



Research Article

Obesity in Somali Immigrant Women Due to Post-Migration Dietary Changes and Decreasing Self-Esteem?

A Qualitative Interview Study on Diet, Knowledge about Risk of Heart Disease, Inactivity, Body Image and Self-Esteem

Ellis Janzon¹ and Ingrid Bolmsjö²

¹Malmö University, Health and Society, Institution of Welfare Studies, Malmö, Scania, Sweden

²Malmö University, Health and Society; Institution for Nursing, Malmö, Scania, Sweden

Correspondence should be addressed to: Ellis Janzon; ellis.janzon@mah.se

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Abstract

The last-decade incidence of myocardial infarction (MI) has diminished dramatically in most age groups but not in middle-aged women in Sweden. There has been a large influx of immigrants and it has been shown that immigrant women have a higher BMI and are less physically active than Swedish women. Thereby they have a higher risk for heart disease. The aim of the study was to examine post-migration dietary changes, and knowledge about risks for heart diseases among Somali women. Furthermore, to examine the women's perceptions of body image, self-esteem, and their knowledge about the positive effect of physical activity. The qualitative research method was used and eight Somali women aged 40 years or more, who have lived in Sweden longer than ten years, were interviewed with the help of a semi-structured questionnaire. The study revealed that Somali migrated women in Sweden had changed their diet and experienced weight increase. They reported low self-esteem and little motivation for physical activity. They understood that they had a higher risk for heart disease as compared to Swedish women and they had, in general, a preference for big body size. The women of this study are, in combination with other risk factors, at a high risk of myocardial infarction. They all revealed a general knowledge about the relationship between obesity and inactivity and enhanced risks for heart disease. They had a preference for a larger female body image. They expressed low self-esteem, loneliness, and alienation from society. It is important to address the health issue among migrant Somali women in Sweden, but since this study had few informants, larger studies and more science is needed to further investigate the problem.

Keywords: Post-migration, dietary habits, self-esteem, heart diseases.

Introduction

Somalia has been ravaged by civil war since 1978. Many Somalis have migrated to other countries nearby as well as to the USA, Canada, Europe, and Scandinavia e.g. Sweden. The majority of these refugees are women and children who have lost husbands and fathers due to the civil war. There are more than 25 000 Somalis in Sweden today (immigration statistics, 2007). Somalis may differ in local lifestyle but they share a uniform language, religion, and culture. The vast majority of the population is Moslem (99%). Mostly the wife stays at home taking care of the children and the elderly, and the husband works. The literacy among women is high (Lewis et al (2013) Most of the women came involuntarily to Sweden since their husband or relatives had arrived earlier (Cederbjörk, E.1999). They faced a number of challenges when adapting to their new country, ranging from language barriers, discrimination, and religious differences, to minor problems, like not knowing how to shop. Many of the refugee women had had a variety of traumatic experiences before they fled. All these challenges impact on health. An increase in sedentary behavior, coupled with a drastic change in diet, commonly lead to a number of health problems, such as being overweight, cardiovascular risk, diabetes, and even mental health problems (Guerin, P. et al. 2003).

Migration and Health and Cardiovascular Diseases

Increases in the prevalence of chronic diseases among immigrants in Western industrialized countries may be attributable to changes in lifestyle, e.g. a lower level of physical activity, including an altered psychosocial situation as well as changes in diet and nutritional status. Numerous studies on immigrant health in other industrialized countries report a change in the pattern of cardiovascular disease (CVD) due to the increased risk factors (Daryani et al. 2005, Gadd M et al, 2003).

Studies also report that migrants to Sweden with non-European backgrounds account for three to four times worse health conditions than native-born Swedes (Daryani, A., et al. 2005, Gadd, M., et al. 2003) and some, but not all (Nayak, R.K., et al. 2013) reports show that they have an increased incidence of acute myocardial infarction (MI) compared to natives. The incidence of MI has decreased during the latest decades in Sweden as well as in other Western countries, but not in all groups, i.e., not in middle-aged women (Janzon, E.et al., 2004). Coronary heart disease (CHD) is the most important cause of death and disability among older women.

After menopause, the lipid profile in women changes unfavorably, with increasing levels of LDL cholesterol, cigarette smoking, hypertension, diabetes mellitus, and obesity, which are all recognized risk factors for CHD in women (Janzon, E.,et al. 2004). Cardiovascular health is strongly patterned by socio-economic factors in Western countries, and refugee migrants seldom belong to the higher socio-economic levels and often have a higher rate of unemployment (Linn, M. et al. 1985).Several studies have shown that migrants often switch from a physically active lifestyle and a principally grain-based diet, with vegetables and fruits, to an "affluent" diet characterized by a high proportion of animal fat and protein and a low intake of dietary fiber. These changes may contribute to poor health (www.FHI.se, 2011). Furthermore, many immigrants have difficulties getting a job in Sweden and unemployment increases the risk of anxiety, depression, lower self-esteem, and isolation (Linn, M. et al. 1985). It is important to understand how dietary and physical activity (PA) habits, as well as unemployment affect immigrants, in order to be able to create cost-effective public health strategies.

Physical Activity and Overweight

All individuals ought to be physically active (PA) for a total of 30 minutes daily, according to the Swedish National Institute

of Public Health (2010), and in Sweden 65% of all men and 64 % of all women are. Younger persons are more physically active than the elderly, and men are more physically active than women, and this also goes for immigrants according to the National Institute of Physical Activity (2010). Regular moderate-intensity physical activity (PA) has significant benefits for health. It can reduce the risk of cardiovascular diseases, diabetes, colon and breast cancer, and depression (Powel, K. et al. 1987 and Allender, S. Et al., 2008). It has been reported that immigrant women, especially those from non-EU countries, are less active in physical activities than Swedish women (Nayak, R.K., et al. 2013 and Södergren, M., et al., 2008, Allender, S. et al 2006). In Sweden men between the ages of 45 and 64 are most likely to be overweight or obese, as are women with increasing age, and especially those with a lower level of education. Immigrant women in Sweden are also reported to be heavier than Swedish women (Nayak, R.K. et al. and Allender, S. et al 2006).

According to Allender (2006) and Phaffenberger (2001), PA plays a role in both primary and secondary prevention of cardiovascular disease. Conditions which are known to be associated with decreased PA include obesity, hypertension, diabetes, back pain, poor joint mobility, and psychosocial problems, e.g., depression.

Body Image and Overweight

Buss and Schmitt (2011) states, as do Byrd-Brenner and Murray (2003) that "Body Image" refers to the view that a person has of his or her own body size and proportions. Many factors impact the perception of one's body image, including the mass media, peer groups, ethnic groups, and family values. There is no such thing as an "ideal" or "perfect" body, and different cultures have different standards and norms for what is considered an appropriate body size and shape. Furthermore, that "Body Image" can be defined as "the picture" of our own body which we form in our mind in its physiological, libidinous, and sociological aspects.

The authors, Singh and Young (1995), as well as Renzo (2004) describes that in the Western countries there is a desire for slim figures, rather than rounded or corpulent ones as a contrast to in other parts of the world, where there is a greater preference for having a bigger body size, which also indicates social rank (sub-Saharan countries), status, and power (Coetzee and David, 2011). In the Western world thinness in women is desirable and associated with beauty, which is not the case in sub-Saharan Africa. Terms such as "umuguta" in central Africa and "mkonda" in Kenya, which mean a malnourished or thin lady, or "caato qurantay" in Somali (a skinny lady), are used with negative connotations. Women who may otherwise be called "fat" in the Western world are often described as "nzele ya vundese" in central Africa, meaning a lady with a good bottom, or "mnono" in Kenya, or "hilibifican" in Somali, which means a lady with presence or simply, literally, a lady with good meat or "good fish" (Singh and Young, 1995). Furthermore, Renzaho (2004) and Coetzee (2011) states that due to the prevalence of AIDS, the association between weight loss and illness has contributed to South Africa's negative view of thinness. In Africa a giant "bum" is hot, while most women in the Western world opt for some sizes smaller. So African immigrant women have a natural wish to have a heavier bodyweight and are thereby also at increased risk for obesity-related health problems, such as cardiovascular disease, stroke, and diabetes (Flynn and Fitzgibbon, 1998). On this background it is necessary to identify factors that contribute to the high rates of obesity among African female immigrants in Sweden.

Ethical Considerations

The study was approved by the Ethical board of Scania as well as by the Ethical Board of Malmö University.

All respondents gave written contents. Those who could not themselves read or write had all the information about the study read to them in their own language. The informants or interviewees were

informed through the interpreter that their identities would be protected and that pseudo names would be used for them in the final report.

Aim

The aim of the study was to examine post-migration dietary changes, and knowledge about risks for heart diseases among Somali women. Furthermore, to examine the women's perceptions of body image, self-esteem, and their knowledge about the positive effect of physical activity.

Method

To understand the experiences of Somali women in Sweden, including their beliefs and attitudes, expectations and conceptions of body image in relation to physical activity, the qualitative interview research method based on daily conversations was used (Kvale and Brinkman, 2009). This interview method was used in the study because it offers the opportunity for human beings to be understood through the use of conversation, which gives the subjects the opportunity to formulate their own understanding of the world in which they live. The knowledge that is gained through this method can be used to either enhance or transform the lives of the people involved in the study.

The interviews were structured with open-ended questions and were tape-recorded (Kvale and Brinkman, 2009) and then they were analyzed on the basis of Philip Burnard's content analysis process (1991). The results were linked later to the two inter-locking theories of self-efficacy. According to Kvale and Brinkman (2009), the qualitative research interview, the adopted research methodology of this study, seeks to obtain descriptions of the lived world of the subjects with respect to interpretations of the meanings of the described phenomena, which in this situation is myocardial infarction. "The strengths of the method include "the ability to obtain a realistic description of the "everyday lived world of the interviewee and her relation to it. This method provides

a holistic view of the phenomena of the investigation. Additionally, the method offers an opportunity for interaction between researcher and the research subjects in their own language and on their own terms.

The qualitative research interview is very probing in nature because it aims at an in-depth understanding of an issue, including an exploration of the reasons and context of the participants' beliefs and actions. As a result, it is more likely than any other research methodology to provoke a high degree of anxiety and distress in the participants, which may damage their reputation and standing among members of their social group, thus weakening the effectiveness of the methodology.

Since the Somali women openly showed that they were very suspicious of anything connected to authority, it was difficult to convince them of the objectives of the interview and of the fact that it was aimed at improving their knowledge about the risk factors for heart diseases, and much time and effort was put into explaining the aim of the study to them.

Inclusion Criteria

In this study, the snowball method was adopted to recruit Somali women who had been living in Malmö, Sweden, for 5-15 years and were aged 40 years and above.

The Interviews

An associate at Malmö University contacted the Somali Women's Association, with about 200 members, based in "Rosengård", a part of Malmö, where many immigrants are living. Totally there were 1824 persons from Somalia living in Malmö, 899 men and 924 women (www.SCB.se /20130601). This number only includes those persons who have been permitted to stay in Sweden. There might be about the double in number for those persons who are still seeking for permanent stay. The association "Somaliska Freds och Skiljedoms föreningen" is a voluntary organization that works for: integration,

Swedish language stimulation, culture and helping out with different administrative tasks for the participant, as well as help to the children in conducting their school home works. The organization has around 200 members (www.larernasnyheter.se/larernas-tidning/2013/10/17). The project was first presented to the coordinator of the center and thereafter in a meeting with the Somali women. The interviews were conducted by only one of the scientists with the help of an interpreter. The interview questions were semi-structured, and open-ended in nature, and they were intended to explore other themes relevant to the study. The interviews were conducted on a voluntary basis and the subjects of the interview were informed that they were free to end the interview at any time if they wished to. The interviewer had a face-to-face interaction with the interviewee and the questions were revised and updated when the situation demanded it. Initially, the interviews took place at the premises of the Somali Women's Association or were conducted in the homes of the respondents if they so preferred. The interviews lasted between 60 and 90 minutes. The duration was determined by the length of time that it took to fill out the background (demographic) information questionnaires. The interpreter helped the women fill in background data, before the main interview started. Some informants who initially opted to participate suddenly came up with excuses for not participating, e.g., an appointment with their doctor, or claiming that they were busy with other things. The interpreter helped out by using the snowball method to find other women willing to participate.

Trustworthiness

Due to the use of an interpreter, extra checking was performed, i.e., the interviewer found that when the answer of one of the informants was unexpected, the question was once again put to the interpreter, and sometimes it was necessary to go a step further by getting the interpreter to re-explain the question to the informant in order to avoid misunderstandings.

Inclusion criteria did not include overweight or experiences of weight increase, in spite of that all of the respondents had these experiences and wanted to share these experiences. We therefore dare to perceive the problem of overweight to be more commonly present in this migration group also since, in addition this study shows a preference for a heavier body image for women.

Data Coding and Analysis

Since the interview questions were semi-structured and open-ended, after the interviews were completed and the material collected had been fully recorded and each recording had been transcribed, there was only one method of analysis that could be employed, namely, the thematic content analysis, according to Burnard's twelve-stage analysis method (1991). Accordingly, the scientist began the coding of the data by reading the written memos on the themes and issues which were addressed in each interview with a view to becoming fully aware of the 'life world' of the interviewee.

Thereafter, the interviewer moved to the third-stage process of open coding the transcripts in order to capture the essence of the keywords as reflected in the interview study, for further analysis through a process of categorization also based on Burnard's higher-order headings (1991).

The data has also been analyzed using the Theory of Self-Efficacy by Bandura (1991) described in detail in the book of Nutbeam and Harris (2004). All interviews were read and discussed by the scientific team in order to decide categories. According to the theories of self-efficacy it is an established fact that self-esteem has two interrelated aspects: a sense of personal efficacy (self-efficacy) and a sense of personal worth (self-respect). Similarly, it is also an established fact that low self-esteem is a debilitating condition that keeps individuals from realizing their full potential. This was taken into consideration in reading and analyzing the data.

Results

The themes that emerged were:

- Effects of post-migration dietary in lifestyle changes, and scarcity versus abundance of food.
- lack of knowledge and fear about disease
- Weight gain and low self-esteem
- Culture and body image
- Loneliness and alienation
- Somali culture and obstacles to physical activity

Effects of Post-Migration Dietary in Lifestyle Changes and Scarcity versus Abundance of Food

The women were asked if the move from Somalia to Sweden had affected them in any significant way. Six out of the eight respondents admitted that it had brought many changes in their dietary habits as well as their lifestyles, which had affected their health negatively. They had also faced a lot of obstacles in maintaining their previous high levels of physical activity. Especially respondents that had migrated directly from rural settings expressed that they hardly knew themselves anymore.

"I have changed because of the weather; my health has also undergone some changes. I have freedom in Sweden but all the same I feel I am carrying a heavy burden. I feel mentally unwell ...In Somalia I was independent, doing everything for myself. I was engaged 24 hours in various activities... Now it is my daughters who shop for me. All I do is to sit at home and eat. I feel unhappy because I no longer run my own errands" (Informant 1).

"Here the life made me lazy because I was used to running back and forth for my daily bread back in Somalia...Looking for daily bread was difficult but it helped the body. You become lighter, you become healthy due to the running (Informant 2).

"I have gained a lot of weight since I moved to Sweden due to the lack of activities" (Informant 4).

I sit all the time at home cooking and eating... In Somalia I walked long distances, back and forth, without the use of transportation ... If I had been walking like I used to do things would have been better for me" (Informant 6).

Scarcity versus Abundance of Food

The informants went through a lot of suffering and many traumatic experiences before migrating to Sweden. Some endured starvation and the lack of basic necessities of life due to the protracted war. For example, in settling down into their newly adopted homes, they began to consume those food items that were previously scarce, and also those that had been entirely unattainable or beyond their reach in their home country, in large quantities, to the detriment of their health:

...I did not have the opportunity to eat chicken; in fact I did not eat a lot in Somalia. Seeing chicken in the shops in Sweden drove me mad. I never ate chicken in Somalia. When I went shopping with my husband and I saw the chicken I ordered 4- 5 pieces for one meal. I ate a lot of ice cream as well as chocolate"(Informant 3).

...we usually boiled our meat and eat a lot of bananas because it is believed to help in the digestive process. We ate a lot of corn, which we fried. There were different types of tubers like yams but I didn't eat them in Somalia and I used a lot of camel milk. We have a lot of greens but I don't eat a lot of vegetables now. We have many varieties of fruits but I eat a lot of guavas. In Somalia when I went to the market to buy meat I insisted on getting the fatty part of the meat because that is very tasty. I ate the chicken with the skin due to ignorance. My eating habits have changed because in Sweden food is plenty especially when you are jobless and the social services are providing for you. This has led to a situation where I overindulge myself. I eat more fish than I used to...and I have also learnt to take off the skin of the chicken before eating it to avoid the fat

which can affect one's cholesterol level" (Informant 2).

"I know some women who don't even drink water. All they do all day long is to drink coffee and milk and sugar, so what happens? One puts on weight because one is not active and not able to burn calories one puts in the body" (Informant 3).

Here I sit all the time at home cooking and eating, but in Somalia food is not as abundant as it in Sweden. The weather is also very warm in Somalia... In Sweden on the contrary I am always at home eating and sitting in front of the television. I stay at home most of the time just cooking and eating (Informant 6).

..I ate three times a day, but in Sweden food has become my friend due to the loneliness and the lack of social activities, which has made me turn to food for comfort (Informant 4).

"I don't care much about what I eat and how much. I eat big portions twice a day, while a Swedish woman will eat small portions at different times" (Informant 3).

Lack of Knowledge and Fear of Disease

A general lack of knowledge about the risk factors of heart disease was expressed. Most of the informants were aware that their unhealthy eating habits increased their risk of getting heart disease and that the risk was higher than for their Swedish counterparts. As a result, most of the informants asked for more knowledge about healthy living/eating and about the benefits of being physically active.

"I think I have a higher risk of getting a heart disease compared to Swedish women because of my eating habits. In my opinion most Africans lack knowledge about healthy eating. We use fat, starch, and sugar in the wrong proportions. I eat and do not exercise enough to burn the energy. I put three teaspoons of sugar in my cup of tea. My daughter advised me to eat sweet potatoes but I don't like it; I prefer the normal potatoes. All my choices I think put me at a higher risk of getting heart disease

compared to a Swedish woman... I think knowledgeable people should be sent to our organizations to give us talks about the benefits of being physically active as well as how to adopt good eating habits, so that the younger Somali women will not find themselves in the situation I find myself in today"(Informant 2).

"I am often tired and to me it is a sign that my heart is in trouble... I am at a greater risk of getting heart problems if I compare myself to the healthy-looking thin Swedish women, but what can I do? I sometimes think of changing my situation, but I can't do much about it" (Informant 1).

"Compared with Swedish women I think I have a greater risk of developing heart problems. Already I think I have signs that indicate that all is not well with my heart. I am also tired most of the time... I think other Somali women, including me, should think about what they eat, what time of the day they eat" (Informant 6).

"I think I have a higher risk of developing heart problems compared with a Swede. This is because most Swedes go out jogging, and they watch what they eat. I think Somali women need to be made aware of the dangers associated with eating too much sugar and fat. This is because these items are the major ingredients in the Somali diet" (Informant 3).

Culture and Body Image

All the informants in the interview claimed that their body image was what made them beautiful and attractive to men. In Sub-Saharan African cultures, in general, the ideal female body size that is associated with good health and prosperity is the large body size, which is also known as figure eight, and slim women are seen as sick. When asked about the ideal female body image in their culture, seven of the informants answered that men prefer tall women with a plump body, whilst only one answered that it is a generational thing.

"Its number eight... It means one has to have enough flesh both above and below the waist... One should have big breasts as well

as a big "backside". I was brought up to appreciate beauty in terms of roundness, meaning a woman must be fleshy... A woman who is slim is looked upon as starved or sick. A woman who is big, on the other hand, is looked upon as well fed" (Informant 4).

"In Somalia the ideal woman's body is plump. The stomach should not be big but the backside should be sizeable, but there are men who prefer them slim. But the preferred women in Somalia are the plump ones. Most men like the women that way" (Informant 7).

"I had always wished I was a little plump and nicer like today, because I was normal in weight then; there in Somalia we women did not wear trousers; we had light apparels and these apparels looked well on plump people. The general thought about slim women in Somalia is that they are either sick, have problems in their marriages or are poor" (Informant 1).

"In Somalia the men like tall women who are well shaped. They like big breasts and the backside should be sizeable, not fat. The women on the other hand don't really like too much breast because most claim it does not make their outfits sit well on them. In the past the ideal figure of the woman was the plump voluptuous one but today this ideal is changing. In the past, slim was not the preference but today to be slim in Somalia is to be regarded as having the body of a model. The new generation prefers slim to fat" (Informant 5).

"The idea of a beautiful woman is the one who has curves and is plump. For example, I visited home in 2000 and my parents were disappointed with my appearance. They kept saying that Somalis resident in the USA, Britain, and Canada, come home looking plump and nice, why? "Don't you eat in Sweden?" they kept asking me. Plumpness is associated with good health and prosperity back home... I visited my cousins in the USA in 2010 and most of the Somali women I met were very fat. They never went out walking, they always sat in their cars to go out, and these women were often out eating in restaurants. I gained 10 kilos during my 11-day visit. During the visit I was offered a lot

of Somali sweet deserts and I drank a lot of milkshakes. The weight gained within that short period alarmed me" (Informant 3).

Experienced Weight Increase, Low Self-Esteem and Lack of Self-Respect

As pointed out earlier by Bandura (1991), it is an established fact that self-esteem has two interrelated aspects: a sense of personal efficacy (self-efficacy) and a sense of personal worth (self-respect). Similarly, it is also an established fact that "low self-esteem is a debilitating condition that keeps individuals from realizing their full potential". A person with low self-esteem feels unworthy, incapable, and incompetent. In this interview all the informants talked about how their migration to Sweden and the circumstances of their existence here today have affected their self-esteem, self-respect, and motivation negatively. Most of the women actually revealed that they had experienced weight increase due to the move to Sweden, that they were not all happy about it. And that it negatively affected their self-esteem and self-respect.

"I absolutely don't look good at all... I don't like my appearance, because it prevents me from wearing the outfits I want to wear because I am fat. I wear big outfits to hide my size because others, or so I think, make comments on how fat I am... I do respect myself but sometimes I tell myself that 'Miriam you don't look good, you have to lose weight'... I have resolved, by writing it down in my book, that this year I will have to lose at least 20 kilos" (Informant 6).

"Due to eating too much and drinking too much juice I have gained so much weight. My stomach is big and my shape is changed. I don't feel too good about myself but on the other hand I say my time is out" (Informant 2).

"I do feel shy about my appearance because people look at me as if am a bag of potatoes. I am really ashamed of myself... Yes, I have been affected in such a way that I don't like going to parties. I don't like to socialize anymore because of the way I have become" (Informant 4)

....; all they do all day long is to drink coffee and milk and sugar. What happens? One puts on weight because one is not active and is not able to burn all the calories one puts into the body. I am also guilty of not drinking water. The reason why I don't drink water is that Sweden is not a warm country and I don't sweat much, so I don't feel the need to drink water. Previously I was very fat and I felt ashamed to go to a gym and mix with other people to train. Now I have lost some of the weight and I feel better. What would motivate me to be more active is for my body to look better and more beautiful, so that can push me to think more about being active. I like the way I look today. Today I don't feel shy anymore and I love myself better" (Informant 3).

"I am not too happy with my appearance but I still love myself. My stomach has become big and my legs as well. I would like to lose a little weight so I can wear certain outfits. I think health wise also being fat is not too good. I would like to lose weight to look good and also in order to enhance my health.... Even though I have put on weight, as I said before, I still have high self-esteem, because to me what matters is that I am still active. All I need to do is to lose a few kilos and I would be back to my old self. Putting on weight does not mean I have to hate myself. The important thing is that I am aware of the changes that my body has gone through, and I am ready to do something about it as soon as I am able to squeeze in some time for myself" (Informant 5).

Loneliness and Alienation

Most of the informants said they were isolated, lonely, and alienated; they were more confined to their rooms instead of going out to meet others.

As a result they lack social support and a social network and this negatively affects their psychological and physical health. This alienation from society also had to do with that they did not feel happy with their new lifestyle, inactivity and overweight, in combination with another social system of visiting friends.

I had a better social life. My social network was larger than it is in Sweden. I was more active in Somalia where I could do things with others... In Somalia I occupied myself with various activities, but here I stay indoors a lot, which affects my activity level. In Sweden if I decide to visit a friend I must call to inform them about the visit to know if it is OK for them that I come. Back in Somalia I just knock on the door of friends without informing them of my visit and I would still be welcomed... In Sweden food has become my friend due to the loneliness and the lack of social activities that have made me turn to food for comfort... Yes, I have gained a lot of weight since I moved to Sweden due to lack of activities. I often sit in front of the TV, which is my companion, and nibble at chips while I drink my soft drinks" (Informant 4 and 6).

"I am a single parent, who eats a lot. I eat at around 6 o'clock, I eat again at around 7 o'clock and after my day's work when the children have retired to bed I sit alone at around 9 o'clock and eat again while watching TV" (Informant 6).

"I am isolated, I don't work, I stay often home and that brings up the temptation to eat and watch TV. I eat big portions twice a day, while a Swedish woman will eat small portions at different times ... I have a friend who is quite slim and she keeps saying to me to go out and be active, because she thinks I am too fat. I keep giving her the excuse that I am tired, I have a pain in my legs, and so on. It is my friend that influenced me in starting my present walking... I live with my sister and I see her washing, cooking, and cleaning the house, but I don't help her because I am tired all the time. I am willing to do things, but my brain is tired. I was watching television and talking on the phone a lot, but giving a hand at home was too tiresome for me. My friend encouraged me to come out and walk since that would make me feel better" (Informant 3).

"I have changed because of the move I feel mentally unwell...I feel unhappy because I no longer run my own errands and I am not able to socialize with other women either. I

consider myself lucky anyway, because I have freedom here in Sweden... I feel I am tired due to idleness. I don't do much. I often get headaches and I feel my health is deteriorating. In Somalia I was walking a lot and I could for example wash the floors and I actually did my own washing (clothes). Today I don't feel like doing anything. I feel really sick. When I meet the doctors they tell me I am not sick... I feel sick. I only sit at home doing nothing, and I don't even vacuum clean. As I said, I have pains in my knees. I go to school now, but when I return home I am too tired to do anything" (Informant 1).

"Here I was alone and I felt very sad. I did not have any family relations around. I was still active; but I had problems because of the language. Due to my loneliness here I decided to have a large family just as I had in Somalia, so today I have five children who keep me very busy" (Informant 5).

"Yes, loneliness. Nobody talks about it. For example during the winter I feel trapped in my flat, which makes me depressed, and I feel like killing myself" (Informant 2).

Unemployment and Single Parenthood

Unemployment was one of the major risk factors for both physical and mental ill-health among the women in this interview study. All the informants were not only unemployed but also turned out to be either widows or divorced single mothers; only two individuals among them were married.

"You go to school to study, they teach you the language and you are told that when you finish the language course you will get a job. But when you finish, they look at you and say you come here a little bit older, you are too old, and they don't show much interest in you. They pick the younger ones. What do you do? You stay at home waiting for this social money which makes you lazy... Now that I am 63 I am still registered at the "Employment Office" but nobody is interested in me... I like massage but I can't afford to go and get massage since I don't work... I always want to change my style, but sometimes it requires money to do that

and money is what I lack now in my present situation" (Informant 2).

"As a single woman I am a little worn out doing all the chores I perform at home, but I still feel OK" (Informant 7).

"I feel very unwell. I am also on welfare and I am told every time to get a job, but how can I get a job when I don't feel well?" (Informant 1)

"I am planning, in the future, when my children are grown and I have a job, to take up my exercise again" (Informant 5).

Somali Culture and Obstacles to Physical Activity

The women had no perception of leisurely physical activity as it obtains in Swedish culture. Instead, most of the informants gave a plethora of excuses for not participating in physical activities, excuses that ranged from laziness, physical ill-health, tiredness, lack of time, and bad weather.

"My greatest obstacle to going out to train is the time factor. I don't have time, but I am very active in keeping home and going out with my children to get fresh air during the weekend" (Informant 5).

"My hindrance stems from the problem I have with my knees. I have so much pain in my knees. My doctor said to me that I am too fat and that is what is causing me to have pains in my knees. Another thing which is an obstacle to me is that I always feel tired; my mind is willing to be active but my body cannot cope" (Informant 6).

"My main obstacle is my sickness, that is to say, the stroke I suffered. I have to do things in a way that will not worsen my already bad situation" (Informant 4). "The weather too is another problem for me. During the winter I am forced to be home due to the cold. Due to my fear of snow I don't go to school when there is snow outside" (Informants 4 and 7).

"What gets in my way when it comes to training is the things one needs to get

started, like having a training outfit. The thought of this puts out of my mind the idea of going out to the gym to train. Another thing that sometimes gets in my way of being active is tiredness. Sometimes I have the desire to do something but I am too tired to act" (Informant 3).

"I don't understand. Do you mean to exercise? Physical activity for me implies moving about in order to be healthy. For me the word exercise means that somebody is crazy. For me there is no difference between physical activity and exercise, because when I walk to the market I am exercising and the same thing happen when I am cleaning my house or washing my clothes... As I said earlier, I am afraid of falling down and breaking a limb. My time is past, so why should I trouble myself with exercise? I also have a disease (sickle cell anemia) which gives me a lot of pain, so the idea of going to the gym frightens me because I have the fear that exercising will make my situation worse and give me more pains" (Informant 2).

Discussion

The aim of the study was to inquire into the linkages between post-migration dietary changes, knowledge about risk of heart disease self-esteem, body image. We did not especially look for informants that were overweight or had experienced weight increase, since it was not part of our inclusion criteria, but all the women who volunteer to participate in the study had these experiences, and wished to talk about it and further-more it had together with other problems, affected their self-esteem in spite of the fact that they had a preference for a heavier female body-image. They were not all happy with their weight increase.

However, the dominant theme that emerged from the interview study was a general sense of alienation and exclusion from all that is happening in Swedish society. The Somali women did not only live in isolation but their sense of alienation was also exacerbated by a general feeling of low self-esteem, also due to the fact that the majority of them were not literate, not even in their own language as the

education of women was not prioritized in Somalia, as also earlier described by Cederbjörk (1999).

Migrating to Sweden had changed the lives of these Somali women, not only in terms of perception of the world in which they now lived, but their self-concept and self-worth had also been sorely affected. The women in this study felt confused, helpless, and hopeless. It was perhaps a result of the rather long period of time which it takes to process their applications to stay in Sweden (Cederbjörk E., 1999), but they also expressed being overwhelmed by tremendous feelings of uncertainty, apathy, unworthiness, and restlessness. Perhaps this waiting period might be when these Somali migrant women begin to slide down the slippery slope towards continuous low self-esteem, especially in a sedentary situation defined by uncertainty and wherein they become ever more inactive, overweight, and obese.

This dismal situation was made even worse by the fact that instead of being given something meaningful to do with their hands, which they were used and which might support their self-esteem as explained by the "Theory of Self-Esteem" Bandura (1991) these women (some of whom were illiterate and some of whom had two years' education in Islamic schools (Lewis, T et al.. Somali Cultural Profile) were huddled together in Swedish classrooms and given handouts (since in the Swedish system of migration all immigrants are given language classes). Besides, it needs to be mentioned, that these women are "specialist" in taking care of children, the elderly, household and food preparation (Lewis et al), since this is what they have been brought up to do and have been doing all their lives, skills that, as a suggestion, could be useful and appreciated in many organizations.

The weight gain had, in combination with isolation reinforced their decreased self-esteem and self-worth that had led to a large hindering problem in the process of acculturation. Science supports the theory of a beneficial outcome of positive self-esteem that Mann, Hosmand and Scaalman

(2004), states is associated with mental well-being, happiness, adjustment, success, academic achievements, and satisfaction. It is also associated with better recovery after severe diseases. However, the evolving nature of self-esteem could also result in negative outcomes, as the women in this study expressed. Furthermore, low self-esteem can be a causal factor in depression, anxiety, eating disorders, and overconsumption of food for comfort. Lack of self-esteem can result in poor social functioning, dropping out of language school and risk behavior, as the Somali women in this study clearly express. "Self-esteem is an important risk and protective factor linked to a diversity of health and social outcomes as earlier described by Bandura (1991), and Mann M et al (2004). Some of the Somali women expressed the loss of so much self-esteem and self-worth that they totally withdrew from social life.

- Post-migration nutrition is one major problem confronting these Somali women; for example, when most of the informants reported that they had made many significant dietary changes since their arrival in Sweden, what they meant by this was not only that food is more abundant in Sweden but also the fact that it is relatively affordable. It has been described by Renzaho et al, (2004) that Somalia people before they come to Sweden were used to be vegetarians, since they could not before afford to buy meat, fish, and eggs, and their diet was based on nomadic eating habits based in turn on a diet from periodic harvests by gathering fruits and nuts. After the move to Sweden they experienced a dietary acculturation where they adapted to the new environment. They faced an abundance of food, as well as a newly-acquired ability to buy whatever food they liked e.g. meat and animal products, fried foods such as chips or fried eggs, soft drinks or beer, vegetable oil, as well as sweets that became a daily temptation hard to resist. Thereby they culturally acquired the Western determinants of food consumption characterized by taste, appearance, and texture (Renzaho et al, 2004)]. In sum, the health and well-being of these Somali migrant women had been

encumbered by a series of debilities which range from loneliness, alienation, lack of education, and lack of nutritional knowledge, to lethargy and inactivity, all of which stem from their newly acquired sedentary lifestyle and increased food intake, which, in turn, tends to aggravate their risks for heart diseases and other chronic ailments since they all reported weight increase.

They felt incapable and incompetent to the extent that they sometimes were disorganized and gave excuses in order to avoid participating in already arranged interviews even if time allowed them to, and there were an overrepresentation in this study of women living alone with their children. We do not know if one of their reasons for inhibiting already arranged meeting with the interviewer, were due to eventual husbands disapprove of them participating in the interviews. It can possible be so since men are, according to the Somalia culture, in charge of the family and the women (Lewis T., et al, 2007/), but we had no indication that that was the case. At the same time, there are more women from Somalia living in Malmo than there are men (Immigration Statistic, 2007). However, studies have shown that because a person with low self-esteem feels so bad about himself or herself, these feelings may actually cause the person's continued low self-esteem, hindering the person to engage in anything in or outside the home.

However, the women in this study, still expressed their cultural preference for large female bodies and had themselves, as mentioned, experienced weight increase in contradiction to what the Western women's magazines present as the ideal body size, which, coupled with the general confusion about the essential difference between physical activity and exercise were not their only justification and excuse for being inactive. They also believed that being involved in physical activities in Sweden would be costly, unlike other immigrants in Sweden, who, according to another study conducted by this group (Janzon E, et al, 2013), found it cheap, when compared to elsewhere. The women's statements, in this study, showed a need to

demystify what physical activity and exercise is, and to mobilize them to participate in physical activities. One suggestion would be to combine physical activity with meeting other women in order to experience joy and social togetherness, something that was brought up also in our other study. We found that the immigrant women who were active in sports did so for the social togetherness and the joy, not for the body control, as distinct from Swedish women. Therefore, physical activity could be suggested as a way out of the alienation and isolation that the women in this study so clearly express. Furthermore, and perhaps in some combination, Swedish authorities ought to empower these women, through literacy classes, lectures, and dissemination of information on nutrition and health, combined with doing practical tasks that they know about, in order to avoid that they felt bored and minimized as they expressed in these interviews, that they did in "Komvux", the municipal adult education in Sweden. Furthermore, it would be a good idea to arrange for possibilities for women to engage in physical activities by themselves, not in mixed male and female classes, which has been asked for in several other studies (Södergren, M. et al. 2008, Janzon, E. et al, 2013). This would even benefit also for the Swedish women and it would be a "win-win" situation with better integration and, for the immigrants, more possibilities to learn Swedish.

To activate the Somali women would enable them to make informed decisions and choices with regard to their health. It would increase their quality of life and well-being, by giving them an increased satisfaction with their body image, and it would help them to take the necessary steps towards reducing the risks for heart disease by becoming more physically active (Wilhelm, S. et al (2006), Mc Auley, E. et al. (2006) and Joseph, R.P., et al, 2013)

Conclusion

All women in this study had experienced weight increase. Thereby they all had a high risk of myocardial infarction (MI), due to increasing age, a sedentary lifestyle, over

consumption of fatty foods, inactivity and depression. There appeared to be a general consensus about, and acknowledgement of, the relation between overweight and obesity on the one hand, and between inactivity and enhanced risks for heart disease, on the other, among the informants. They had in general a preference for a larger female body image; still they were not all happy with their overweight. They expressed low self-esteem, and feelings of unworthiness, loneliness, and alienation from society. There is an urgent need for action to be taken to resolve the health issue among migrant Somali women in Sweden, but since this study had few informants, larger studies and more science is needed to further investigate the problem.

Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions: EJ conceived of the study, participated in the design, drafted the manuscript. IB participated in the study design and revised the manuscript critically. Both authors read and approved the final manuscript.

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