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> Gender, Health, and Sustainable Development

> > Proceedings of a Workshop held in Nairobi, Kenya, 5–8 October 1993

Edited by
Pandu Wijeyaratne,
Lori Jones Arsenault,
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Gender and Health Effects of Environmental Stress Among Kampala Textile Workers

Joseph Carasco¹

Introduction

This paper will outline some of the health effects of environmental stress on a group of workers in a small Ugandan textile factory. The data is drawn from a larger project of conditions of workers in several sectors of production in Uganda. Environment will be defined broadly to include socio-cultural, working and living conditions. Data will be presented separately for female and male workers.

This particular factory, United Garment Industry Ltd. (UGIL), is located in Kampala, Uganda, and employs less than five hundred workers. It was selected for our case study because it employs a relatively high percentage of female workers. It was hoped that an examination of this production unit would provide some information on particular problems faced by female workers. The principal source of data was obtained from a questionnaire administered by UGIL workers from April to June 1993. Other information was obtained from direct interviews with workers, as well as from the literature.

UGIL was incorporated in 1966 as a joint venture company between Uganda Development Corporation and two private Japanese companies. The Uganda Government has the majority shares (75%), while the Japanese companies own the balance (25%). Over the years, the factory has developed the following types of production capacities: spinning, using locally grown cotton; knitting of both local and imported yarn; and garment manufacturing, which includes T-shirts, shirts, school uniforms, trousers, etc.

This paper will explore the effects of environmental stress on both men and women, noting areas of particular concern to women. There is a wide-range of environmental conditions that affect all factory workers. While they often overlap, for the purposes of this study they will be sub-divided as follows: socio-cultural factors, wages (income), living conditions, health conditions and workplace conditions. In all tables presented, the sample for female workers is 40, and for male workers it is 67.

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Socio-Cultural Factors

Table 1: Personal Data of Female and Male Workers in UGIL

	Female (n=40)	Male (n-67)
Average age (years)	29.5	30.9
Marital Status: Married Single Divorce Widow/er	47.5% 30.0% 2.5% 5.0% 15.0%	92.5% 6.0% 0 0
Separated Children: Average number Average age (years) Workers with no children Child mortality rate/1000	1.9 7.1 20.0% 81	2.1 7.1 22.4% 126
Dependents: Average number Number without dependents	3.6	4.4

The average age at the factory of both female and male workers is about thirty years (Table 1). This is a relatively low average for a factory that began production in 1964. It suggests that there is a high turnover of workers either through resignations, lay-offs, or as a result of both factors. A 1991 study reported that some workers intend to become self-employed after they have gained some tailoring experience (Ahikirie 1991). However, the majority of workers are let go, either on disciplinary grounds (often because of petty theft), or as a result of lay-offs by management, which has happened several times during the past three decades.

There is a significant difference in the marital status between female and male workers. Approximately half the female workers are married, which is in sharp contrast with the percentage of men that are married - over ninety percent. Thirty percent of the female workers are single, compared to only six percent of male workers. There would likely be considerable social stress on the single female workers because in Ugandan society (like in many other developing countries), marriage is considered the norm for adults. A relatively high percentage (about 20%) of both female and male workers do not have children.

For those women who are single, or have no children, they have probably not chosen this situation. Rather, extremely low factory wages (to be discussed below), may make marriage and children nearly impossible. For workers who do have children, the average number is two. It should be noted that both female and male workers often maintain more than just their own children. Study results reveal that each worker has an average of four dependents. Some dependents are children of deceased relatives. Less than ten percent of the workers reported that they had no dependents at all.

The divorce rate is low (2.5%) for female workers and zero for male workers. A higher percentage of female workers are separated; fifteen percent compared to only one- and one-half percent of male workers. This is probably related to the fact that it is very difficult for women to obtain a divorce. It often involves a long and difficult struggle as men are reluctant to accept that women have a right to divorce. It is easier for a female worker (with an independent income) to separate from her husband than to obtain a legal divorce. Also, the cost of legal proceedings may be prohibitive.

Five percent of the female workers were widows and would likely find it difficult to re-marry. On the other hand, because there were no reported male widowers, it appears to be relatively easy for male workers who lose their partner, to re-marry.

Child mortality rate (under 5 years of age) among female workers (81/1000) and for male workers (126/1000) is high for both groups of workers. Poor living conditions, as well as poor medical services (see below), likely contributes to this high mortality rate. The main reported causes of child death were malaria and measles. Tetanus, meningitis and pneumonia were also reported. Most of these diseases are largely preventable. They are also not necessarily fatal.

The significant difference in child mortality rates of female and male workers can be partially explained by the fact that female workers are enjoying better living conditions than male workers (see section on residence). This is likely because the female worker is married and her partner earns a wage as well. However, in the case of the male worker, his partner may not be employed in the formal sector and could be less educated. While this may provide a partial explanation for the difference in child mortality rates for female and male workers, further work on this topic is necessary. Female and male workers earn the same salary for performing the same functions. The average wage of the male worker is a little higher (Table 2) that the average female wage because most of the top positions in this company are held by male workers.

The salaries for both men and women are not sufficient to meet their basic needs. The most expensive expenditure item of the workers monthly salary is food. It appears that the entire month's salary is necessary simply to purchase and prepare food. Figures provided by female workers for the cost of food are believed to be more reliable than figures provided by male workers because it is almost always the woman who purchases and cooks the food.

Wages (Income)

Table 2: Average wage and expenditure (in Uganda Shillings) of male and female workers in UGIL.

	Female	Male
Monthly wages	62,260	68,190
Monthly expenses*		
Food	62,400	55,000
School fees	13,700	10,730
Clothing	7,000	8,330
Taxation	6,000	6,560
Rent	21,600	17,570
Total expenses	110,700	98,190

^{*}Transportation and energy costs are not included in expenses. Medical expenses are excluded because the company is supposed to treat both the workers and their families.

In order to meet all basic expenses (food, school fees, clothing, taxation and rent, as well as transportation and energy costs), it would be necessary for workers to receive double their current wages. Even if UGIL workers earned double their salary, this is an absolute minimum, with no provisions made for household goods including furniture, emergencies and entertainment.

It is clear that no UGIL worker depends completely on her/his salary to live in Kampala. Because this fact was recognized before the questionnaire was prepared, an item was included to find out whether the workers received income from other sources. Only ten percent reported that they did. Most of those who mentioned that they had some side income did not explain how it was obtained. Of those that did, it included small farms, and for the female workers, that their husbands provided for them.

Most workers live in permanent houses made of bricks, with a cement floor, and roofed with iron sheets. Each house has an average of one and a half rooms, with about four people living in each room.

For most workers, the source of water is from a tap but a significant number obtain their water from a stream (22 - 25%) and some from a borehole (9.5%). A small percentage have taps at home (6 - 10%), although most have to walk a distance of less than 0.5 kilometres (67 - 72.5%); some between 0.5 - 1.0 kilometres (12.5 - 19%). The rest walk more than 1.5 kilometres to fetch water. In the majority of the families, it would be the woman or another female in the family who would be fetching the water.

Living Conditions

Table 3: Living conditions of female and male workers in UGIL

		Female	Male			
ACCOMMOI	ACCOMMODATION					
Walls:	Baked bricks Unbaked bricks Mud Wattle	70 % 20 % 10 % 	58 % 27 % 12 % 3 %			
Roof:	Iron sheets Tiles Asbestos	87.5 % 5 % 7.5 %	98.5% 1.5% 0			
Floor:	Cement Uncovered	95 % 5 %	85% 15%			
Rooms:	Average number Average number living per room	1.6 3.6	1.4 4.4			
WATER						
Source:	Tap Stream Borehole	75 % 25 %	68.5 % 22 % 9.5 %			
Distance:	Within home 0 to 0.5 km 0.5 to 1.5 km more than 1.5 km	10% 72.5% 12.5 5%	6% 67% 19% 8%			
ENERGY SO	URCE					
	Charcoal Electricity Kerosene Firewood	68% 16% 12% 4%	56% 21% 21% 2%			
SANITATION	٧					
	Communal Non-communal	84% 16%	95 % 5 %			
	Flush toilet Pit latrine	10% 90%	3 % 97 %			
Average numl	per of users	9.5	12.2			

Energy is mainly required for preparing meals, rather than lighting, and is usually non-renewable: charcoal (56 - 68%); kerosene (12 - 21%) and firewood (2 - 4%). A smaller percentage use electricity (16 - 21%). Charcoal is used by a large percentage of Kampala workers for two probable reasons: (1) it is more affordable because it does not have to be purchased in large quantities (compared to electricity, which must be paid in monthly bills); and (2) traditional cooking of items like bananas reportedly tastes better if cooked on charcoal, compared to kerosene stoves or electric coils or plates. Obviously, using large amounts of non-renewable sources of energy has serious consequences for the sustenance of the natural environment (forests, game parks, etc.) in the country.

With regard to sanitation, the vast majority of people use communal facilities (84 - 95%) with a high average number of users (9.5 - 12.2). A pit latrine is almost always used (90 - 97%). Rats, mosquitoes and cockroaches were reported to be present in almost every home. Occasionally, snakes were also a menace in these workers' homes. Generally, it can be observed from the figures in Table 3 that female workers have slightly better living conditions (type of residence, water source, sanitation) than their male counterparts. As previously mentioned, this may be explained by the possibility that the female worker can combine her wages with her husband, therefore significantly increasing their total family income.

The workers reported the number of times they were sick in the past year - the average number of times that a female was sick over the past year was 3.2 times, while for male workers it was 3.8 times. A higher figure of morbidity is obtained for male workers probably because the nature of their work is different in the factory and female workers have slightly better living conditions. Generally, the male workers are machine operators, mechanics, and electricians, whereas most female workers work in the garment section.

There is supporting evidence for this hypothesis if one examines the type of medical problems each group of workers faces. However, before we look at the differences, there is one glaring similarity that needs to be noted. Namely, for both male and female workers, more than half of their medical problems were of a respiratory nature. The cause of this respiratory problem is related to high dust concentration in the environment of the textile factory.

With regard to differences, there is a higher incidence of malaria among female workers than male workers. And while 9% of the male workers reported backaches, no female worker reported this particular problem. The backaches are also most probably work-related. Another health effect that should be highlighted is the high number of stomach problems which may be connected to working and living conditions. Further work needs to be done to determine the exact nature of the stomach problems to diagnose the causes.

Only the female workers reported cases of anemia. Poor nutritional standards, due to low income, combined with the reproductive role, would be the most likely explanation of this particular problem.

Health Conditions

The health conditions are summarized in the table below.

Table 4: Medical problems and mode of treatment among male and female workers at UGIL.

	Female	Male
No. of times sick last year	3.2	3.8
Nature of Sickness (%)	16	21
Fever	19	20
Cough	14	16
Chest pain	22	13
Malaria		9
Backache	13	8
Flu	3	8
Headache	11	5
Stomach problems	2	
Anemia		
Total	100	100
Treatment		
Self	2.5%	1.5%
Herbal	2.5%	2.5%
Hospital/Clinic	95%	96%

Almost all workers seem to have more confidence in hospital-based treatment rather than self-treatment, or consulting the traditional healers.

Workplace Conditions

Below is a table indicating the workers' views about the sections they work in and the major occupational health hazards found therein.

Health hazards such as poor ventilation, excess heat and too much dust and noise appear to be a problem in almost all sections of the factory. In some sections, poor lighting and drainage are also hazards. These unsafe and unhealthy workplace conditions affect both female and male workers.

Table 5: Work sections and the major occupational health hazards (hazards present indicated by '+').

	Ventilation	Heat	Dust	Lighting	Drainage	Noise
Section						
Spinning	+	+	+	+		+
Knitting	+	+	+			+
Bleaching	+	+		+	+	+
CMT/Sewing	+	+	+			+
CMT/Finishing	+	+	+			+
Shirt Plant	+	+				+
Quality	+	+	+		+	
Engineering		+	+			+
Main Store	+	+	+	+	+	
Accounts		+	+		+	+

Accident-caused injuries (some more serious than others) are common in this factory. The most common accidents are piercing fingers with needles and cutting off fingers with knives. It is difficult to say whether there is a gender bias in the number of needle-piercing accidents. Although it could be assumed that females are more commonly injured in this fashion. Other accidents that occur fairly commonly include burns, bruises, electric shocks and fingers being crushed by machinery. These types of accidents occur more often with male workers than female workers because some of the sections employ exclusively male workers (mechanical, electrical and bleaching sections).

Some of the effects of these accidents could be alleviated if there were first aid kits present. It appears that such kits are not available in any productive section of the factory. Workers also reported that there was no compensation available in most cases of accidents.

In case of fire, there are only two sections of the factory that have fire extinguishers. However, even in sections where fire extinguishers are available, they would probably not be used efficiently as no worker has been trained in their use.

Conclusion

While there has been considerable debate concerning what constitutes "development" in lesser developed technological societies, most would agree that some degree of industrialisation is necessary. Environmental working conditions, the focus of this paper, are a component to any form of development.

The study results reveal that, in many respects, workers' conditions are far from satisfactory. However, there has been an improvement since the early days of industrialization in the colonial period. For example, colonial records (Report of the Labour Department 1955; Uganda Legislative Council 1956) from the late 1950s report that the majority of workers lived in non-permanent housing (grass huts or mud and wattle), with between 6 and 12 people sleeping in a single room. The situation today is significantly better (see Table 3).

Despite the improvement since the 1950s, a review of the environmental conditions (for example, socio-cultural, wages, living, health and workplace), clearly demonstrates that workers in this Kampala garment factory are subject to tremendous levels of physical, mental and economic stress. High levels of individual stress often has a detrimental effect on productivity, which makes sustainable development difficult.

Wages, of course, are an important factor. Sufficient wages are necessary in order to afford nutritious and adequate food, proper accommodations with healthier sources of water and environmentally safer power, as well as education. Adequate wages are particularly relevant in a state which does not provide even the minimal services in education and health. It is essential that the workers' wages meet the minimum needs of the nuclear family (average of four people, two children and two adults), as well as their other obligations (for example, other dependents - average number of two). However, wages at this factory are sufficient to cover only half of the basic needs of employees. This fact is true, in various degrees, for not only textile workers, but also workers in almost all sectors of the economy (NOTU Seminar 1987; Public Service Review 1991). This clearly is a major source of stress on employees.

The results concerning child mortality rates (under 5 years of age) at this factory are consistent with Ministry of Health statistics (Demographic and Health Survey 1989). Compared to the rest of the world, Uganda's child mortality figure is strikingly high, and is placed in the category *Very High Under 5 Mortality Rate (VHU5MR)* (The State of the World's Children 1991). This relatively high figure could be a result of poor maternal diet, poor ante-natal and post-natal care, poor education of the mother, and generally poor living and working conditions.

This study, like other research of Ugandan textile factories (Mugisha 1977; Twa-Twa 1981), found a high incidence of respiratory problems among workers, which is directly related to the adverse environmental conditions in the factory. In order to reduce the incidence of this occupational health hazard, measures are needed to provide protective clothing (masks, gloves, etc.) and a generally safer working environment.

Female workers face many additional problems. Many women are the sole or primary source of family income (more than 50% do not live with permanent male partners). This is a particularly difficult responsibility in a male-dominated society. This burden is increased when one considers that there are no day-care facilities for a working-class mother. Single women workers are less well off than their married counterparts.

Jobs are segregated by sex. Male workers are exclusively employed as mechanics, electricians and accountants, as well as in the much better paid supervisory roles. Another constant problem for female workers is sexual harassment (Ahikirie 1991). Refusal to give in to the male superiors could mean loss of the job. There is a lack of job security, which makes all workers nervous about getting on the wrong side of management.

It is rare for the husband of a female worker to do much housework. Therefore, in addition to workplace health hazards, female workers face health hazards relating to household work (Chavkin 1984).

The trade union leadership is dominated by male workers, who are usually not gender-sensitive. As a result, female workers have less recourse to an organized group that is supposed to be there for the assistance of all employees. Strategies need to be developed to make trade unions more responsive to the needs of their membership, including female employees. Experience has shown that an organized voice can certainly demand and obtain more than individual voices.

In response to these stressful working conditions, workers have organized strikes in an effort to improve terms and conditions of service. However, with the current high unemployment and retrenchment taking place on a large scale in the public sector, the unskilled textile workers are in a weak position to take industrial action. Some workers have resisted in other ways, often in the form of petty theft, and more rarely by simply walking out of the job.

Female workers could organize themselves at various levels. They could actively participate in their places of residence in the Resistance Committees (RCs) and in their places of work (trade unions). In addition to joining men in these organized groups at home (RC) and at work (trade unions), they could also organize themselves separately as a lobby group. Female workers might also consider aligning themselves with the leadership of women's organizations. However, because women's organizations tend to be dominated by middle class women, they might not receive much support.

This study clearly reveals that there is significant scope for improving the working environment of these Kampala textile workers, in order to minimize environmental stress and the resulting adverse health effects. A positive working environment, which enables workers to meet their essential needs to live and reproduce, is a crucial component to sustainable development.

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- A question was raised concerning whether or not pregnant workers have special rights or receive special treatment. The presenter responded that trade unions have managed to get minimal conditions enforced. There is a compulsory 45 days leave given after delivery. However, there is very little pre-natal and post-natal care, and no special services are provided.
- Many women have more than one job. For instance, women may engage in prostitution in order to generate additional income. The extent to which secondary employment adversely effects the health of women needs more attention. Dr. Carasco responded that, to date, he has not looked at the effects of secondary employment. One obstacle in addressing this issue is that management is often unaware of secondary employment and workers may hesitate to inform researchers of what they do after work for fear that the information will get back to management.
- The importance of bringing the results of research back to both employers and employees was highlighted. The presenter agreed and said that the results of his study are currently in the process of being disseminated.
- It was suggested that the apparent lack of backaches found among women, may be due to lack of reporting on the part of women. Sometimes women take certain health problems for granted. The response was that this was an interesting point and that he would go back and check this out.
- We were reminded of the World Health Organization's definition of health, that "health is state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Mental health and psychological health effects must be given more attention. Psychological effects, as a result of the physical working environment at the factory, were not measured. The author sought suggestions on how this could best be done scientifically.
- It was submitted that the low rates of children, by both men and women, may be due to some occupation-related factor that may have a detrimental impact on fertility. The author added that it may also be a case of poor socio-economic conditions. Many of these workers have difficulty caring for themselves, much less children.

- The problems will continue unless training programs are introduced for both employers and employees. Employees are unaware of their rights and employers are therefore able to take advantage of this lack of knowledge. At present, they are now working with trade unions to devise and implement training programs. Management is not concerned with these issues; they must be dealt with at the grassroots level.
- One participant mentioned that it would be helpful if a description of the types of jobs the women perform in the textile factory, compared to men, was provided. This would be helpful when looking at patterns of job segregation based on sex.
- Finally, the importance of identifying the sex of the people who are doing the interviewing was raised. Women tend to open up more with women. For example, they may be more likely to report on backaches to a female interviewer. The response was that women were the interviewers in this study. Indeed, they would not have got as far as they did without the female interviewers.