NEW SOLUTIONS, Vol. 20(4) 479-495, 2010

GENDER, AGING, AND WORK: AGING WORKERS' STRATEGIES TO CONFRONT THE DEMANDS OF PRODUCTION IN MAQUILADORA PLANTS IN NOGALES, MEXICO

GÉNERO, ENVEJECIMIENTO Y TRABAJO: ESTRATEGIAS DE TRABAJADORES ENVEJECIDOS PARA AFRONTAR LAS DEMANDAS DE LA PRODUCCIÓN EN LAS PLANTAS DE LA MAQUILADORA DE NOGALES, MÉXICO

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ABSTRACT

This work is part of a qualitative socio-cultural investigation with a group of men and women 40 years and older in the maquila export industry in Nogales, Sonora, Mexico. In 1994, as a result of the North American Free Trade Agreement, maquila plants combined traditional intensive work methods with new "just in time" production norms that impacted work and health conditions, particularly in older, or aging, workers. The workers that were interviewed for this study show a reduction in their functional ability to work starting at 40 years of age. Work organization demands, general health conditions, and a decrease in physical abilities brings these 40-year-old workers to prematurely construct an image of themselves as *aging workers* and to develop coping strategies that vary by gender.

doi: 10.2190/NS.20.4.f
http://baywood.com

RESUMEN

El presente trabajo es parte de una investigación sociocultural con hombres y mujeres mayores de 40 años en la industria maquiladora de exportación en Nogales, Sonora, México. En 1994, a raíz de la firma del Tratado del Libre Comercio de América del Norte, las plantas maquiladoras combinaron los métodos intensivos de trabajo tradicional con las nuevas normas de producción "justo a tiempo," impactando las condiciones de trabajo y de salud, particularmente en la fuerza de trabajo envejecida. Las trabajadoras y trabajadores que fueron entrevistados en esta investigación muestran una disminución de su capacidad funcional para trabajar desde los 40 años de edad. Las exigencias de la organización del trabajo, las condiciones generales de salud, y la disminución de las capacidades físicas, generan que estas personas construyan prematuramente, desde los 40 años de edad, una imagen de sí mismos como *trabajadores envejecidos* y obliga a que ellos desarrollen estrategias de afrontamiento, las cuales son diferentes entre hombres y mujeres.

This study looks at the gender differences relating to the aging of workers in the maquila plants in Nogales. It is based on a study of their experience of aging, work, and health [1], which was designed to analyze the experience of the aging of a generation of pioneer maquila workers whose work activity took place over a period of four decades, from 1965 to 2007, in this city on the northern Mexican border. The study took the individual work life of the research participants as its point of entry for examining three stages of the maquila industry: 1965–1982, 1982–1994, and 1994–2007. These three periods were used as a social time reference for analyzing the changes in the productive processes in this sector.

The maquila export industry—hereafter referred to as IME[1]—began its work in Nogales and in other northern border cities in the period 1965-1982. The technology used for production was simple, with manual assembly routines, a low-skilled workforce, low relative salaries, and intense work schedules [3, 4]. There were constant layoffs, productive restructurings, and closures.

In the next period, between 1982 and 1994, workforce changes such as teamwork were introduced. Manual assembly work continued, supported by automation technology, higher quality control, and training.

[1] Time has been defined from various angles with respect to the IME (Industria Maquiladora de Exportación). Mercier focuses on the legal dimension: "The legal framework for the maquila has been evolving over the years. Thus the Decreto para el Fomento y Operación de la Industria Maquiladora de Exportación (Law for the Promotion and Operation of the Export Maquila Industry) of June 1st, 1998 and the reform of November 13, 1998 define the maquila as the industrial or service process that involves the transformation, manufacturing or repair of merchandise of foreign origin, imported permanently or temporarily for its posterior export. It also includes service activities involved in the export or support of such merchandise" [2].

The border region received a new and important economic stimulus as a result of the signing of the North American Free Trade Agreement or NAFTA (Tratado de Libre Comercio de América del Norte, or TLCAN), which brought new and increased investment into Mexico, accelerating production and trade. Between 1994 and 2002, direct foreign investment to the maquila sector increased from $895 million to $2.044 billion [5].

Finally, from 1994 to 2007, flexible production processes were combined with simple assembly work for low-skilled workers, although training was provided in technical areas of engineering and mid-level management. Total quality control became a prerequisite for remaining competitive. Restructurings of position profiles took place, and various activities were changed due to the changes in technology and work organization, while workers were trained for the new requirements of the productive process.

INTRODUCTION

This research is based on a socio-cultural approach centered on the work life of people who have been working in the maquila industry for long periods of time, but who have remained invisible from academic studies about workplace conditions in Mexico, largely due to the perception that only young people worked in the IME. Older workers have been ignored, as have questions relating to their aging process and how these men and women have managed intense work demands at the time when their physical capacity was decreasing over the years of working in this industrial sector.

A large part of the theoretical analysis of the maquila industry has concentrated on the economic impact it has had on the country due to its job-generating capacity [6-8]. Other research has focused on the risky conditions in this sector [9], the exposure to physical, chemical, and ergonomic factors [10], the sexual and reproductive health care practices among female workers [11], and the stress-generating factors [12].

One of the findings of our research has been that people working in this sector start at 40 years of age—that is, *prematurely*—to develop an image of themselves as *aging workers.* In analyzing the work processes, explanations point to the fact that this perception involves physiological aspects related to aging, but the most important influence is related to the flexible nature of their work and the requirements to remain competitive. Such requirements involve constant increases in workload, routines, and work stations that force them to remain in uncomfortable positions, long work days (10 hours or longer), and the high speed of production processes. Factors that are attributable to work become important reference points in the image that workers have about their own aging process: fatigue, the decrease in their physical capacity, and the low work performance that results from intense work demands and brings aging workers to develop strategies to deal with such work demands.

The individual and social implications of an aging workforce demand a focus on issues of aging, work, and health care. Research about workers' aging suggests that as individuals age, they undergo biological and psychological changes, such as a decline in capacity and an increase in experience [14-17]. Therefore the process of decreasing work capacity begins to show after age 30 in workers involved in physically demanding activities and in those with a longer productive work life; this tendency can become critical in the next 15 or 20 years if the work demands are not declining [15]. These reflections led Ilmarinen to consider workers who are 45 to 50 years old in intense physically demanding jobs as *aging workers*.

This study defines *prematurely aging workers* as those men and women who have worked in the maquila industry for a long time and who at age 40 face a significant decrease in their ability to meet work demands, especially as a result of the constant increase in workload of various production models. These demands make it difficult for them to perform effectively and lead them to develop coping strategies, which are different between women and men, to guarantee that they keep their jobs. Some authors [18] consider that the different events in people's lives lead women and men to face their social and personal aging process in different ways.

Coping strategies have been defined [19] as a variety of cognitive efforts designed to manage internal or external demands in a person's environment that exceed his or her resources. In relation to these coping strategies, psychosocial support is an important resource for aging workers to diminish the tension they feel as they face uncertainty about keeping their jobs [20].

The objective of this study is to examine gender differences in coping strategies among male and female workers as they respond to the demands of flexible production in the maquila industry.

METHODS

A qualitative methodology was required for this micro-social study designed to deepen the analysis of the aging process and understand the meanings that the "actors" give to the different events in their lives, such as work and health/disease [21].

The fieldwork in the city of Nogales on the Mexican northern border was done between 2006 and 2008.[2] We began by contacting 18 informants from the communities, factories, and medical services program. We identified these informants by walkthroughs in neighborhoods where workers live, at banks where pensioned workers are paid, in the oldest factories in town, and in the

[2]In 2008, once the research was concluded with workers, they were allowed to review the information in the interviews.

occupational medicine service area of *Seguro Social* (Social Security), the Mexico social welfare system. Interviewees were identified using the "snowball" technique. This method for identifying potential participants from those already participating in the study allowed us to gather a population of 44 individuals. This sample consisted of 26 workers of varying ages, including both active workers and pensioners; three directors of the oldest maquila plants in Nogales; five health professionals, such as doctors from *Seguro Social* and the Nogales Health Department; and 10 community members (see Table 1).

The information was gathered by means of exploratory, semi-structured and in-depth interviews. Exploratory interviews were conducted with community members and leaders—individuals not employed in the maquila industry—to help us become familiar with the social context and to identify maquila workers. Semi-structured interviews lasting approximately one hour were conducted with three key informant groups—workers, doctors, and directors—who granted us entry into the worker community for interviews and observation and who identified maquila workers to interview. The semi-structured interviews were used to identify thematic threads for the in-depth interviews. These interviews also identified the main health problems of maquila workers in Nogales, the most common diseases in the over-40 population and the manners of attending to them, the knowledge of how work is organized in the maquila, and individual work life trajectories.

The strategy to reach workers was complicated by the fact that there were few active workers in the targeted age range of 40-70 years, especially workers 50 and older. Since it was hard to find them in one single plant, we visited locations all over the city of Nogales: the communities where workers live, their health care centers (such as *Seguro Social*) and health care registries, the older maquila plants, and the banks where former workers cash their pension checks. Two additional factors made it difficult to identify maquila workers to interview: the maquila industry association did not provide information about the age of workers or the plants where they work; and the Health Department does not have information about maquila plant workers and unemployed workers that request health services.

Of the 44 initial contacts, 26 were maquila workers including both active and former workers, a diversity of work positions and different job categories. Since the objective was to understand the aging process in the work life of the maquila industry, individuals who may have worked in one or more plants were included. From among the 26 workers, 14 were selected for in-depth interviews about the aging experience representing various work categories, work positions, diverse ages, and diverse industry sectors (garment, medical safety equipment, electronics, and automotive). Workers were interviewed for a total of 122 interview-hours with each interview lasting approximately two hours. Table 2 provides a synthesis of the interviewees and the type of information they provided.

Table 1. Type and Number of Informants Interviewed
(n = 44)

Labor activity	Number	Gender	
		M	F
Active maquila workers (18)			
Operators	9	3	6
Line supervisors	2	1	1
Supervisors	2	2	
Messengers	1	1	
Technical workers	3	2	1
Providers of spare parts	1	1	
Retired maquila workers (8)			
Operators	7	7	
Machine workers	1	1	
Leadership personnel in assembly plants (3)			
Human resource managers	3	1	2
Health experts (5)			
Physician specializing in work-related medicine (Social Security)	1		1
Epidemiologist (Department of Health)	1		1
Physicians in assembly plants	2	2	
Family physician (Social Security)	1	1	
Community members (10)			
Professionals			
Sociologists	1		1
Journalist	1	1	
Basic education teacher	1		1
Social activists			
Coordinator for community center in working-class neighborhood	1		1
Coordinator of environmental project at a non-governmental organization	1		1
Leader of urban working-class neighborhood	1		1
Union leader	1	1	
Workers from other labor sectors			
Telephone and Social Security workers	3	3	
Total informants	44	27	17

Table 2. Thematic Areas Covered in Interviews, Nogales, 2006-2008

Type of interview and interviewees (n = 44)	Thematic areas covered				
	Social and labor context	Health/illness/ medical care	Labor history	Organization of work	Experience with aging
Semi-structured interviews with workers (26)	•	•	•	•	
Semi-structured and in-depth interviews with workers (14)	•	•	•	•	•
Semi-structured interviews with Directors of assembly plants (3)		•		•	
Semi-structured interviews with Medical personnel in health institutions (5)		•			
Exploratory interviews with Community members (10)	•				

Workers Interviewed

For the analysis of workers' experience, 26 workers between 40 and 70 years old were selected. Half of the workers have a minimal elementary level of schooling, and female workers have a higher average educational attainment (high school) than male workers. Marital status does not vary among male workers; all seven were married; in contrast, among the female workers some are married, while others are widowed, in free unions, or divorced. The shortest work history is five years, the longest 34 years.

Workers were employed an average of 19.7 years in one or more maquila plants, mainly in four industry sectors: auto parts, security tools, electronics, and garments. The social and occupational data on the 14 workers that participated in the in-depth interviews are presented in Table 3.

The in-depth interviews began with a base question that would lead to probing into the aging experience, with questions asked about work organization, work capacity, work life, and perception of aging, as well as about health, disease, medical care, and health related practices.

Data Analysis

The process to interpret and analyze the data about the aging experience included a preliminary analysis, a thematic analysis, and a contextual analysis. The first task was to transcribe the recorded interviews. The transcriptions took place immediately, which allowed for follow-up, the interpretation and detection of errors and gaps in the information, the ability to return to research participants to clear up any doubts and data omissions, and the ability to continue on the development of the selected themes. Once all data from the transcribed interviews and the field notes had been gathered, it was processed and analyzed. Interviews ceased when the thematic categories became redundant—that is, when no new categories were being identified. The thematic categories are: perception of health and disease; medical care and health-related practices; changes in work processes; work conditions; work capacity; perception of the aging process; and work life.

THE NEW ORGANIZATION OF WORK AND ITS IMPACT ON HEALTH

Since 1980 the economic global context has been marked by the implementation and consolidation of new production models which vary according to certain characteristics such as technology and concepts around work organization. The transformation of the productive model toward smaller, independent units of production, along with technological innovation and information management, allows a greater flexibility with respect to processes of production [22]. The flexible production models were introduced in the Nogales maquila

Table 3. Social and Occupational Data from In-Depth Interviews

Name of worker (pseudonym) (n = 14)	Job position	Years working in assembly plants	Year and age when the person began working in assembly plants	Companies and years working in assembly plants
Active workers (10)				
Betina	Operator	5	2002 (37 yrs)	Amphenol Optimize México (2002-2007)
Lourdes	Operator	25	1980 (22 yrs)	Permamex (1980-1982), Productos de control (1982-1983), Chamberlain (1983-1987), Molex (1988-2007)
Marís Antonieta	Technical worker	34	1970 (18 yrs)	Packard Bell (1970-1973), Motorola (1974-1976 y 1979-2006)
Aurora	Operator	29	1976 (34 yrs)	Productos de Control (1976-1977), Molex (1979-2007)
Alba	Line supervisor	20	1980 (17 yrs)	General Instrument (1980-1996), Ensambladora Internacional (1999-2003)
Marcos	Messenger	22	1983 (17 yrs)	Sam-Son (1983-1989), Walbro (1989-1994), General Instrument (1995-2000), Master Lock (2000-2006)
Ernesto	Line supervisor	10	1983 (23 yrs)	Ensambladora Internacional (1983-1985), Newell Window Furnishing de México/Javid de México (1999-2007)
Pablo	Supervisor	32	1975 (18 yrs)	Memex (1975-1989), Sumex (1989-2006), Planta de reciclado de cartuchos (2008)
Silvestre	Operator	8	1969 (18 yrs)	Motorola (1969-1972), Memex (1974-1975), Productos de control (1976-1977), Servipower (2005-2006), Manpower (2006-2007)
Renato	Head of spare parts	28	1979 (36 yrs)	Molex (1979-2007)
Retired workers (4)				
Diana	Operator	14	1997 (49 yrs)	Productos de Control (1976-1979), Molex (1995-2006)
Soledad	Operator	18	1972 (28 yrs)	Samsonite (1972-1976), Deseret (1976-1979), Magnetic Metal (1980-1983), Molex (1983-1991)
Franco	Machine operator	11	1980 (30 yrs)	S. A. Mexicana (1980-1982), Westcap (1984-1986), Chamberlain (1994-2001)
Alfonso	Operator	15	1967 (29 yrs)	Tempo (1967-1969), Samsonite (1969-1972), Empresa de arneses (1972-1982)

plants at the end of the 1990s. They required transformations in workforce utilization, so that intensive work methods were combined with "just-in-time" production methods and with training workers in the use of new technologies, bringing about the creation of new work organization models. This reordering assumes the need for multi-skilled, versatile workers and for more training for quality control, establishing a different dynamic from unskilled work [8].

The changes that are introduced by the new work organization and the advancing age of workers that have remained in this industrial sector are pointed out by key informants as the factors that have influenced their health, especially in relation to fatigue. These workers are now 40 years old and continue to perform at a high level, even though the new work requirements exhaust them. The workers between 50 and 60 years of age expressed that they had more difficulty in responding to the demands of the work processes because they feel exhausted, and noted that often the fatigue does not disappear with rest. For workers older than 60, it is even harder to respond to their work demands, because their physical capacity and memory have notably decreased. They revealed that aside from chronic diseases, they suffer fatigue and stress because they constantly make mistakes and have to repeat their work routines. Their work performance is low.

COPING STRATEGIES, FLEXIBLE PRODUCTION, AND GENDER DIFFERENCES

Coping strategies are developed in the context of a process of production defined by an industry sector that is characterized by having intense work demands. Conditions of fatigue, and as a consequence, low work performance in workers older than 40 represent a real threat for their work stability because they are in no condition to respond to the new work organization, the quality control, and the quick turnaround that characterize maquila production. The responses they employ to remain working in the maquila industry vary by gender as described here.

With the change in work organization to the flexible production model, positions were restructured and aging workers benefited from the new position profiles, promotions, and increased salaries. Franco (retired worker, age 58) was promoted to a new work category: "I was promoted to operate a computerized machine . . . which was not like the work I had as an operator. I received more training, and what's more, I learned [the] computerized procedure because they trained me there and gave me incentives so I could earn more." Female operators did not have access to develop as workers through promotions. This condition of stagnation of aging female workers is a typical way in which gender manifests in work practices toward female workers. The mechanisms that generate economic inequality and discrimination toward women have been analyzed [23].

As noted above, the intense work demands make it hard for aging workers to maintain high levels of performance. Their supervisor's decision to withdraw

them from the production areas takes effect immediately and cannot be appealed. This does not recognize their knowledge and experience, and constitutes a social devaluation in relationship to other co-workers. In the same way, it implies an economic impact that is tied to stagnation and an absence of personal development. Transfers also show gender differences: while men frequently make the decision to resign, women "adapt" to their devalued condition "enduring" a position of exclusion. Pablo (supervisor, age 49) explains these differences: "We try to place them (the male workers) somewhere else; often they think we move them around because they're no longer useful, we explain that we do it so they can be more productive, but they are very stubborn, they leave the plant and resign. Women complain but they transfer, they keep working until they retire." One of the purposes of the strategies of confrontation that male workers employ is to stay in the maquila in order to get their retirement, but only a few succeed. Women do because they "adapt," they "take it"—but male workers resign. The female workers confirm what the supervisor stated. Lourdes (operator, age 47) said, "We adapt, we accept everything because of our age, for the family and our hope of getting a pension."

For men, the decrease in manual dexterity to respond to flexible production is part of the biological changes that come with aging. They present a greater decrease in their motor capacity than women, who are more agile with fine hand coordination. This is the skill that keeps them in the packing sections. In contrast, men are transferred to areas that utilize larger work tools. Diana (operator, age 60) explained how this limitation for male workers results in their being transferred to other work areas with larger tools: "At 50, a man can no longer be effective in a factory . . . he is rougher; they give him rough tasks." Renato (auto parts distributor, age 65) confirmed that women perform better with fine motor skills work: "Women are transferred to work with their hands . . . they make contacts, connections. [They] are used for handicrafts, for small machinery, their hands are fast and firm, they don't tremble, like ours." The difference in the manual skills appears to be a biological difference but it becomes a gender difference in the work context, with implications for work activity and the aging process.

The recognition, in the community of workers, of the presence of a more technologically advanced process that demands more intense workloads and more speed, and that applies the same standards for aging workers, results in informal work practices through which gender differences are also expressed. By their initiative, women work in teams in order to meet production goals or standards, and regularly include a younger worker to take over the part of the process that is harder for the aging workers. Lourdes (47-year-old operator) explains how work routines are negotiated and take place: "We make a team of four, we review the material and reach the standard, we are older and there is a 20-year-old, another one is 48, another one is over 50; we put the younger worker where the older ones are not meeting the standard." The male workers

spoke of individual actions meant to support aging workers, such as sharing "productivity." Marcos (40-year-old warehouse worker) spoke of this experience when he was young: "I often noticed that older people needed help . . . and asked me for help, so it does happen that younger workers sometimes tried to help older workers."

What do men and women do to respond to the demands of flexible production and to diminish the impact of fatigue on their bodies? The answer is that the men negotiate with their spouses while women do not. This practice indicates profound gender differences related to the image of men, in that they are considered to be culturally linked to work, to the public sphere, to being family providers. In contrast, women are associated with the domestic sphere. Workers find that intense work demands generate in them acute fatigue states that limit their work performance. However, there is a gender difference in the way of alleviating this. In the familial context, male workers mention that they negotiate with their wives their time to rest and recuperate their energy. Their wives are in charge of ensuring these workers rest and are well nourished so they can meet work demands. Marcos (warehouse worker, age 40) explained: "Well, when I am tired I don't even want to get up, sometimes my back stings from sitting down my whole shift. I sleep all day when it's my day to rest, but sometimes I don't recover even if I sleep a lot. Rosa helps me, she wakes up and feeds me after I've rested for hours and I'm ready to go to work." Instead, women, as a rule, don't have homes with partners or children to help them rest from their work shift and prevent further exhaustion. This is not just a problem of having a double shift; it is a health problem because women are exposed to a greater exhaustion of their vital energy. Lourdes works the night shift, from 4:30 pm to 1:30 am. She gets home at 2:00 a.m. and goes to sleep. She wakes up before 7:00 am to tend to her family and to domestic chores. "When you wake up, you take care of business at home. You go to work, and you're already tired from housework. You get to work and you are in the same situation. I work Saturdays and Sundays, that is the main problem that us older workers have." Some of the aging female workers take care not just of younger children, but in some cases are in charge of supporting, educating, and caring for their grandchildren. It is hard for them to recover from their work day at home. Aurora (64-year-old operator) explains: "I have three grandchildren; their mother gave them to me. Sometimes I pay [a neighbor] so she can care for them while I go to work. I have to pick them up when I finish work."

Female workers are more responsible with their work. During their work day, they don't take short breaks, as young workers manage to do. They just produce and do not complain. They are obedient, they "adapt," and they say, "We are disciplined, we follow work orders." But in practice, being responsible at work becomes a survival strategy. In light of the disadvantage that is created by the decrease in their physical capacity, discipline is a way to compensate for their inability to reach the standard in the time and the rhythms that production

demands. However, it also entails putting in a stronger effort when working: Aurora (64-year-old operator) described how she sees herself: "We don't stop, we are like little ants, we don't waste time, and we are always working so we can reach the standard." Among the male workers who were interviewed, a sense of responsibility is also valued, but they do follow the formal rest times.

DISCUSSION

The strategies for confronting flexible production in the maquila are conscious practices developed by the workers in this industrial sector, who perceive themselves as "old" at 40. They are aware that the speed at which they can perform their work routines has visibly diminished, and that they are starting to show states of fatigue that do not allow them to respond effectively to production processes.

In practice, the specific characteristics of the flexible production process in the maquila industry allow for the development of cultural norms [24] that pertain to this work sector and that are materialized in actions in which everyone participates: male and female workers, younger and aging workers.

The decrease in work performance, as a consequence of the decrease in work functional capacities [15] and in productivity, according to the accounts of participants in this study, gives rise to informal labor practices where workers share knowledge in order to address the fatigue and to respond to the intense work demands in maquila plants.

These coping strategies are informal labor strategies that develop in the workplace and in the domestic realm and involve interactions, tacit agreements, and negotiations. Such workplace coping strategies express differences in gender roles: women tend to work in teams and "adapt" to the high demands. While men do not develop these teams, their work is primarily performed individually.

The accounts of workers in this study provide evidence that as part of their coping strategies, support from the domestic sphere is fundamental for male workers to recoup their energy and respond to the intense work demands. For the female workers, support strategies among women co-workers are important in helping them meet production goals.

There is, therefore, a difference related to gender roles: there is no evidence of support from the family to diminish the effects of fatigue for female workers, whereas this does occur for male workers. This absence leads one to formulate a hypothesis that would be interesting to explore more deeply in future research: female maquila workers are exposed to a greater degree of fatigue than their male counterparts due to the effects of the double shift, in the work and domestic spheres.

The coping strategies depicted in this study have precedents in the various practices of work exclusion that aging workers are subjected to by maquila

directors, such as displacement from their positions in the production line, which in practice becomes a mechanism for devaluing their work by plant managers. On the other hand, aging workers become more vulnerable to layoffs and harassment by managers' use of labor practices intended to expel them from the processes of production based on restructuring.

This situation forces workers to develop coping strategies that stand outside of labor regulations, workplace processes, and behavior patterns, all in order to retain certain stability of employment in the maquila industry and to receive their pension. These coping responses illustrate gender differences in the way that aging workers are affected by flexible production practices in their work. Although the biological process is the same for both genders in some ways, such as the fatigue that both male and female workers recognize, gender differences linked to biological differences do materialize. The decrease in manual skills, for example, is more evident in men than women and is particularly important in the maquila sector where motor skills and speed are fundamental for reaching production targets.

CONCLUSION

The results of this research lead one to a general formulation about the aging experience and the gender differences among workers facing flexible production in the maquila industry.

The aging process is experienced differently in this day and age than it was in the past, when these workers were younger, due to the changes introduced in the production processes over a 40-year period. These changes include increases in workload brought about by the introduction of technological advances and new forms of work organization that optimize time and movement in the work day, and that involve mechanisms for quality control and speed in task execution that fail to take into consideration the abilities of older workers.

The accounts of the workers interviewed here provide evidence that regardless of whether one is a man or a woman, there are work policies in the maquila industry that allow for age and gender discrimination. This is so because of difficulties in meeting intense work demands, combined with the decrease in the physical work skills that begins around age 40.

The phenomenon of an imbalance between physical abilities and work demands generates labor practices that devalue and exclude these prematurely aging workers. This disadvantaged position, together with the importance work stability has for these workers, influences the development of coping strategies to respond to the demands of the process of production.

The experience of aging for female operators reveals signs of gender segregation evident in the absence of promotions or in category adjustments that are related to a restructuring of production, and that result in female operators facing conditions of stagnation. In the maquila production model, women are

usually kept as general operators and given few opportunities to develop their skills. This helps guarantee lower labor costs and less turnover.

RECOMMENDATIONS FOR FUTURE RESEARCH

Some recommendations for future research relate to stress and fatigue in aging workers in Mexican industry generally. The phenomenon of the imbalance between their capacity and their workloads that older workers face generates tension and stress associated with their work performance, caused by the fear that they will make mistakes and not be able to reach production standards. In this respect Griffiths reports that "some psychosocial factors in the workplace are significantly associated with the decrease in capacity, such as the fear of making mistakes, decreased control over one's work, and decreased potential for professional development" [25].

This is a relevant topic of research for comparative studies that aim to study the different cultural norms related to models of production and the development of practices meant to address health matters within such models. There is also a need for research on gender, health, and aging issues for female workers, designed to understand their perspective on work requirements and their health-related practices. The need for further study in this area emerges from this research as two interrelated problem areas. On the one hand, in their role as workers and homemakers women do not negotiate with other family members their duties of social reproduction; and on the other hand, in their maquila industry jobs, they do not opt for taking short breaks as men effectively do.

ACKNOWLEDGMENTS

Funding from NIOSH (DHHS/CDC Award No: 1 R 13 OH009462) made it possible to translate this article from Spanish to English.

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