

Bus Drivers' and Assistant Nurses' Conceptualizations of Food and Meals During Working Hours

Eva Svederberg, Maria Nyberg & Klas Sjöberg

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Abstract: In today's Europe, only 24 per cent of the labor force always works regular daytime hours. The aim of the current study was to explore conceptualizations of food and meals in relation to irregular working hours. The participants were eight bus drivers in city traffic and six assistant nurses in geriatric care. The data collection comprised participant observation and semi-structured interviews. The qualitative analysis of interview data showed that the main element in the participants' conceptualization was the importance of safety and confidence in their choices, which was managed *partly* within the content of food and meals: i.e. judgment of healthiness, food safety, freshness and taste, and *partly* within the structure of meals: i.e. management of conditions for meals and opportunities to make informed choices. Employees take past experiences as well as visualizations of the future into consideration as their basis for forming a judgment about choices of food and meals during working hours. The responsibility for food and meals during working hours is to a great extent the employee's alone, despite the fact that the irregularity of the working hours is set by the employer.

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1. Introduction

Shift working is becoming increasingly common and in the EU, only 24 percent of the labor force always works regular daytime hours, 7.30-8.00 am to 5.00-6.00 pm Monday to Friday (BOISARD, CARTRON, GOLLAC & VALEYRE, 2003; COSTA, 2003). Irregular working hours lead to disturbances of metabolic control, which is due to three factors. Firstly, the biological rhythm is disturbed (humans have a 24-hour dependent variation of processes such as hormone levels, energy metabolism and temperature); secondly, behavior changes such as times at which meals are eaten and lastly, stress levels rise due to altered living conditions that affect social life and free time (KNUTSSON & BØGGILD, 2000; LENNERNÄS, ÅKERSTEDT & HAMBRAEUS, 1994). This effect on the metabolic control contributes in turn to raised blood triglycerides and cholesterol levels and an increased risk of diabetes (KARLSSON, 2004). [1]

The combination of irregular working hours and a stressful urban environment contribute to additional risk levels, and a heightened risk of myocardial infarction has been found among city bus drivers (ALFREDSSON, HAMMAR & HOGSTEDT, 1993). Changes in the labor market with an increasing number of people with irregular working hours, not least in the service-sector, but also in the health sector, have led to a rising complexity in relationships at work, meal breaks and eating habits (NYBERG, 2009). In today's 24-hour society the borders between work and leisure have also been blurred, and mealtimes are no longer set. The more the planning of working hours fails to focus on the individual, the more negative the consequences for health will be (COSTA, 2001). [2]

There is a general need for a high nutrient density in meals, i.e. food with fewer calories but more vitamins, minerals and other micronutrients, among sedentary middle-aged people (SJÖBERG, 2003), who today comprise a majority of the labor force. Improved requirements for healthy meals at work are needed, as well as greater knowledge and awareness among employers as well as employees as a basis for health promotion. A general characteristic is that earlier experiences are important for an individual's conceptualization and thinking about objects in the surrounding world (DEWEY, 1939; SVENSSON, 1997). This is also true of circumstances that contribute to compliance or lack of compliance with dietary guidelines conducive to health (SVEDERBERG, 1996, 1997). [3]

In today's society, as well as in working-life, individuals are offered a considerable choice of foods and meals, and from a public health perspective, there is a desire for individuals to make well-founded choices based on their own knowledge and understanding of current messages on food and health. The workplace is often considered an ideal setting for health promotion, and internationally, a number of workplace food initiatives have taken place to increase vegetable and/or fruit consumption (BERESFORD et al., 2001; JACK, PIACENTINI & SCHRÖDER, 1998; SORENSEN, LINNAN & HUNT, 2004; LASSEN, THORSEN, TROLLE, ELSIG & OVESEN, 2004). In spite of advocacy for needs assessment amongst the target population and involvement of all major stakeholders (TONES, TILFORD & ROBINSON, 1990), a systematic review of the effectiveness of

general health promotion interventions in the workplace has shown that employee expressed needs as a basis for interventions was reported in only a quarter of the cases and few involved employee-employer partnerships (HARDEN, PEERSMAN, OLIVER, MAUTHNER & OAKLEY, 1999). [4]

The 24-hour society and changes in food consumption patterns connected with this has become a cause for public health concern. For the sake of health promotion among employees with irregular work hours more knowledge is needed on circumstances that govern their eating habits. The research question in this study therefore concern relations between employees actual work situations and how they talk about and manage their meals. To get a profound understanding of how food consumption patterns is connected to the work situation at the individual level a qualitative research approach was used. *The aim* of the present study was to investigate bus drivers' and assistant nurses' conceptualization of food and meals during their irregular working hours. [5]

2. Materials and Methods

This study was part of an interdisciplinary research, which included participant observation, semi-structured interviews and a questionnaire study (LINDÉN et al., 2005). The data collection took place in the city of Malmö in southern Sweden, and included two different groups of employees with irregular working hours. In one group were the bus drivers of an international bus company, and in the other, assistant nurses at a municipality-run geriatric home providing round-the-clock care. The results presented here originate from an explorative and interpretative analysis of the interview data. [6]

The sampling of workplaces was made to reflect differences in what characterize working sites with irregular working hours and to reflect differences in opportunities for meals during working hours. The bus drivers had grocery stores and varied choices of fast food restaurants close to the bus company's city center staff room, or brought a box lunch. The assistant nurses were mainly preferred to bring a box lunch, as there were no grocery stores or restaurants nearby. [7]

The city bus traffic runs from 4 am until 2 am the following morning, and the bus drivers' working hours were strictly regulated (by the minute) for breaks and the bus timetable. Drivers were assigned to different bus routes daily and often had to change routes during the day. After about 2.5 hours driving, a break of 10 minutes was scheduled, which was reduced if the bus was delayed, but not compensated for. A longer meal break was scheduled after about 4.5 hours, close to the bus company's city center staff room. But because of the shift organization, what was considered lunchtime varied depending on what time the shift began. This meant that a break around 9 am could include coffee and a sandwich for some and a hot lunch meal for others. [8]

The assistant nurses working hours consisted of either a morning shift 7.00 to 15.00; an afternoon shift 13.00 to 21.00; or a night shift 20.45 to 7.15. Care was based on cooperation and on helping one another with their tasks, i.e. care of the

elderly and all other services, including cooking, were carried out by everybody on a regular basis. The shift arrangements enabled the morning shift, which started at 7.00, to end at 14.30 if the 30-minute lunch break was not taken. [9]

2.1 Participants

The participants were eight bus drivers with irregular working hours and six assistant nurses, five of whom were scheduled on the morning and afternoon shifts and one on permanent night shift. [10]

Selection of the participants was applied through an announcement of the study at the respective workplaces, including an invitation to apply to participate; the latter being the basis for selection of participants in order to reflect variation in age, country of birth and gender. This way of selection is sometimes referred to as convenience sample (BERG, 2001), which is common in this type of explorative studies for recruitment of interested participants. As most of the employees at the nursing home were women and most of the employees at the bus company were men, it was impossible to get an even gender distribution from the respective places of work. Five of the eight participating bus drivers were foreign-born (85% of the bus drivers in the company are immigrants). All of the participating assistant nurses were born in Sweden. [11]

2.2 Participant observation and qualitative research interviews

The point of departure for the obtaining of data was an ethnographic approach (HAMMERSLEY & ATKINSON, 1995) to explore the problem area. In order to get an overview of the physical as well as the social structure of the respective workplaces, participant observation preceded the qualitative research interviews. Martyn HAMMERSLEY and Paul ATKINSON emphasize the importance of a pre-field phase before a study can be fully designed, which is of particular importance in settings of which the researcher has little previous knowledge. In this study the observations introduced the researchers to the field and facilitated the possibility of asking the participants in the study appropriate questions. Participant observation often consists of spontaneous discussions, which are important for future interviews (HAMMERSLEY & ATKINSON, 1995). It was crucial to understand how time, breaks and meals during working hours were organized. During the observations the researcher joined the participating bus drivers and assistant nurses throughout a part of the working day, which included work as well as breaks and meals. However, the researcher did not take part in the work assignments. The observations made it possible to talk about food and meals in different situations. The intention was not to accomplish a dietary survey and exact times and contents of meals were not registered. The strategy of observations before the interviews was of utmost importance in understanding the context in which conceptualizations of food and meals were taking place. An observation guide was used ([Appendix 1](#)) and comprehensive notes from the respective observations were the point of departure for the individual interviews. [12]

In qualitative studies, the importance of being close to the subject is often emphasized as well as the principle of first-hand information in gaining understanding of a phenomenon (HAMMERSLEY & ATKINSON, 1995). The researcher's role in the process is therefore crucial in trying to understand the new context, as well as in trying to interpret what the participants experienced (SILVERMAN, 1993). The responsibility and accomplishment of the data analysis therefore included attendance at participant observations. The subsequent interviews were conducted using a thematic interview guide containing specific questions, expanded upon in an exploratory way in conversation (KVALE, 1996; BERG, 2001). The interview guide was divided into the following themes: the food at work, the food at home, purchasing habits, knowledge of food and food content, and finally healthy food ([Appendix 2](#)). In this way we wished to capture different aspects of food and meals at work and the relation to food and meals at home. [13]

The interviews took place in a separate room at the respective workplace. The bus drivers were interviewed just before or after a work shift, and the assistant nurses during a shift. The single interviews lasted between 50 and 90 minutes, were tape-recorded and transcribed word for word. The data consisted of fourteen interview transcripts comprising 275 A4-pages (15-26 pages per interview). [14]

2.3 Contextual analysis

The analysis of the interview data involved the use of contextual analysis (SVENSSON, 1985, 1997), which is a methodology for qualitative analysis of interview data, developed in relation to the phenomenographic research approach within the discipline of education (SVENSSON, 1997; MARTON, 1981). In the data analysis process the comprehensive notes from the respective participant observations were frequently used to validate interpretations. In contextual analysis the contextual characteristics consist of delimitation of research objects as conceptualized by the subjects within the context in which the object is an integral part. As the basis for formation of knowledge in relation to the research problem in this study, the research object was "food and meals during working hours." [15]

Contextual analysis is, with inspiration from Gestalt psychology, characterized by its holistic approach in the search for knowledge concerning a certain research problem, and to use contextual analysis is to work in an exploratory and interpretative manner to elucidate the meaning of different parts in relation to each other and to the object as a whole (SVENSSON, 1997). In the analysis, the focus was on discernment of parts, and the description of the results includes main parts of the research object, and aspects and components described at group level. [16]

The contextual analysis of interview data in the study was supported by use of the computer program Atlas.ti (MUHR & FRIESE, 2004), which has been developed close to grounded theory methodology (GTM). The inductive approach and formation of knowledge as analytic and organized is of common interest in GTM and contextual analysis. Contextual analysis is characterized by an explicit

analysis with the use of internal relations as a method for the formation of knowledge. Our interest in health promotion and the search for preconditions for learning and change in the participants' varying ways to think about and orientate themselves in relation to food and meals during their irregular working hours, and our interest in the formation of knowledge in a contextually dependent way influence the methodology of contextual analysis. [17]

To identify the bus drivers' and assistant nurses' conceptualizations of food and meals during working hours, and to capture different aspects of food and meals at work, interview data from all the interview themes mentioned above were included. An inductive approach to coding the interview transcripts was performed by means of the Atlas.ti tool "codes" (MUHR & FRIESE, 2004). The basis for the coding was to find how the participants talk about food and meals in relation to their earlier food-related experiences. In this, initially the tool "*open coding*" in Atlas.ti was used through the creation of meaning-related codes: for instance, "Hygiene is an important health factor." To ensure that each of the quotations (pieces of texts) given the same code indicated the conceptualized meaning of the code the quotations for each code were read repeatedly and compared. In a second phase of the coding some quotations were excluded or were found to represent another code. At the same time, the initial codes found in the open coding were sometimes merged and/or renamed. Thirty-one meaning-related codes were finally defined. These codes with quotations were read, sorted and interpreted as the basis of identifying the main parts of the research object. [18]

In the third stage of the analysis, the codes with quotations were sorted using the Atlas.ti tool "code-families" in the process to identify aspects of the defined main part. Finally, the codes with quotations were sorted to find components of the two aspects. Also, here the Atlas.ti tool "code-families" was an excellent support in the process. An outline of the step-by-step analysis is presented in Table 1 below. Identification of quotations to illustrate the results was part of these last stages.

Atlas.ti (Tools used)	Research object and a broad outline of results		Contextual analysis (Step-by-step)
	Food and meals during working hours		The research object
Codes	Confidence and safety		Definition of main parts of the research object
Codes-families	Content aspect	Structural aspect	Definition of aspects of main parts
	- Healthy eating - Food safety - Freshness - Taste	- Conditions for meals - Informed choices	Definition of components of aspects

Table 1: Steps in the contextual analysis of interview data by means of Atlas.ti [19]

A comprehensive description of how the interview data was step by step processed using contextual analysis by means of the computer program Atlas.ti in a past research project was previously published in *FQS* (SVEDERBERG, 2001). [20]

3. Results and Discussion

The results of the present study show that food and meals during working hours was a complex issue at both workplaces, which had to be solved at the individual level. The concern about health and well-being was great, and in one way or another, the participants tried to keep up with this. In this section the results of the contextual analysis of interview data is described and discussed. The purpose of the description is to bring out what characterized the bus drivers' and assistant nurses' conceptualizations of food and meals during their irregular working hours. First the main parts of these conceptualizations: confidence and safety are presented and discussed, and then aspects and components of these main parts. [21]

3.1 Search for confidence and safety—an important factor in choices of food and meals during working hours

The main part in the participating bus drivers' and assistant nurses' conceptualization of food and meals during working hours dealt with the importance of confidence and safety in their choice of food and meals. Both concepts together in this paper constitute a wholeness of the participants' conceptualization, which one of the concepts or the other could not capture, for instance that confidence in a cook's ability presupposes a feeling of safety that the food and meal is healthy, hygienic, fresh and tasty. Confidence denotes here a personal and emotional feeling of safety in food choices, the basis for which might be a safety system, such as food legislation and a reliable control system. Even though for instance food safety should be obvious, we know far too well that this is not always the case and consumers lose confidence in certain food products or brands, to the detriment of individual food producers and restaurants. Another example is that knowledge of healthy eating, experiences of taste, visual impressions of food products and meals gradually develop self-confidence in one's capacity and a feeling of safety in choices. [22]

Consumers in today's society are continuously confronted by various kinds of food messages in the media that draw consumers' attention to health benefits or risks. It is not surprising then that confidence and safety were found to be the focus of the participating bus drivers' and assistant nurses' conceptualization of food and meals during their working hours in this study. Modern society is also characterized by the fact that individuals, to an increasing extent, have to rely on foods and meals not prepared within the family. In a content analysis of how daily newspapers reported on questions of food risks, Deborah LUPTON (2004) found that food prepared outside the home was perceived as being much more dangerous than food prepared at home, which in turn might contribute to consumers, in this study bus drivers and assistant nurses, searching for safety and confidence in their choices of food and meals. Studies in Sweden

(SELLERBERG, 1991; LAREKE, 2007) as well as international research (ÖSTBERG, 2003) have shown that consumers use strategies in their search for trust in choices of food, which Ann-Marie SELLERBERG (1991) found to be independent of socioeconomic belonging and that consumers' strategies to have safety in their choices are most personal. Messages on food and meals are extremely varied and ambiguous and many consumers feel they are exposed to risks (ÖSTBERG, 2003). All in all, earlier research as well as results from this study show consumers to be concerned about the safety of food and meals. [23]

In the continued analysis of interview data in the present study it was further found that the participants' search for confidence and safety in their choices of food and meals during working hours was managed *partly* within content aspects of food and meals, and *partly* within structural aspects of food and meals. What characterized the participants' conceptualizations in their search for confidence and safety in relation to these two aspects is described in the following two sections: in Section 3.2 the content aspect of food and meals and in Section 3.3 the structural aspect of food and meals. [24]

3.2 In search of confidence and safety—the content aspect of food and meals

Predominant components of the content aspect of food and meals as a basis for the search for confidence and safety were found to be: healthy eating, food hygiene, freshness and taste. The description of the results below is based on these four components. [25]

3.2.1 Healthy eating

The awareness of the need for healthy eating was great among both the bus drivers and the assistant nurses, and statements indicated how they tried to make food and meal choices to attain confidence and safety in the food they ate being nutritionally healthy. The bus driver Ibrahim expressed his concern for healthy eating in the following way.

"I think it is important to me that the food I eat contains as much nutrients as possible ... preferably the vitamins the body needs." (Ibrahim, age 40, bus driver) [26]

However, the only ordinary bread option for a sandwich in the cafeteria next door to the bus company's city center staff-room was French rolls. One bus driver showed awareness of the healthiness of whole grain bread and sometimes acted in line with this when buying a sandwich during a break.

"What I would like to have is better sandwich bread. That is, not only the white bread, but also whole grain bread. Had the option whole grain bread been available, it would have been my choice. Occasionally I actually asked for it and then they said: 'We'll fix that.' Then you have to wait a minute or two while they prepare it." (Bengt, age 60, bus driver) [27]

Awareness of relations between food and health was also expressed in bus drivers' choices of fast food restaurants during working hours.

"I have one restaurant that I prefer, because the food they prepare is not too fat there." (Per, age 54, bus driver) [28]

These results are in line with an earlier survey in Sweden, which have shown lorry drivers found roadside restaurants serve fatty meals (WIRFÄLT, 1997) and an interview study that drivers were positive to better opportunities to make healthy choices (PEARSON, 1998). [29]

There were bus drivers in the present study that had a positive attitude to frozen and chilled convenience food, while others questioned the healthiness. One example is a bus driver who often bought chilled, microwave ready food from a grocery store and although he did not consider it healthy, he appreciated the taste.

"It is probably not healthy (laughs). It feels quite fatty, but it is tasty anyhow." (Anders, age 39, bus driver) [30]

Both bus drivers and assistant nurses in the study ate chilled and deep-frozen convenience food now and then, despite the fact that they showed skepticism about the healthiness of it, which was also shown in results from Claude FISCHLER (1988), who found that consumers' relation to convenience food was confused by the expansion of the industry and consumers not knowing where the food came from or how it was produced. [31]

Generally, the participants tried to choose food and meals that provided for their nutritional requirements in a way that made them feel safe and confident, which was valid for both bus drivers and nurses. In some cases, they chose food products with health claims—functional foods—and also food additives to ensure safety in their nutrient intake. Their statements indicated conscious choices, but the knowledge base was sometimes doubtful, as shown in the following conversation with Susanne (age 32, assistant nurse).

"I eat Omega-3 tablets¹."

"Do you know what they are good for?"

"No. Just to get some vitamins to stabilize my body somehow." [32]

Although several of the participants showed an awareness of the importance of eating healthy food, this was not always possible at work. For example, skepticism to convenience food, as well as to the fast food restaurants nearby the place of work, for example made it difficult to always eat healthy. The results show that healthy eating is not only a matter of the individual's awareness of nutrient content of foods and meals, but is to a great extent dependent on relationships between work hour, distribution of food and work-related infrastructure. Workers with irregular working hours have to orientate themselves

1 Capsule with Omega-3-fatty acids from fish oil.

in everyday situations which give varying preconditions for healthy eating. The interplay between the individuals, their working situation and the society needs to be considered to improve the conditions for healthy eating to promote employees' health, and especially for employees with irregular working hours. [33]

3.2.2 Food hygiene

Food hygiene was a component that arose spontaneously among assistant nurses, but especially bus drivers, in their choice of restaurants, dishes and food products in shops. The reason why bus drivers brought up food hygiene was their worry about "stomach illnesses" during working hours, although long shifts and limited access to toilets contributed to this concern.

"The most important thing is that the restaurant is clean. Once when I ordered food, the cook started to pick his nose, and then I said: 'No, thank you, I won't have that.' 'Why not?' he said. 'No, no, never!' I said." (Ibrahim, age 40, bus driver) [34]

Bus drivers were also skeptical about chilled and deep-frozen convenience food because they thought that there was no control of how the food was prepared.

"In another place, in another building, where you have no idea whether there even is spittle in it or not." (Armend, age 33, bus driver) [35]

In general, earlier food-related experiences affect attitudes to food and meals. The acculturation of new food habits, for instance to accept frozen convenience food, is a process among foreign-born as well as native born. The insecurity among the bus drivers when it came to industrially produced food was recurrent among employees born both in and outside Sweden. Their general strategy to consider hygienic aspects of food and meals was understandable considering their long hours in the bus without access to toilets. [36]

The more distinct concern for hygienic aspects of food and meals during working hours among foreign-born at the bus company in this study is here interpreted and attributed to unfamiliarity with industrially produced food, which enhanced the need for strategies to handle the food situation at work. Both Ibrahim and Armend in the citations above solved the problem by choosing restaurants during working hours where they could see for themselves that the cooks worked hygienically, and that were recommended by their colleagues. [37]

In the home for geriatric care, the assistant nurses cooked the food for the elderly; hence hygiene was not as crucial an issue, which we attributed to their working in a home-like environment where they themselves controlled the management of food and cooking. One of the assistant nurses was concerned, however, and mentioned that as a result of job sharing, they could not at present assign one person to be responsible solely for cooking. This meant that when needed, this person had to leave the kitchen to assist a colleague helping somebody, for instance in the toilet. The organization of work and breaks, both at

the bus company and at the home could therefore be considered problematic from a food hygiene point of view. [38]

Concern for food hygiene was earlier shown in two consumer studies in Sweden (SJÖBERG, 1996; SVEDERBERG, ASP, LASER REUTERSWÄRD & SVENSSON, 2002), which showed "good hygiene in production and handling of food" to be regarded as the most important in a judgment of sixteen qualities in foods. Results from the present study as well as from the two earlier studies show that concern for food hygiene is not only a matter of jurisdiction, but also a matter of consumers' conceptualization of safety and confidence in their choices of daily food and meals. [39]

3.2.3 *Freshness*

Judgment of freshness was another important component of the participants' search for safety and confidence in their choice of single food products, sandwiches, convenience food and complete meals. In their view, the appearance of foods and meals looking fresh was of absolute importance. Included in the judgment of looking fresh was the appreciation of food products of Swedish origin, as a guarantee of being fresh ("new").

"Fresh primary food products, I want them to be of Swedish origin, also deep-frozen if it is meat or chicken." (Gunilla, age 44, assistant nurse) [40]

There were respondents who mentioned that they preferred organic food as a guarantee of freshness. One of the bus drivers said that they usually go to the countryside to buy potatoes, vegetables and meat, which was considered important when searching for freshness, even if it increased the cost. [41]

3.2.4 *Taste*

In their choice of meals during working hours, confidence and safety in their search for the expected taste were conspicuous. Both foreign-born and Swedish born respondents appreciated a taste of meals that reminded them of their traditional eating habits. In some cases, this brought about low priority to meals during working hours as traditional meals at home with the family were what counted. [42]

Deep-frozen convenience foods were generally considered tasteless, uninteresting, "funny tastes" coming from the package, and were not therefore an acceptable choice for many of the bus drivers and assistant nurses. Among the participants, there were also doubts about what happens to the taste in a microwave oven.

"I won't eat food heated in microwave ovens. I think the taste disappears through heating that way." (Armend, age 33, bus driver) [43]

Hot "fast food," such as falafel, kebab, pizza, hamburgers, and soup, were considered by some respondents to be tastier, as well as healthier, than deep-frozen convenience food. For others, low prices enabled a compromise with taste. [44]

3.3 In search of confidence and safety—structural aspects of food and meals

Predominant components of the structural aspects of food and meals as a basis for the search for confidence and safety concerned management of present conditions for food and meals, and opportunities to make informed choices. The description below is based on these two components. [45]

The participant observations showed that irrespective of shift, as long as the break was long enough, the eight participating bus drivers preferred to have their meals in the bus company's city center staff room. The meals were bought in nearby cafeterias, grocery stores or fast food restaurants and only in one case, brought from home. When meal breaks were short due for instance to a bus delay, a meal was bought in a cafeteria or fast food restaurant close to the bus company's city center bus exchange and eaten straight away. [46]

The five participating nurses who worked morning and afternoon shifts joined the elderly at the dining table with a "tasting" portion, on a side plate of the same meal served to the elderly. Only one of the participating nurses sometimes left the ward for a break during working hours. The assistant nurse that worked nights had three meals during her shift, which took place in one of the nursing wards' sitting room together with fellow nurses: sandwiches (10 pm), coffee, cake and fruit (2 am), breakfast (5 am). [47]

3.3.1 Management of present conditions for food and meals

The participants' statements on the management of the present conditions for food and meals to a great extent dealt with limitations to buy and/or eat preferred meals at desired meal times during working hours. Among the participants there was a general opinion that the irregular working hours, unregulated breaks (assistant nurses) and often very short breaks (bus drivers) influenced meal times, nutrition intake, and accordingly their health in a negative way. One of the bus drivers talked about the consequences of his irregular meal times.

"But my stomach, my stomach, it does not feel all right, simply speaking. I think human beings feel better if we eat regularly, the same times every day." (Per, age 54, bus driver) [48]

Due to a shortage of time or difficulties in eating early in the morning, bus drivers said that they would have preferred to have something to eat in the bus, easily available to buy at the bus garage, or to eat before the first working period. The expressed desire for meals at different times of the work-day, for instance before the first early morning shift, could be seen in the light of research by Mia PRIM

(2007), who found that there is a great need for situation-adjusted meal solutions, better suited to consumers' wishes and needs for meals in a 24-hour society. [49]

One of the bus drivers stated that a small refrigerator in the bus would make it easier to bring a lunch from home. Such a refrigerator would have been an ideal solution in the search for safety and confidence, especially as the restaurants close by were seen by some as a potential health risk. For bus drivers who preferred to bring food from home, the present option for those who started their early morning shift at the bus garage was to leave their lunch in the garage refrigerator, which was subsequently moved to the staff room, although some did not consider this a reliable means of storage. [50]

There were many structural and organizational factors that limited healthy meals among the assistant nurses, such as the assistant nurses only being allowed to eat bits of food but not full meals while assisting the elderly at the table. There was no nearby staff restaurant and there was no opportunity for staff to buy meals from the elderly people's food supply. These meals were anyhow not nutritionally appropriate for the staff as the Swedish recommendation for the elderly with poor appetites in nursing home is food rich in energy and protein (NILSSON BARKNÄS, 2003). [51]

Only occasionally did assistant nurses bring a meal from home and snacking was more common.

"[...] maybe I eat breakfast around 10 o'clock. Then I do not eat anything until 3 o'clock, when I have a piece of cake and a cup of coffee. This means that I only have breakfast in my stomach until we serve the elderly supper at 5.30. Then I am really hungry and eat small pieces of sandwich, one after another, without feeling satisfied. This means that I often work full days without a hot meal. There is no doubt that my snacking is a problem." (Nina, age 39, assistant nurse) [52]

Irregular working hours and unregulated breaks are among other reasons for snacking at work, which in combination with a lack of time to eat, can be considered problematic from a healthy eating perspective. Assistant nurses with experience of other geriatric homes which had regulated breaks for meals, expressed a wish for at least a regulated breakfast break. This could not only enhance the possibility for the employees to eat regularly, but also to strengthen social bonds at the workplace. [53]

3.3.2 Opportunities to make informed choices

Both bus drivers and assistant nurses asked for greater opportunities to make informed choices of food and meals. One of the assistant nurses said that they did not get the information about food and health she thought they had the right to, especially since they were responsible for the elderly people's meals. Another assistant nurse said that it is difficult to know the meaning of symbols on package food labels.

"They could write just a few words in connection to the symbol, say 'less fat' or 'more fibre' or something like that. It would help me sooner or later to learn the meaning of it." (Bengt, 60, assistant nurse) [54]

One of the bus drivers judged the quality of ready meals from the number of nutrients listed in the nutrition information without knowing the meaning of them. Both the bus drivers and the assistant nurses wanted better opportunities to make informed choices of food and meals. In their statements they gave many suggestions for improvements, for instance greater responsibility on the part of the authorities.

"Overweight is becoming a greater and greater problem, so the authorities should handle it much better. See to it that there is more information. That is, how important it is that you eat healthy and not unhealthy food ... in schools ... in newspapers, to make the message known gradually." (Faruk, age 36, bus driver) [55]

The results also showed that a known trademark was a basis for the search for safety and confidence in choices of food, which was also found by Anders LAREKE (2007). A statement from one of the bus drivers showed that providing a food product with certain health advantages communicates safety and confidence.

"Yes, they have added a bacterium called ... a very long name with 20 letters, and as I said I have confidence in [the company] and I think they have healthy products." (Mikael, age 22, bus driver) [56]

Several statements showed participants had a positive attitude to food products with certain health advantages and that they wanted to know more about these products, at the same time as they were asking for easily comprehensible texts. [57]

The participants' desire for knowledge as a basis for choices of food and meals, for instance knowledge of the health effects of nutrients, indicates that something is missing in the communication. A number of investigations have shown that consumers' understanding of concepts and expressions such as health claims is limited (REID & HENDRICKS, 1994; FULLMER, GEIGER & PARENT, 1991; SVEDERBERG 2002). As it is natural for adults to collect information in order to understand and handle daily situations (MERRIAM & CAFFARELLA, 1991), there is reason to say that consumers, to a great extent, are denied the opportunity to obtain the knowledge they need to make informed choices. [58]

4. Conclusions

The results of the present study do not claim to be generalizable outside the participants of the study. We do, however, assert that similar results could also be found in other workplaces and other occupational groups with irregular working hours. The workplaces represent two different occupational groups as well as different ways of organizing time for work and time for breaks. Additionally, the study includes both men and women, different age groups and not least, a variety in ethnic origin. These are all important factors in

understanding food habits and conceptualizations of food and meals, and the knowledge from this study can be useful in further studies. [59]

Employees in the study took past experiences as well as visualizations of their future health into consideration as their basis for forming judgment about choices of food and meals during working hours. Both occupational groups in the study have relatively sedentary work with low calorie consumption. Consequently, there is a general need for high nutrient density in meals in the group of employees represented in this study (SJÖBERG, 2003), which is why the poor preconditions for healthy meals during their working hours are especially alarming. [60]

Responsibility for the content of meals is, to a great extent, the employee's alone, despite the fact that the irregularity of working hours, which limit conditions for meals, is set by the employer. For the promotion of employees' health, employers and trade unions should pay much greater attention to the content and structural aspects of food and meals during working hours in a 24-hour society. Research is needed to determine what factors facilitate partnership between employers, trade unions, employees and food service enterprises on food and meals in workplaces. [61]

Employees with irregular working hours have to comply with a complexity of considerations and shortcomings in their choice of food and meals during working hours. Research from the perspective of the employees' own experience was to a lesser extent dealt with previously (HARDEN et al., 1999). To meet employees' wishes and needs, for instance, when making informed choices, research is needed to further clarify prerequisites for communication and the learning of different aspects of food and meals during working hours, both generally and in specific workplaces. [62]

4.1 Implications for food service

The results of this study show that the need for food and ready meals during irregular working hours do not only concern food and meals as such but also other stages in the food chain, such as transportation and storage until time for consumption. One implication for food service is therefore a need for cooperation with entrepreneurs such as producers of city buses, for a bus driver fridge. [63]

The awareness of food hygiene in choices of food and meals during working hours is striking. The implications for food service on this point is the need of transparency in the cooking process to raise confidence in the food and meals produced, for instance via glass walls into the production kitchens, photos on package food labels or on websites concerning production of chilled and deep-frozen convenience food, and communication of food hygiene practices. [64]

Many are indeed concerned about and want to eat healthy food and meals during working hours. Emphasis on the healthiness of food and meals from different perspectives is welcome, for instance through improvements of opportunities for informed choices via easily comprehensible texts and clarifications on package

food labels and food menus. Based on participants' statements and the lack of knowledge they reveal, another implication for food services could be to offer opportunities for learning about food and health to employees at workplaces via their employers. [65]

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Appendix 1: Observation Guide

The focus during the observation is on today's meals, and we are present in connection with any purchase and preparation, and ingestion of food and meals; we visit the canteen and dining room.

Physical structure of the workplace

- What are the physical characteristics of the workplace? Interior, furniture, colors, lighting. What atmosphere?
- What do the premises, lunch room/staffroom/canteen, toilets look like?
- What cooking and heating facilities are available?
- Are there bulletin boards and in that case, are there menus from various restaurants?
- Are there vending machines where you can buy different types of drinks, coffee, tea, chocolate, soft drinks?
- Are there vending machines where you can buy candy, etc?

Workplace social structures

- What do the working schedules look like? What times do they work? Does it vary from week to week? Do they work days/evenings/nights/weekends: what is the distribution? Do they work in teams; do the same people always work together (the geriatric home)? What is the group-working atmosphere like among the employees?
- How do breaks work? How many breaks do they have? Where are they then? How long are breaks? Always at the same time, or do they vary? Are breaks scheduled? When they have a break, are they often interrupted and forced to step in somewhere (the geriatric home)? Do they take a break/lunch separately or more often together with other colleagues?

What do they eat?

- What does the staff eat? Do they mostly eat the same food (are they influenced by each other)? Do they eat hot food (dinner/lunch) or only snacks (sandwiches etc.)? When do they eat? How do they eat?
- Are the times for meals/lunch planned or is it when there is time? Does the work and workload steer when they can eat or are there specially designated times for that?

Neighborhood

- What is the neighborhood like? Availability/selection of restaurants, cafes and food shops. What are the opening hours? What is the range like? What are the prices? Discounts for staff?
- Do staff usually order/buy food or do they bring food with them from home? If they buy, what steers where they buy (talk further about it in the interview)?
- Take pictures of the workplace and the neighborhood!

Appendix 2: Interview Guide

Begin the interview by briefly summarizing what we talked about last time under observation (in terms of what you eat at work) and try to build on it during the interview.

The food at work

- Describe a day of work with respect to food and meals. What do you eat at work? When, how and where do you eat? Night Staff (the geriatric home)—how does it work with the food then? What do the others usually eat?
- Do you usually have food with you from home or purchase it at work? When do you plan/decide what to eat at work? Are food choices/purchases of meals planned in advance or are they spontaneous purchases? What do you think about when you choose what to eat on a given day?
- Questions about the neighborhood: Do you buy food in the neighborhood? If yes, what, when, why? What do you think of the choice of food on offer? Range? Is there anything lacking? How do you choose? What is important in the food you buy at work? What do you want a good lunch to contain? Do you usually order food together among the staff? What do you order? What are you influenced by? How and when is this determined?
- If you yourself had to decide, what would you like to eat during the working day? How would food be available? Cooking, taste, price, proximity/convenience. In what environment would you like to eat the meal? Is it good as it is now? How would you like the day to be organized in view of the breaks and meals?

The food at home

- How would you like to describe your normal eating habits? What, how and when do you eat?
- Questions about the cooking at home, who cooks the food, how often they cook, how long they spend on cooking, if they eat together, etc. Differences between weekdays and weekends? Who decides what is to be cooked/eaten at home? Do you eat often in restaurants? Where? Who decides?
- Where do your eating habits come from (education, information, friends/family, experts)? The significance of your upbringing for what you eat today?
- For people born in another country: How have your eating habits changed since you came to Sweden? What do they eat in your homeland and how does it differ from the Swedish food? What is typical Swedish food (taste, content, cooking) and what do you think about it? Where did you learn about "Swedish food" (work, friends, family)?
- Are you satisfied with your eating habits today? If not, what would you like to change? What prevents you?
- How does your work and irregular working hours affect eating habits at work and at home? Problems/opportunities? Do you eat the same food at home and at work? How does it affect you? How has your diet changed since you began working at the geriatric home/the bus company? How has cooking at [the geriatric home] affected your cooking at home?
- Family situation: Does your partner also work irregular times? How does he/she eat? Do you have children and in that case what is the importance of this for eating, cooking and planning meals at home and possibly at work?

Purchasing habits

- Questions about the buying habits: Who does the shopping? How often? Do you write a shopping list? Who decides? Where do you shop and why? What do you think of the selection of food where you shop? Is there anything missing? Do you shop in specialty shops? How much time/week do you spend on the purchase of food?
- What influences/steers you when you choose your products/food in the shops? What is important? Why choose a certain product? What would make you change an earlier choice (to choose a similar product)? How do you react when you see a new product in the store? Curious? Uninterested?
- How important is a particular brand? Do you always buy certain brands? Why?
- Are there certain foods that you don't choose and don't eat for some reason?
- What is fast food? Do you buy it yourself? Why? To what extent? In what context? How fast should it be? What do you think about fast food? How do you choose it? Alternative to today's fast food?

- Convenience food: What is the convenience in food and eating? What demands do you make of fast food/convenience food? What is important?
- What is "junk food"? Do you think that you eat much junk food? If yes, why? Is fast food and junk food the same?
- Do you buy and eat prepared meals (such as Findus, an originally Swedish and now international frozen food brand)? Why/why not? What do you think of those meals? What is good? What is bad? How could they be improved? How do you choose among these meals? Price?
- How much money goes on food each month? Share of the household budget? How do you prioritize?

Knowledge of food and food content

- Is it important to know what the food you buy contains? Do you read the package? If yes, what do you want to know? If not, why don't you read? For people born in another country: How did you learn Swedish products when you came to Sweden? What did you want to know?
- Is the information understandable? If not, how could it be improved/clarified?
- Is the information sufficient? If not, what is lacking? How do you think that producers should inform us about what their products contain?
- Do you trust the information available on the package? Does it give confidence? Could you buy a product without e.g. a list of ingredients?
- Is it important where food comes from? If yes, why?
- There are a number of ways to inform consumers that a product is particularly environmentally friendly. Are you aware of any such symbols? Do you know what they mean? If not, would you like to know? Do you trust them? Is it enough to have a symbol or should it be supplemented with e.g. text? What do you look for first, symbol or contents?
- Do you eat fruit and vegetables? What do you want to know about the fruit and vegetables you buy? What criteria do you use when you choose? Do you buy organically produced?

Healthy food

- What is healthy/nutritious food? Do you think that you eat healthily/nutritiously generally? Why/why not? Give examples of a healthy meal! If you eat healthy, have you done so a long time? What influences you?
- Have you heard of the concept of functional food, or food that has special health benefits? Is it anything of interest? Would you like more information on these products? How and where in this case? Do you trust these products and their health claims? Do you think that these products are worth a higher price?
- What do you think of products that claim to have some health benefits? Are your food purchases affected by the products' health effects? If yes, how? Give examples!

- What factors make one perceive a product as healthy/nutritious? Health appeal?
- What makes a product healthy/nutritious? What should it consist of? Does it matter whether a product is chilled or frozen for the healthiness/nutrition one perceives it to have?
- Have you have read or otherwise absorbed the information on healthy/nutritious food? Where?
- Are you aware of any symbols to show that a product is especially healthy/nutritious?
- What does your partner/spouse/family think about healthy food?
- What does the concept of health mean? What is good health and how is this achieved? Physical activity, smoking, stress? Quality of life and its relationship to food.

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Authors

Eva SVEDERBERG, PhD, is a senior lecturer in Education at the School of Teacher Education at Kristianstad University College. Her field of research is food and nutrition from a learning perspective, where the consumers' perspective and possibilities to make informed choices is a primary point of departure.

Contact:

Eva Svederberg, PhD

Senior Lecturer, Researcher
School of Teacher Education
Kristianstad University College
SE-291 88 Kristianstad, Sweden

Phone: +46 44 20 32 48

E-mail: eva.svederberg@hkr.se

URL: <http://www.hkr.se/eva-svederberg>

Maria NYBERG, PhD, is a lecturer in Culinary Arts, Food and Meal Science at Kristianstad University College. Her research interests include food patterns and attitudes to food and meals, as well as how this can be understood in relation to everyday life practices in general and the demands of the work in particular.

Contact:

Maria Nyberg, PhD

School of Health and Society
Kristianstad University College
SE-291 88 Kristianstad, Sweden

E-mail: maria.nyberg@hkr.se

Klas SJÖBERG, Associate Professor, is a senior consultant in Internal Medicine and Gastroenterology and Hepatology. He is also an active researcher in immunology and gastroenterology, especially nutrition, at the Department of Medicine, Lund University.

Contact:

Klas Sjöberg, MD PhD

Associate Professor
Institution for Clinical Sciences
Malmö, Lund University
SE-205 02 Malmö, Sweden

Phone: +46 40 33 10 00

E-mail: klas.sjoberg@med.lu.se

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