

Work and Successful Aging Process: An Approach to Family Farming

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Abstract—Working outdoors leaves marks on human bodies that are sometimes lasting. In family farming, workers age by consequence of their exposure and work, reaching older ages with serious physical and health problems. Purpose: To analyze the main factors that affects the health and therefore the aging process of family farming workers. Method: The research is characterized as descriptive observational, with data analysis from a qualitative paradigm. A semi-structured interview and the Corlett diagram were also applied. There were 80 participants from the municipality of Linha Nova, in the south of Brazil. Results: The main problems in family farming and that are also related to workers' health are: climate, in which the sun is the main factor in premature aging and the risk of skin cancer; lack of mechanization, demanding that the activities be carried out manually; and heavy work and squatting, resulting in high incidence of lower-back pain among workers as a consequence of poor posture and weight handling. Conclusion: Despite these problems and less physical endurance, the results show that, for the elderly, to continue working on the family farm is a way to stay busy doing what they enjoy, to boost their self-appreciation and to help in the family business.
Keywords—Aging, Health, Mechanization, Pain.

I. INTRODUCTION

The current study on the successful aging process has shown to be relevant considering possible individual and cultural variations. Aging is inherently a process of gains and losses, and its consequences allow us to understand the limits of the human potential. There are seven propositions for analyzing successful aging.^[1] In this study, to understand the relationship between aging and work, we will emphasize the propositions of old age heterogeneity, of plasticity and latent capacities, of loss-gain balance, of one's ability to compensate and of using technology.

The work-aging relationship can be seen from two perspectives: aging through "work" and aging "in relation" to work. In the first case, work and its conditions are active agents on the processes of aging, on

the decline of individual's capacities and on experience building. In the second case, the transformations that occur can either facilitate or hinder work execution under the conditions imposed by the production system, thus causing negative (increased fatigue, low performance, professional disqualification) or positive (conscious rearrangement of work flow, ascending mobility) impacts.^[2]

The first situation, aging through "work", is very present in several areas, which are usually physically demanding, and over time can cause the body to be shaped for the work, leaving marks that are sometimes definitive and that will accompany the workers throughout their lives. These marks may be visible, such as cuts, burns and bruises or invisible, yet they can still act as warning signs as to the worker's health, such as pain or discomfort from activities.^[2]

Family farming is one of the agricultural segments in which body constraints are still strongly present. This sector represents a significant portion of the agricultural production in Brazil. According to the Brazilian Ministry of Agrarian Development, family farming is responsible for producing 70% of the food consumed by Brazilians every day, occupying almost 75% of the farming labor force.^[3] According to data from the 2006 Agriculture Census, 9.4% of the Brazilian territory is occupied by family farms, which employ 6.5% of the population in this segment.^[4] In other words, a contingent of over 12 million Brazilians works in small or medium-sized farms and is submitted to working in often unhealthy and ergonomically critical conditions. Ergonomics is the science that focuses on the conditions in which work is executed; it deals with adapting work conditions to individuals, in order to maintain their health, quality of life and productive capacity.^[5,6]

In a work-ergonomics relationship, even when there is mechanization, farming is still considered heavy-duty. This is due to the fact that the available technology was not created with small plots of land in mind, but for use in larger farms. Even if there are financial conditions available for the acquisition of farming equipment, there

are situations in which it is impossible even to use small machines in family farming^[6], such as type of crop, animal culture and difficult terrain. Many small family plots are uneven, with large slopes and stony soil,^[7] and as a result family farming requires greater physical effort from workers, who have to carry out a large part of their activities manually, thus risking their health. Manual tasks have been the main cause of work-related musculoskeletal disorders (MSDs). Some of which may even lead to permanent disability.^[8]

In addition, very soft soils make activities heavier, increasing energy consumption.^[6] In sectors such as farming, workers' daily energy expenditure is over 5100 Kcal, which, when occurring for consecutive years, is potentially harmful to workers' health.^[8] Therefore, farming is among the most arduous occupations. Moreover, workers develop inconvenient postures in unfavorable climatic environments, and require great application of muscle strength.

Thus, the constraints on the body occur not only due to the precariousness of equipment and machinery used in this sector, but also due to environmental conditions.^[5] Farming work, as it is carried out in close contact with nature, places individuals in situations that complicate the humanization of work. In addition to weight handling, the worker is exposed, among other things, to sunshine, rain and wind, the presence of venomous animals, topographies and soil conditions that demand workloads of different intensities.^[9] In regards to the work-environment relation, when it comes to aging, it is relevant to mention the risks of exposure to climatic factors. There is a tendency for excessive exposure to the sun and heat in the summer period. As to the harmful effects of sun exposure and the need for protection against this risk factor, sunburned farmers are more prone to skin and lip cancer. The risk is between 0.8 and 1.8 for skin cancer and between 1.3 and 3.1 for lip cancer. Likewise, excessive exposure to the sun tends to interfere with workers' early aging^[10]

During the winter, on the other hand, farmers mainly complain of contact with natural products exposed to low temperatures because their hands cool down. When a person is exposed to cold climates, body extremities experience a drop in temperature as a result of the redistribution of blood flow to maintain core heat.^[11] Workers' vulnerability to loss of heat in peripheral tissues, such as hands and feet, causes the reduction of strength and neuromuscular control. As a consequence, errors and accidents are likely to occur.^[12]

Within this context, it is important to establish a relationship between work and health. This is a complex relationship because while work damages health, it is necessary to have health in order to work.^[13] "Worker health is maintained when work and environmental

demands do not exceed their energy and cognitive limitations so as to avoid situations of stress, risk of accidents and occupational diseases" (p. 4).^[12] Therefore, in order to guarantee workers' health, it is necessary to focus the attention on activities' characteristics and to the conditions of the working areas.

Based on the aspects outlined above, the general objective of this research is to analyze which are the main factors that interfere in the health and, consequently, in the early aging of family farming workers. The specific objectives are: to characterize farmers' professional profiles; to identify main problems that interfere with workers' health; to verify areas of the body where there is greater incidence of pain/discomfort during the activities; to investigate the main causes of pain/discomfort from the farmers' point of view; to verify the risks arising from farming activities that affect farmers' health and to investigate the perception of older workers regarding farm work.

II. MATERIAL AND METHODS

This research is characterized as an observational descriptive study, with data analysis and discussion performed from the qualitative paradigm. Data collection used semi-structured interviews, with previously elaborated questions. However, although the questionnaire was originally written in Portuguese, the questions were translated into the Hunsrückisch, a language widely used by the German immigrants and their descendants, especially elders, who resided in the city where the study was conducted. After that, the answers were translated into Portuguese.

The study site was the municipality of Linha Nova, which is located in Rio Grande do Sul's rural area. The municipality's economy is mainly based on family farming, specifically horticulture. The interviews were carried out directly with 34 families of farmers, through a visit to their residences during the month of July 2014, which comprises the winter season in the region.

Parallel to the interviews, the Corlett and Manenica Diagram^[14], as shown in Fig. 1, was applied, which consists of a diagram of a human figure with 29 body areas demarcated and numbered. Each respondent was asked to mark with an "x" the regions of the body in which they felt pain/discomfort when engaging with their activities in family farming or resulting from these activities. These data were computed and can be visualized in Fig. 3.

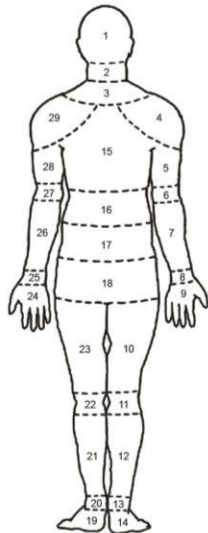


Fig. 1: Corlett and Manenica diagram

Source: Adapted from Corlett and Manenica.¹⁴

In addition, photographic records were made of a few farmers during the performance of different activities. The participants who agreed to be photographed, signed a consent form for use and dissemination of their image.

The data collected during these interviews were analyzed using the triangulation method. In this method, there is a *modus operandi* based on preparation of the collected material and articulation between three aspects: empirical data collected in the research; dialogue with authors who study the subject in question and conjuncture analysis.^[15]

III. RESULTS AND DISCUSSION

The studied group consisted of 34 families, with a total of 80 respondents, all of them active in family farming. Of these individuals, 47 are males and 33 are females. The average age is 45 years, the youngest respondent being 15,

and the oldest, 76-years-old. The average length of time they spent in farming activities is 30 years. Fig. 2 represents the percentage of respondents according to the age group.

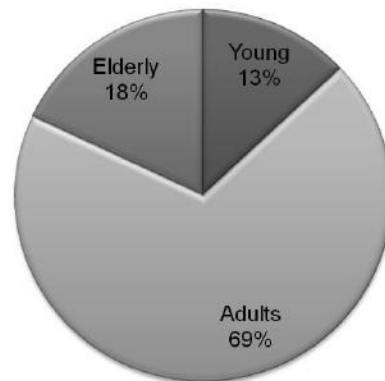


Fig. 2: Percentage of respondents according to the age group

The data analysis show that most people who work in family farming in the region are adults, with a reduced number of young and elderly people working in the sector. The average schooling is the 5th year of elementary school. The average number of working hours is 9 hours per day. However, in the summer, when the days are longer, their working hours reaches over 10 hours per day. In contrast, the respondents reported that farming activities allow flexibility in working hours. They can start activities early in the morning and have a longer break after lunch. In the afternoon, they resume their activities at around 4 pm and work until dark.

3.1 Work-related issues in family farming

When asked about the main problems they perceived in farm work activities, most respondents mentioned issues related to exposure to climatic conditions and the use of rudimentary machinery, which is illustrated in Fig. 3.

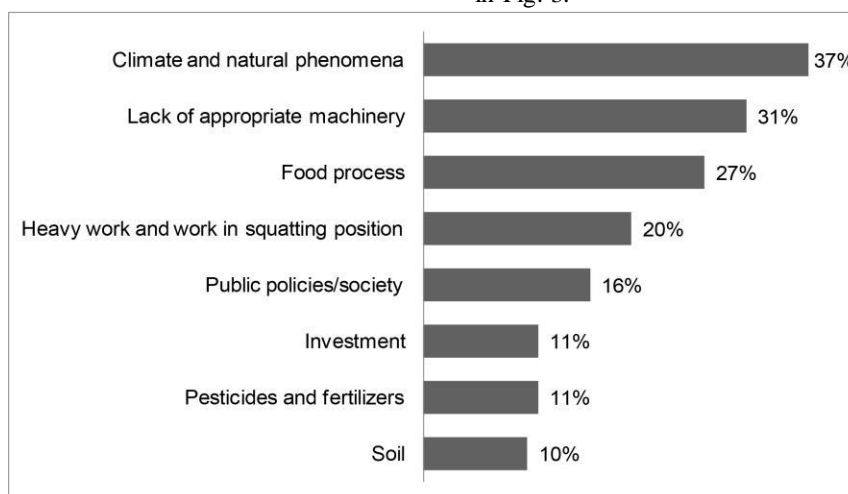


Fig. 3: Problems most mentioned by farmers related to family farming performance

Based on the results presented in Figure 3, there are three problems that are directly related to workers' health

and that interfere with aging: climate and natural phenomena; the lack of adequate machinery; and heavy

work in critical postures, whether because of the posterior flexion of the spine or because of prolonged squats. The three problems are presented separately in the sections below, along with discussion on how they can interfere/affect workers' health.

3.2 Climate and natural phenomena

Climate and natural phenomena were the problems most mentioned by most respondents. Climate effects are detrimental both to the workers' health and to the healthy development of the crops. Climate can influence on the quality of the product grown and, consequently, on the price of the product to be marketed, impacting on their earnings. Its effects become evident in the narratives of the respondents: "the climate does not help, sometimes it rains a lot, and sometimes not enough" (female farmer, 55 years old). "If the weather is good, the strawberries will come in beautifully; if there is fog, they do not" (male farmer, 47 years old). Offering a good product for a good price is key to the family farm's income. Moreover, weather adversities such as hail, drought, wind and very strong sun can result in underdeveloped crops, culminating in huge and worrying financial losses.

When they referred to the climate as detrimental to their health, respondents commented: "The sun is worst, it burns and tires more, the sun seems to be hotter than it used to be years ago; the winter is good for working" (female farmer, 56 years old). "The problem is this hot sun, and when everything is wet it is very bad" (male farmer, 50 years old). These answers show the difficulties of working when the soil and the products are wet, when it is very hot in the summer, or very cold in the winter. These conditions influence farmers' physical effort and health. Although the interviews were conducted during winter, the heat of the summer sun was mentioned by most of the workers as being one of the most damaging factors in their work performance.

The climate of the state of Rio Grande do Sul, where this research was carried out, is humid subtropical, with extremely low temperatures in winter and quite high temperatures in the summer. In addition, during heavier and more muscular agricultural tasks, the body generates additional heat, which tends to be expelled through sweat and dispenses an additional energetic charge that the body uses to perform work activities.^[16] Heavier physical work and in unfavorable external conditions increases body temperature and can cause thermal imbalance.^[5] When the work is carried out in high temperature environments, individuals can suffer fatigue, lower their performance rates and incur errors of perception and reasoning. This can lead to psychological disturbances that can cause exhaustion.^[17]

Corroborating the above, one of the respondents, an elderly woman, commented that she always wears long clothing (pants and long sleeved blouses) to protect herself

from the sun and insects, such as mosquitoes, horseflies, among others. According to the respondent, "once, we were harvesting corn under the sun, around 11 o'clock in the morning, it was very hot, then I began to feel strange, a sense of malaise, dizziness... I was so sick I fainted. I was lucky that my daughter was working nearby and saw me" (female farmer, 76 years old). This report is a clear example that exposure to high temperatures associated with heavy work is detrimental to workers in general and more so for the elderly. Increase in body heat causes a general feeling of discomfort, reduces performance, turns the skin reddish, raises heart rate and weakens the pulse. This is followed by severe headaches, lightheadedness, shortness of breath and, ultimately, unconsciousness. Age is a factor that increases the chances of a thermal collapse.^[6] Thus, in terms of legislation and worker protection exposed to weather, Regulatory Standard 31 - Climate and Topographic Factors, in paragraph C, states that one must "organize the work in such a way that activities that require greater physical effort, when possible, are developed in the morning or late afternoon".^[18]

The cold, like the heat, is also harmful to the body. Cold weather requires more muscular effort, since in a 5°C temperature muscle tension increases by 20%, which accelerates fatigue.^[5] Exposure to cold climates causes temperature at body extremities to fall due to blood flow redistribution so that it is possible to maintain core temperature.^[11] Workers' vulnerability to the loss of heat in peripheral limbs such as hands and feet, causes reduction in strength and in neuromuscular control, which can lead to skin loss, errors and accidents.^[12] In addition, it should be noted that in the winter, in Rio Grande do Sul, farmers are in constant contact with natural products exposed to low temperatures, a factor that puts the hands at risk, and frostbite may occur.

In addition, both in the summer heat and in the winter cold the sun is an extremely harmful factor to workers' health if appropriate protective measures are not taken. Solar irradiation is one of the greatest risks to farmers' health because it can lead to the development of malignant skin tumors and eye damage.^[19] Ultraviolet radiation from the sun can be classified into three types: UVA, UVB and UVC. UVA rays have a longer wavelength and are less energetic. They penetrate deeper into the skin and are the main cause of premature skin aging, photosensitivity diseases and cancer development. UVB rays have a shorter wavelength, but higher energy and lower body penetration, so they are responsible for acute and chronic damage to the skin, such as spots, burns, scaling and skin cancer. UVC rays are almost completely absorbed by the ozone layer.^[20] However, in the southern hemisphere, ozone layer protection is compromised during the spring period. Due to temperature increase in the

Antarctic region, ozone concentration in the atmosphere is drastically reduced and as air masses move eventually the low concentration of ozone is shifted to the southern regions of the American continent, including southern Brazil.^[21] For this reason, the population of this region, especially those exposed to the sun for longer periods, as is the case of farmers, is more vulnerable to ultraviolet rays. As such, UVC rays that are normally absorbed by the ozone layer during this period can also cause serious damage to human health. In UVC rays, the shorter wavelength is associated with a higher energy, which is why they are highly harmful to humans, causing carcinogenic and mutagenic effects.^[20] After years of successive sun exposure, damage from ultraviolet radiation accumulates, but the damaging effects can take 20 or 30 years to become apparent.^[22] In addition to the problems caused by ultraviolet rays, sun rays are the main cause of extrinsic aging, also known as photoaging. According to Carvalho (2014), photoaging is the skin damage process caused by chronic exposure to ultraviolet light and is generally associated with premature aging.^[23] Sun-aged skins are characteristically yellowish in color with irregular, wrinkled pigmentation, atrophic, with telangiectasias (small blood vessels) and pre-malignant lesions.^[24]

Photoaging turns the physical appearance of farmers, and all workers whose activities need to be performed under the sun, older due to damage to the skin. In addition, this damage from excessive exposure to the sun can hide more serious problems, such as skin cancer. Therefore, it is important that protection and prevention measures against ultraviolet rays, such as the use of sunscreen, are implemented. However, in fact, sunscreen is still little used in the daily lives of farming workers. In general, they only opt for wearing a straw hat or cap. Therefore, health and safety public policies with a focus on awareness of the problems arising from sun exposure should focus on farming activities in the same way as health and safety policies are developed for industry workers.

3.3 Lack of appropriate machinery

Another factor that tends to imply a higher demand for energy and higher rates of fatigue due to physical effort, movement and critical postures is the lack of appropriate machinery and tools for the job. Although it is known that farming increasingly relies on more technologically advanced products, machinery and equipment, they require adequate worker training to be properly used. But considering the respondents' profile, low schooling hampers the use of new technologies in family farming enterprises. This was made clear in the answers of one of the respondents, who stated: "machines are becoming more and more computerized, we do not

know how to use them" (male farmer, 52 years old). Some of the respondents would like to receive more training, but the distance between their land and the big metropolis, where it is possible to carry out qualification courses, is a problem. Depending on the region of Brazil and the socioeconomic status of the family, training courses are not feasible. Thus, the low level of schooling can be considered one of the factors that limit the use new technologies in farming activities, so much so that workers continue to perform rudimentary farming practices.

This, however, is not the main problem. When questioned about the problems they identify in farming, many respondents referred to the lack of mechanization and adequate tools that could assist them in daily farming activities, mainly due to the difficulties with field morphology and product characteristics: "[...] corn must be manually harvested, because it [the terrain] has a lot of hills and it is not possible to use a harvesting machine" (male farmer, 42 years old). "The fields are full of rocks, there are machines that can not be used on fields like these. Because of the hills, sometimes a lot of water washes down the fields and carries the crops away" (male farmer, 51 years old).

Thus, the lack of adequate tools and technologies compatible with the reality of family farming require greater physical effort from the workers, implying serious health risks. This problem has already been mentioned in other studies, which also verified the need for the work to be done manually, involving prolonged static postures, load handling and repetitive work.^[7] In this context, the participants provided answers such as: "the crops should be more mechanized, so that we would need to use less strength." (male farmer, 45 years old). These factors can cause pain or discomfort in different parts of the body and may be aggravated if there are no changes in the way the activities are performed.

3.4 Heavy and squatting work

It is relevant to discuss the heavy work and work performed in the squatting position related to the Corlett Diagram results^[14], as there is a direct relationship between the two issues. This approach, additionally, helps us to understand the reason why respondents consider heavy work and work performed in a squatting position a problem. All the participants in the research received a sheet with Corlett's Diagram, in which they indicated the places where they feel pain or any discomfort due to the farming activities. The percentage of pain/discomfort attributed to each body area is shown in Fig. 4.

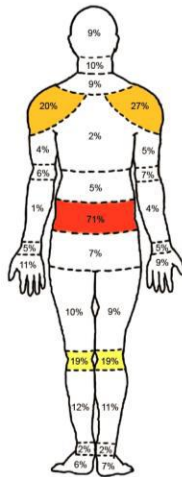


Fig.4: Workers' pain/discomfort areas originated from family farming activities

Source: Authors based it on the Corlett and Manenica Diagram.^[14]

This body scheme shows that the number of agricultural workers who reported pain or discomfort in the lumbar spine region is much higher than other body

regions. Subsequently, and in order of importance, shoulders and knees were indicated as areas of pain. When questioned about the cause of the pain, all workers who pointed those regions out answered that the pain came from the heavy work and the work done in a squatting position. It is important to emphasize that the respondents understood the work performed in a squatting position both as the work done with the knees flexed (sitting squatting) and that performed with the straight legs and anterior flexion of the spine, which are positions adopted for cultivating products on the ground. The definition of heavy work involves not only load handling, but also activities that require high-energy expenditure from the worker.

Discomfort in the lumbar spine (region indicated by 71% of the participants) is mainly due to the anterior flexion of the spine. This posture is widely adopted for cultivating crops close to the ground. Harvesting also usually requires uncomfortable postures. In addition, the workers' hands end up being used as a "tool" as well.^[12] Fig. 5 evidences that the workers often adopt the spine curved forward position.



Fig. 5: Activities that require spinal flexion

A) Cutting/harvesting of cauliflower; B) Harvesting of corn leaves; C) Lettuce planting. Source: Authors (2019).

In all the activities presented in the illustration, the anterior flexion of the spine needs to be maintained for long periods, with small respites in which the worker stands erect to relieve discomfort. "A curvature of the back keeping the knees straight causes a greater load on the discs of the lower back than when the spine is as straight as possible with the knees bent" (2005, p. 104).^[6] When the person bows, it is possible to verify the lever effect, by which a lot of pressure is put upon the discs of the lumbar region.^[6] This posture, in addition to causing indirect aggression on the discs, can cause stretching of the musculature and attacks the blood vessels and nerve roots of the vertebral column.^[25] In the long-term, adopting incorrect postures can cause muscle fatigue and physical constraints, such as spine deformation, tendonitis, among other serious problems.^[26]

The heavy work, which corresponds mainly to load handling, was another reason mentioned by the

respondents, especially elders, for the discomfort in the most marked body regions. Load handling (lifting, lowering, pushing, pulling, loading, holding, and dragging) can be classified as heavy work because it involves a lot of static and dynamic effort.^[6]

Over time, overloading the spine as a result of load handling and transporting results in degradation of bone structures, joints and intervertebral discs. These risks to the vertebral column can be aggravated when the processes are rudimentary and loads and materials transport are still carried out manually.^[27] As such, it can be inferred that, in addition to the hard elements present in the activity, in many cases, there is already a genetic predisposition for joint and musculoskeletal degradation, which is generally aggravated by age advancement and risk exposure. Regulatory Standard 31, regarding ergonomic aspects, states that "the lifting and manual

transportation of loads with weight that is likely to compromise the health of the worker is prohibited”.[18]

Farming is one of the professions that predispose the worker to problems in intervertebral discs. Spinal problems usually result in absences from work and are among the most important causes of premature disability.[6] The lesions and other physical impairments that may occur due to the adoption of inappropriate postures and load handling may persist until older ages or even be aggravated by the aging process.

3.5 Family farming work in the perspective of the elderly

All characteristics related to farming activities discussed above (climate, sun, inadequate postures and load handling) can influence worker health and, consequently, the aging “through” work. After reaching advanced age, the effects of work begin to become more apparent in the body, making it difficult to perform activities. Some respondents commented on this: “time passes and we become more tired, today I walk with a limp [...]. If I could walk better, it would be easier to work in farming” (male farmer, 67 years old). “The problem is that I do not have the physical disposition to work in farming anymore” (male farmer, 76 years old). It becomes evident in their answers the lack of physical fitness for the work. Working conditions, mainly because there is no mechanization, have increased the body’s requirements for

carrying out activities, compromising the health and the physical disposition on individuals.

However, it is not only the external factors that affect body health, genetic predisposition and the aging process itself play a part in it as well. One of the respondents commented: “I used to like working in the fields, now I cannot work so hard because I have a heart problem [...]. When I hoe the land with the oxen, I feel short of breath.” (male farmer, 64 years old). The structural changes in the heart and the vascular system due to aging can reduce the body’s ability to function efficiently.[28]

Although they no longer have the same physical strength, and feel pain when performing tasks, the elders who participated in this research stated that they still enjoy working in the farm, mainly as a way to keep themselves busy. This is evident in the words of some workers: “I like to work in farming, it is my hobby, I think it is interesting to be able to keep working a little still.” (male farmer, 75 years old). Another retired worker mentioned: “I take care of the cows, the chickens, the pigs... I feed the animals, milk the cows... I help my daughter and son-in-law when they have to prepare the products to take to CEASA [Central State Supply Company] [...]. I can no longer work hard, I run out of breath quickly” (male farmer, 72 years). Fig. 6 illustrates some of the activities still developed by elderly workers.



Fig. 6: The elderly performing family farming work activities

A) Feeding of livestock with silage; B) Feeding of roosters and chickens; C) Cutting cauliflower leaves; D) Cutting manioc branches for cattle nourishment. Source: Authors (2019)

These characteristics show how central the work in agriculture is for the elderly, since, even after retirement, they continue to help in family farming activities. Work is a means of creating existential sense or of contributing to the structuring of a person’s identity and subjectivity. To breakdown the meanings of their lives, from the worker’s

perspective, can cause suffering and even compromise their mental health.[29] As such, it can be inferred that by keeping themselves occupied, especially in old age, work becomes a relevant factor for maintaining quality of life. Therefore, the quality of life in old age does not rely only on physical and/or biological conditions, but also in social,

psychological and environmental factors that are relevant and determinant for their well-being.^[30]

Although the body is no longer able to perform farming activities, the elderly who work in agriculture with their family enjoy helping their children in the farm. That is, many do not realize the age and differentiated condition of a body that ages as a hindrance to their work, but use all their physical capacity and their energy as an opportunity to continue working as long and as hard as their bodies will allow them.

From this perspective, increasing longevity leads to changes in the world of work. Whereas work can also influence the way people are getting older. Consequently, work is a structuring point in the lives of older people, thus influencing how they act and think.^[31]

In the study developed by Bajor and Baltes, the relationship between performance at work and strategies for successful aging was analyzed.^[32,1] These strategies include loss selection, elective selection, optimization and compensation (SOC). The farmers who participated in the study demonstrated, through their answers, to use of loss-based selection when trying to adapt to the difficulties encountered both in relation to work and to nature, and even in relation to the typical age-related changes. Consequently, they are able to optimize their work experiences and thus compensate for the difficulties encountered by adapting their strategies to the technology or the innovations that are offered to them. These adaptations, of course, do not occur in a way and at a pace that can provide them with a better quality of life, but it keeps them active and independent.

IV. CONCLUSION

The present article aimed at analyzing the main factors that interfere in the health and, consequently, in the early aging of family farming workers. The results show different factors that directly affect the body and the health of workers, such as climate, long journeys, sun exposure, lack of mechanization and heavy manual labor.

The climate, in the studied location, presented two extremes, low and high temperatures during the winter and summer seasons, which interfere with the work performance. Prolonged sun exposure coupled with lack of protection is not only the main cause of premature aging of the skin, but also tends to pose serious health hazard.

As far as the context of family farming is concerned, it is possible to infer from this study that, although many factors predispose workers to early aging, one of the issues that most affect health and the maintenance of quality of life is heavy work. This condition usually results from the lack of mechanization, which exposes the body to a series of unfavorable conditions, since, in order grow products taking their own

unique characteristics into account, farmers make constant use of their spine, arms and hands as working tools.

It is important to mention that, even if workers are aware that their work is heavy and that they should reduce their workload when they reach old age, they tend to mention work as a central point in their lives. In most interviews, it is perceived that to age while working, despite the present dichotomous condition, and to work with pain or with discomfort, means more than not working. This finding tends to have overlapping cultural issues, since not working implies on not being productive anymore, that is, it can be said that there are cultural interferences that determine surplus value predominance in this case.

Finally, it is possible to affirm that work must be a factor of personal satisfaction and not of physical degradation. It is the work that must be adapted to the physical conditions of the human body and not the opposite, as it happens in family farming, in which workers adapt themselves to the work. Taking into account that the longevity of human beings is rising, working conditions must be improved for continuous health and well-being of individuals.

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