the effect of individual attributes in the social ecological theory of health promotion as well as the extant literature on coping and work stress among older workers (Hansson, Robson, & Limas, 2001). Almost half of this sample reported a coping style consistent with avoidance coping as defined by Snow et al. (2003). Although generally considered a less effective strategy to manage stress, avoidance coping in this sample was described as "not thinking about it" or "ignoring it" and deemed successful because symptoms were averted. The avoidance coping strategy was also reflected in narratives of those anticipating retirement.

In contrast, others used active coping to recontextualize a stressful situation and thereby minimize or avoid a stressful response. These results are consistent with the current literature on coping among older workers, who are more likely to effectively use cognitive strategies to regulate emotional responses to stress (Hansson et al., 2001). A process of reappraisal is used to find balance between the cost of the stress and the benefit. As a result of aging, older workers in general may cope with types of stressors different from those of younger workers and therefore use a coping style that regulates emotions. Consistent with this literature, the narratives by those in this sample who employed active coping also described regulating emotional responses to avert unpleasant physiological responses and considering the "costs" of invoking a stress response.

Although the analysis of these qualitative data was guided by the social ecological theory of health promotion, the themes were also consistent with the Job Demand-Control model (Karasek & Theorell, 1990). According to the Job Demand-Control model, job strain is predictive of a variety of stress-related risk disorders related to physiological and behavioral responses to stress (de Jonge et al., 2000; Hellerstedt & Jeffery, 1997). Karasek's model also includes coworker and supervisor support in a moderating role. The results of this qualitative study support the key constructs of the Job Demand-Control model in that individuals described the health effects of work, mostly psychological job demands, as negatively affecting health unless both coworkers and supervisors provided adequate workplace support. Integral to this phenomenon was the individual's perceived job control. Among those workers

in positions with decision latitude, the negative effects of work were lessened. Work was then perceived as beneficial to overall health.

These results illuminate the importance of perceptions of negative health effects for worker health, especially among workers with CHD, and provide insight into how work affects health (Ettner & Grzywacz, 2001). The qualitative descriptions of negative health effects in this sample of older workers with CHD included physiological responses of fatigue, chest pain, palpitations, and mood alterations. Work-related stress biomarkers, both immunological and neuroendocrine markers such as salivary IgA and cortisol, are gaining attention in occupational health research. Increased levels of stress biomarkers have been correlated with self-reported work stress in studies of nurses practicing in high-stress environments (Fujimaru et al., 2012). Among workers with CHD, psychological stress increases sympathetic activity that can have deleterious effects on cardiac function by increasing heart rate, vasoconstriction, and blood pressure. Interestingly, some coping styles may serve as mediators between stress and health (O'Donnell, Badrick, Kumari, & Steptoe, 2008).

Finally, some of the participants in this study described higher levels of functioning at work that they perceived as "better" than prior to the onset of their cardiac disease. This finding at first seemed counterintuitive because CHD is one of the leading causes of work disability. However, the ability of these older workers to successfully transition back to work and even thrive at work has been described in the literature as agentic work behaviors (i.e., being active and productive) that promote vitality and health (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). When individuals are active and purposeful at work, having the ability to interact with others and ideas meaningfully, they can experience vitality and ongoing learning that serves as reinforcement. Outcomes for individuals thriving at work include personal development and health, according to the conceptual model of thriving at work (Spreitzer et al., 2005). Similarly, study data revealed that some individuals who found importance and meaning in work also reported "feeling better than ever."

LIMITATIONS

This study had several limitations. First, as a qualitative study with a small sample size, the results cannot be generalized. Second, the interviews did not elicit narratives that revealed individual attributes such as personality, neuroticism, or genetics that have been identified in the social ecological theory of health promotion. However, the rich qualitative data generated by maximum variation sampling provided insight into the perceptions of health effects of work in a heterogeneous sample of older workers. The diversity of the sample is a significant strength because much of the existing research examining CHD in older workers is limited to White male samples (Dickson, 2013). Future research should include quantitative measures to assess individual attributes and a larger sample. It is also important to explore these findings in work sectors not represented in this study (e.g., agriculture, forestry, mining).

IMPLICATIONS FOR PRACTICE

The findings of this qualitative study have several implications for occupational health nursing practice. First, assessing individuals' perceptions of the health effects of work may define the health needs of workers, guide care including disability management efforts, or identify accommodation needs. As discussed in this study, perceptions of the health effects of work are influenced by both the work environment and individual attributes. Identifying the components of the work environment that are perceived to be detrimental to health may guide individual counseling as well as illuminate work exposures to address formally. For older workers with CHD, stress management counseling delivered by occupational health nurses should include an assessment of coping style, specifically preference for active or avoidance coping. Coping style preference can be assessed by asking workers to describe how they handle difficult situations at work. Coaching strategies should focus on both managing stressful situations and regulating emotional responses to stress so older workers with CHD can avoid the physiological consequences of stress while improving coping strategies. In addition, because older workers with CHD value the support of coworkers and supervisors, workplace programs that foster coworker support may be beneficial.

Finally, clinicians must recognize that for many older workers with CHD, remaining active and productive is essential to their perceived health. Many older workers with CHD want to remain productive, so health care workers should assess employment status and future work plans when developing a plan of care after a cardiovascular event. Workers with CHD may benefit from transitional work arrangements or more structured accommodations to optimize recovery. Facilitating return to work should be a collaboration between primary care providers and occupational health nurses.

CONCLUSION

Older employees with CHD are considered a vulnerable working population (NIOSH, 2002). Efforts to improve health and reduce disability in this growing population are a research priority. According to the social ecological theory of health promotion, the relationship between work and health is complex, dynamic, and situational. Study results underscore the need to better understand the perceived health effects of work among older workers with CHD and suggest that some aspects of the work environment should be addressed through interventions as well as policy to promote health. Further, these data highlight the individual and environmental strengths that can be leveraged to support positive work-health effects.

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