

Episode 3: Why is there a higher prevalence of overweight and obesity in rural areas? A qualitative study of rural children's perspectives of rural foodways

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So first I just want to say thank you so much for inviting me to present at your seminars and good afternoon everyone, and thank you for joining me. I've been working a long time at the Center for Obesity Research, which is located in the mid region of Norway. It's a center where we do innovation and research within the field of overweight and obesity. And I've been working with many different projects as you can see some of them here. For example, been working with the prevention and treatment of obesity, overweight and obesity, among children and young people, as well as research on adults, for example, on new treatment methods. And lately, I've also conducted research, as Zofia said, on diet and nutrition for people with intellectual disabilities, just coordinated and delivered a Stage 1 application for EU funding within this topic. So hopefully we will go to Stage 2. We cross our fingers. Yes.

And now I'm also a postdoctoral research fellow at the center for E-health. So today I will present findings from a project called Compass. This research was recently published in the Journal of Children and Society, and the aim of that research was to gain better understanding of why there is a higher prevalence of overweight and obesity in rural areas. So the project it had a social science approach and was funded by the Norwegian Research Council. It consisted of several work packages focusing on obesity and morality, and one of the work packages focused on gaining insight into children's perspectives of a rural diet. And today I will present the results from that study. So here you see the research team.

So I will start the presentation by giving you a short introduction of the background for the project. So although it is a widespread notion that urbanization is one of the most important drivers of the global rise in obesity, research shows that more than 55% of the global rise in BMI between 1995 and 2017 was due to increases in BMI in rural areas and this is also true for Norway, where we see that overweight and obesity are more prevalent in rural municipalities, but very little is known why this is so. So several explanation models have been proposed to try to explain this rural-urban difference, but it has not been empirically examined. Like, for example, that people living in rural areas, they have lower income and education levels, which correlates with unhealthy lifestyles or that a rule about the image differs from urban? That rural areas have cultural eating patterns with country cooking, which is characterized by large portions and more calorie rich food, and

that there have been changes in the nature of physical farm work and an increase in car use. So to gain more insight into explanations for this rural-urban difference, our aim was to explore children's views on their diets in relation to culture, identity and tradition in their everyday lives.

In total, 46 graders 11 to 12 years of age participated in the study, and they represented 7 schools in two different rural municipalities in mid-Norway. One was coastal and one was inland. Regarding methods used, we were inspired by participatory methods often used within the framework of childhood studies which strives to do research with, rather than on, children, and we developed the methods in collaboration with 10 Masters students during a course titled Experts in Teamwork at the Norwegian University of Science and Technology. So the students they received lectures about important topics relating to public health and they got a kind of a crash course in childhood studies, including participatory methods that are commonly used within this approach. So, supervised by the research team, methods were developed. The first involved warming up exercises for both children and the Masters students, and these exercises were specifically outlined to try to minimize the power imbalance between child participants and the adult Masters students, and to actively involve the children in problem solving.

So first we had a name game to learn each other's names, and then we had a game to tune in on problem solving, and finally a diet preference game that set the stage for the workshop theme. So the secondary participatory methods we called the refrigerator task. And during this task, the children were divided into four groups. Two of these were assigned to fill a refrigerator for a typical urban family and two for a typical rural family. So they were given, given a big sketch of an empty fridge as well as pictures of different food items and they were also asked to draw missing food items if needed. So after finishing, the children had a brief and informal presentation of their urban and rural refrigerators, and our discussion of similarities and differences between them. So this task was aimed at providing insight into the children's conceptions of urban and rural diets, as well as what food items the children were used to seeing in the refrigerator in their home. And the third method was a word cloud exercise. The children were then given post it notes and asked to fill out one for each. Each person or actor involved in teaching them about food or post it notes were put on a board and followed by a discussion. And then a word cloud was made of the words that were mentioned the most times during the discussion, but also on their post it notes. The 4th method was the food wheel, where the children were handed out individual food wheels, which in practice was a drawing of a 24 hour dial and asked to try to recall and register their food intake last Thursday and Saturday. And finally they discussed the different food wheels. It was the Masters students that were responsible for the implementation of the workshop. For each group of children, the master students had

chosen a student moderator. And the other students who are responsible for logistics, answering questions that children might have and for asking their children for relevant follow up questions alongside the moderator.

In collaboration with us, the researchers, the students, also developed backup questions associated with different exercises, and these questions were not asked systematically. Since we had instructed the students about the importance to follow the lead of the children and ask them relevant questions allowing for a more natural conversation to take place. The research group with extensive experience in writing ethnographic data, observed and took field notes during workshops. So our data consisted of the material produced by the children and ethnographic field notes produced by us, the researchers, and when analyzing data, we used multiple modes of data and focused on the potential relationship between them. And thematic analysis was used for analyzing data. So in the following, I will now present the results from this study and I will present the results according to the main participatory methods used during the workshops, namely the refrigerator task, the work cloud and the food wheel.

So we will start with the findings from the refrigerator task. So if you see in my slides you will see two pictures we took of a rural fridge and an urban fridge which was produced by the children and at first glance they might look quite similar, but we got very interesting data from the children's discussions while making them. As well as from their plenum discussions afterwards. In their discussions, we noticed that the children repeatedly associated the urban refrigerator with something modern, while the rural with the traditional or the past. And this modern-traditional dichotomy seemed to be the main way for them to communicate urban versus rural differences. We also identified the use of several related sub-dichotomies that talked about fast food versus slow food, light products versus real food products and messy fridges versus tidy fridges. The urban fridges represented in modern times have been stacked with fast food and light products, and were perceived as messy inside. The rural sketches represented the past as something traditional and old fashioned by containing slow food and what they refer to as real food products, as well as being tidy.

During this exercise, a child uttered well “If we are 1996, they are 2004”. And he was talking about the rural inhabitants and they referred to urban people and then another child stated “But that's OK, isn't it?” And he replied, “Yeah, that's what I'm saying, indicating that he was quite comfortable with living in the past”. There was also a clear connection, where traditional food in the way the children stacked their rural refrigerator, they tended to fill it with food items signifying slow food or slow cooking, such as of lax, which is a traditional Nordic salmon, fish cured with a combination of salt and sugar also a traditional

Norwegian soup made with cooked mutton and meatballs made with lamb or beef. They also stocked it with dark red cream, dairy, butter, potatoes, egg, cakes and waffles. As they explained it, they should have waffles in the fridge in case of unexpected visits by family, friends or neighbors. They also put milk from the tank at the farm and lots of meat. They stated that we eat lots of meat, for example, we'll cook ham or elk from hunting. In contrast, the children tended to fill the urban fridges with international dishes like sushi or falafel or other take away dishes. Many ultra processed foods, chicken fillet, energy drinks and new soda brands, all of them signifying modern and fast foods. They connected such food and food products to urban settings due to easier access to grocery shops and claim that urban shops had more products to choose from.

The connection of food to urban settings was also made through time spent on cooking, and here are some quotes from the children. "There is a lot of fast food in the cities. They eat fast food because they want to get it done quickly. They don't make food from scratch in the cities. Silly people are a bit lazy". The perception of silly people as lazy and not preparing food from scratch was contrary to their perception of the rural way for making food. That is, that people cook from scratch. This was exemplified, among other things in the discussion about potatoes, which are a main ingredient in the traditional Norwegian diet. They said city people don't eat a lot of potatoes. "It's too time consuming to make". They also stated that city folk eat ready baked bread while we, meaning rural people, eat whole wheat bread, implying that they make their own bread.

The children's notions of urban or modern versus rural and traditional food habits were also connected to the use of light products in urban areas and real food products in rural areas. Real food products were considered to be commodities like meat. That is often meat from your farm or obtained through hunting. They also talked about milk, cream and sour cream and they seem to agree that such foods should be as little processed as possible. One of the children stated that in the countryside, "We drink milk straight from the milk pack". Another illustrating example is when one of the children pointed out that they needed to put real man's butter in the fridge, meaning butter made from cream instead of margarine, which is made from oil. The children also talked about messy and dirty fridges in urban areas in opposition to tidy and clean fridges in rural areas. "They said things like they have massive fridges. They come from the city, they do not bother to clean". The children also considered urban fridges to contain very unhealthy food. Our finding from this task show that the children associate rural fridges with traditional food, preferably obtained through local farming or hunting and food, good for slow cooking. Urban modern fridges were described as dirty. Rural fridges were seen as clean and containing healthy food. And such perceived differences were also linked to differences in how rural versus urban people live their lives.

The children's discourses review that they perceived urban people not to know where their food comes from, claiming that city people are lazy, in a hurry. They make fast food and buy their food at grocery stores. Our findings from this first task also suggest that the children did not agree on certain public health messages put forward by the Norwegian Directorate of Health, for example, that people should eat less red meat and more fish, that one should use oil and margarine instead of butter and eat lean rather than fatty dairy product. Instead, the children communicated that they ate real man's butter, red meat and no fish and real products, no light products. This indicates that the children reject the public health messages in favor of their rule, food identity, or their rule identity, and ways of living.

As we will see in the following word cloud task, the children's discourses further support our finding in how the children used food to communicate their rural identity. So over to the exercise, the word cloud. During this exercise, the children were giving post it notes and were asked to fill out one for each person or actor involved in teaching them about food. This task was followed by a discussion among the children. On their post it notes, the children had registered mother and school as the most important actors in educating them about food. Regarding school, the children repeatedly wrote down and talked about the national compulsory subject, food and health. This is a subject aimed at teaching children the relationship between diet and health. It promotes public health, food and interest in the diversity of foods and meals, customs in Norwegian society and aims at helping children implement healthy diets. The children shared that during these classes they were taught to make food from recipes, and then eat it. Several emphasized that they learned how to bake cakes. This might indicate that rural teachers see it as an important tradition for rural children to learn. The children also told us that they learned how to make different traditional rural dishes. We also asked children if they learned anything about nutrition in the subject, food and health, but the children got quite flustered by the question and answered in vague terms. Our impression was that they were more concerned about sharing with us what food dishes they had made, rather than what they had learned about. We also asked them if they like to cook in general, and several responded yes, but only a few raised their hands when asked if they were helping with the cooking at home. In general, they stated that they did not want to be more involved in cooking, whether they normally were helping out or not, and this might suggest that the Norwegian rural tradition to involve especially girls in cooking at an early age to get them cooking skills as adults, is fading. From the task, it was clear that mothers had the biggest role alongside the subject of food and health to teach their children about food. All children had noted 'mother' on their post it note. They stated that they were taught by their mothers how to make elk tenderloin cakes, steaks and traditional soups. This is also in line with the insight we

obtained during the refrigerator task where the children were asked whether there are foods that are typical for their rural area, to which the children replied yes. According to the children, the fathers did the hunting and the mothers did the cooking. Again, the children emphasized local food traditions and access to real food obtained by hunting. When elaborating on the mother's teaching about food. And this supports our findings in the refrigerator task on how the children use food to communicate their rural identity and to distance themselves from urban people and ways of living and eating. And one child explained it like this. We run outside and hunt for food and you guys hunt in the city.

Furthermore, the children had written 'Grandmothers, aunts and uncles, dad, friends, television and commercials, and social media' on their post it notes. But they did not elaborate much on their roles in teaching them about food in this exercise. To sum up, the children again displayed their conceptions of rural food in their discourses and highlighting cake baking and the making of local traditional dishes. When talking about who teaches them about food, only a few children replied that they were helping out at home, making food, and their children also stated that they did not want to be more involved. As mentioned that this might suggest that involving children, especially girls in cooking, is a fading practice, but we also believe it indicates a change in rural food practices towards more urban ones.

As we will see in the final exercise, the food wheel. The aim of the food wheel was to gain detailed insight into the children's diets. All children were asked to fill out two different food wheels for what they had eaten last Thursday and Saturday. The children recorded both the hour of the day and the content of their meals and snacks. And even though many children stated that they found it quite difficult to remember what they had eaten, we found some similarities when analysing their food. For example, few ate breakfast before school. We also found that many ate potato chips and other snacks as in between meals. Also on weekdays on Saturdays, which is the day of the week that normally in Norway, where children are traditionally allowed to eat sweets, the children only registered that they ate breakfast, dinner and then snacks and no other meals. We gained additional information about the children's diets during their discussions about their food wheels. Initially, the children had clear ideas about what should be eaten on a Thursday versus a Saturday. Sweets and candy were associated with Saturdays, whereas Thursdays were associated with everyday food. And on the weekends, they started to eat beef and tenderloin. And this reflects the Norwegian tradition of eating moderately on weekdays and more abundantly on weekends. However, when looking closely at their wheels, the children themselves discovered that they often ate potato chips, sweets and other snacks during the week. And some claimed to be allowed to buy a candie bag of three kilos every Saturday, which is about 11,000 calories. In general, the children agreed that there was not

much difference between weekdays and weekends regarding the intake of candy and sweets.

In one of the municipalities, the children were asked how often they ate frozen ready made pizza, even though no one had registered pizza on their food. Four children said that they hardly ever ate pizza, and one child claimed to eat pizza once a week. But the rest of the children, which was about 15 children, told us that they ate pizza two to three times a week. Many also stated that they ate pizza when going to a local restaurant. Tacos was also mentioned as a favorite dish by many during their discussions, even though this dish was totally missing from all the food wheels. The children were also asked if they ate dessert every day. At first they stated that this was only done occasionally, but this led to a discussion amongst the children about the role practice of eating a cakes and pastries. So I will give you now an example, an example from the discussion. Child one says my mom sometimes bake cakes during weekends and then child two says “But your mom bakes all the time”, and child one starts to laugh and then child three says my grandmother bakes constantly. She has, you know, 4 freezers full. If I want something good to eat, I go to my grandparents. So many children shared how they often visited their grandmother and that she often served them something sweet. They said things like ‘Grandmother has cake. My grandmother has pancake batter in the fridge so we can make pancakes. I get buns or waffles from grandma. Dad sometimes brings stuff from grandma because she begs all the time’. It seems that grandmothers were generally associated with giving sweets, sweet treats, to the children. So during the third wheel task, it became clear that there was a discrepancy between what the children initially presented as their eating habits and what they actually ate, especially when seen in connection to the two other tasks.

We found that there was a difference. Between what? We called imaginary food of the children and their day-to-day reality, and our results suggest that the children's imaginary foods were used to maintain and or strengthen their rural identity. In addition, these imaginary foods involved a rejection of certain public health messages because those were seen as belonging to the urban sphere. So to conclude, the children displayed imagined rather than actual food to maintain and or strengthen their rural identity. The notion of imagined food, as we use it, builds on the sociological concept of imaginary communities used for explaining cultural and territorial gaps between the actual and the imagined. Food ways connect people through the consumption of food, which then comes to represent people, shared experiences of cultural identity and history. And also imagination is an important source of community. According to Anderson, connecting people across time and space, and imaginary food hence corresponds to food related practices among various members of a population that emerge through their representations and geographical imaginary. So where food has been grown, caused or

raised has changed dramatically with the entry of commercial foods worldwide. Still, the children's imaginary food seems to rely on representations of a closeness to nature and a history of farming and hunting. In contrast, they perceive urban people to eat unhealthy global and ultra processed foods, of which they do not know the origin. Our findings suggest that the rural children ate more calories than style than urban children due to a combination of a traditional world and an industrial urbanized world, thereby adding insights into how cultural conceptions of food might. affect food intake and the prevalence of overweight and obesity in rural areas. Our research suggests that the children's imaginary food includes rejection of health and nutrition recommendations. We therefore believe that obesity related messages put forward by healthcare workers might be perceived as an attack on rural identity and way of life and actually undermine healthcare workers effort to treat and prevent childhood obesity. Therefore, we call for a more dynamic and contextualized health policy regarding child obesity that takes rural culture and experience into account. I think I will stop there and thank you so much for your time and attention.