



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

378.713
D46
WP-90-26

Working Papers Series

Working Paper WP90/26

October 1990

CONSUMERS' NUTRITIONAL ATTITUDES
AND PERCEPTIONS: A PILOT STUDY

by

Jeff Weersink
Shelley Allan
Tom Funk
Ellen Goddard

UNIVERSITY
of GUELPH

**Department of Agricultural Economics
and Business**

WAITE MEMORIAL BOOK COLLECTION
DEPT. OF AG. AND APPLIED ECONOMICS
1994 BUFORD AVE. - 232 COB
UNIVERSITY OF MINNESOTA
ST. PAUL, MN 55108 U.S.A.

University of Guelph
Guelph, Ontario
Canada
N1G 2W1

378.713
D46
WP-90-26

**CONSUMERS' NUTRITIONAL ATTITUDES
AND PERCEPTIONS: A PILOT STUDY**

By

Jeff Weersink
Shelley Allan
Tom Funk
Ellen Goddard*

WORKING PAPER WP90/26

Department of Agricultural Economics and Business
University of Guelph

October 1990

* M.Sc. graduate student, former M.Agr. graduate student, Professor and Associate Professor, respectively, Department of Agricultural Economics and Business, University of Guelph, Guelph, Ontario

WORKING PAPERS ARE PUBLISHED WITHOUT FORMAL REVIEW WITHIN THE
DEPARTMENT OF AGRICULTURAL ECONOMICS AND BUSINESS

WAITE MEMORIAL BOOK COLLECTION
DEPT. OF AG. AND APPLIED ECONOMICS
1994 BUFORD AVE. 332 COB
UNIVERSITY OF MINNESOTA
ST. PAUL, MN 55455

Table of Contents

Introduction.....	1
Methodology.....	2
Research Design.....	2
Survey Design.....	2
Questionnaire Design.....	3
Results.....	4
Demographics.....	4
Dietary Concerns.....	7
Health Issues.....	10
Food Safety.....	11
Osteoperosis.....	11
Sources of Information.....	12
Commercials.....	14
Secondary Non-Commercial.....	14
Primary Non-Commercial.....	14
Attitudes and Perceptions.....	15
Meats.....	16
Fats.....	18
Nutritional Information.....	20
Food Safety.....	22
Nutritional Value.....	23

Consumption Patterns.....	24
Change in Consumption.....	24
Reasons for Change.....	25
Concerns About Consumption.....	26
Affect on Health	27
Specific Foods.....	28
Red Meats.....	28
White Meats.....	29
High-Fat Dairy.....	30
Low-Fat Dairy.....	31
Cheese.....	32
Eggs.....	33
Summary and Conclusions.....	34
References.....	36
Appendix.....	37
Questionnaire.....	37

List of Figures

Comparison of Survey to Census.....	5
Present State of Health.....	6
Health Issues.....	8
Food Safety Issues.....	9
Dietary Concerns.....	10
Osteoperosis.....	11
Sources of Information.....	13
Attitudes Regarding Meats.....	17
Attitudes Regarding Fats.....	19
Attitudes Regarding Nutritional Information.....	21
Attitudes Regarding Food Safety.....	22
Attitudes Regarding Nutritional Value.....	23
Red Meats.....	28
White Meats.....	29
High-Fat Dairy.....	30
Low-Fat Dairy.....	31
Cheese.....	32
Eggs.....	33

List of Tables

Dietary Concerns.....	7
Sources of Information.....	12
Reasons for Change.....	25
Concerns About Consumption.....	26

SECTION 1

Introduction

Recently consumers have become increasingly conscious of their diet and the affect it may have on their health. Concerns about heart disease and cholesterol levels are two of the most common examples of this. Because of these concerns, consumers are switching away from foods they feel are unhealthy to foods they feel are healthier. There seems to be conflicting reports from different sources as to which foods are healthy and which are not. New research conflicts with old research and foods which we once thought were healthy are now supposedly unhealthy. This has led to confusion among consumers as to what sources of nutritional information are reliable, and what foods are healthy.

Many producer groups and marketing boards are interested in what the consumer believes are healthy foods and which sources of nutritional information they feel are reliable. Thus, the objective of this study is to examine and evaluate the attitudes and perceptions of the public with respect to current nutritional and food safety concerns.

This paper concentrates on the results of a survey carried out in Guelph during March 1990. The methodology used in the survey is discussed followed by the results. First, the demographic characteristics of the survey respondents are compared to census data, and then consumer's nutritional and food safety concerns are discussed. The next section determines what sources of information consumers feel are reliable. Various attitude statements are then evaluated in an attempt to understand how consumers feel about various issues. In the last part of the analysis the consumption patterns of various foods are discussed. This includes changes in consumption over the past two years, the reasons for these changes, concerns about consumption, and how consumers feel various foods will affect their health. Following these results, a summary of key findings is provided.

SECTION 2

Methodology

Research Design

To increase the response rate it was felt that some personal contact would be helpful. There was, however, some concern of interviewer bias if personal interviews were used. When measuring something as topical as nutritional attitudes and concerns, consumers may want to appear to be part of the trendy health craze. Even though their commitment may not be genuine or translate into the appropriate dietary behaviour, they may say it is when the interviewer is present. Because of these factors a drop-off call-back questionnaire was used. The questionnaires were dropped off at selected homes to be completed at the respondents' leisure and picked up at a prearranged time several days later.

To meet the objectives of the study the research was designed primarily as a descriptive survey. This means that an attempt is made to describe people who share a common attitude or concern based on demographics or other attitudes.

Survey Design

The questionnaire was distributed to 250 people in Guelph during March 1990. A stratified random sample was used with the six city wards being the stratification variable. Two polls were randomly selected from the six wards for a total of 12 polls. Of the 250 questionnaires dropped off, 202 were picked up. This gives a response rate of approximately 80%. With this sample size, and using a 95% level of confidence, the margin of error when making inferences about the Guelph population is +/-7%.

Questionnaire Design

There were five major sections to the questionnaire: food and diet concerns, sources of nutritional information, attitudes and perceptions, consumption patterns, and demographics.

The first section concentrated on food and diet concerns. Respondents were first asked to rate their concern on various current issues with food quality and safety being one of them. Next they were asked to rate their concern over eight specific diet related concerns. These concerns ranged from developing heart disease to consuming chemical additives.

The next section on health information was an attempt to discover which sources of nutritional information consumers feel are reliable and how often they are used.

In the third section an attempt to measure consumers' nutritional attitudes was made. Respondents were given 20 statements and asked to rate their agreement with these statements on a scale ranging from strongly agree to strongly disagree.

The consumption patterns of consumers were measured in the fourth section. First, consumers were asked how their consumption of ten different foods has changed over the past two years. If their consumption had changed they were given a choice of six reasons as to why it has changed. Then they were given six concerns to choose from regarding consumption of each of the foods. Finally they were asked how they felt their health would be affected by consumption of each food.

In the final section, the demographics of those who answered the survey were established. The usual demographics such as age, education, income, sex, and marital status were asked. In addition consumers were asked to rate their present state of health from excellent to poor.

SECTION 3

Results

Demographics

To evaluate how representative our sample is of the Guelph population we can compare our demographics to the demographics obtained in the 1986 census. The percentages of people in the different age categories, their marital status, and the overall ratio of males to females, matches very closely to the census data. These comparisons are shown in Figure #1.

Our sample also has a higher percentage of people with post-secondary education. This could be due to the timing of the survey during the school year, which would increase the chances of surveying a university student.

The remaining demographic for which we have no standard of comparison is peoples' opinion of their present state of health. Obviously, younger people feel they are healthier and older people feel they are in worse condition. There was no difference in opinions of their state of health based on age, sex, or income. It was surprising to find though that people with higher education felt their state of health was better and people with less education felt their health was average or below average. The number of people in each state of health is shown in Figure #2 . As can be seen over 65% of the consumers surveyed felt their present state of health was above average with only a small number considering themselves below average. This could be because of two reasons. Either this sample is in a very good state of health or people are overestimating their current state of health.

Figure #1-Comparison of Survey to Census

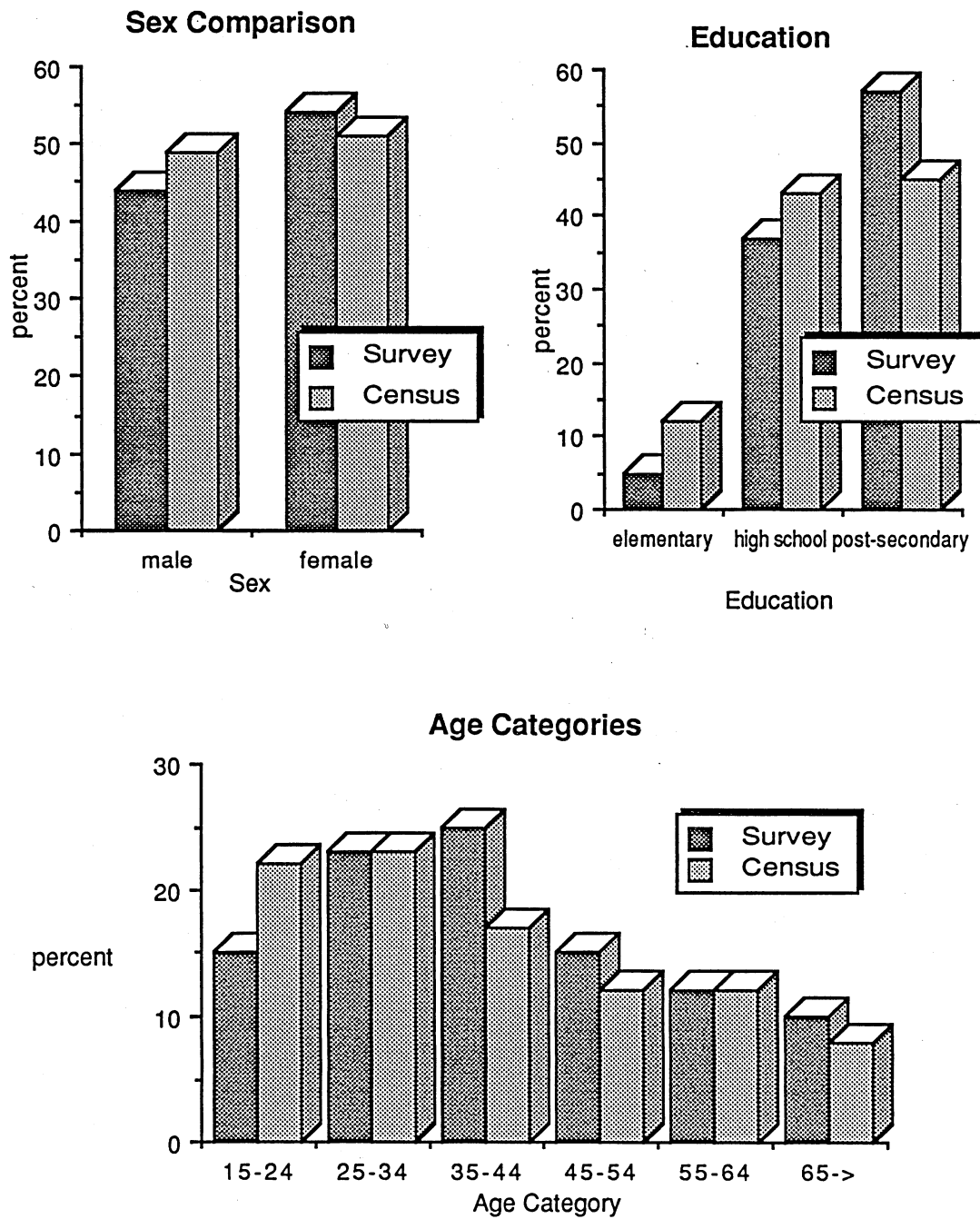
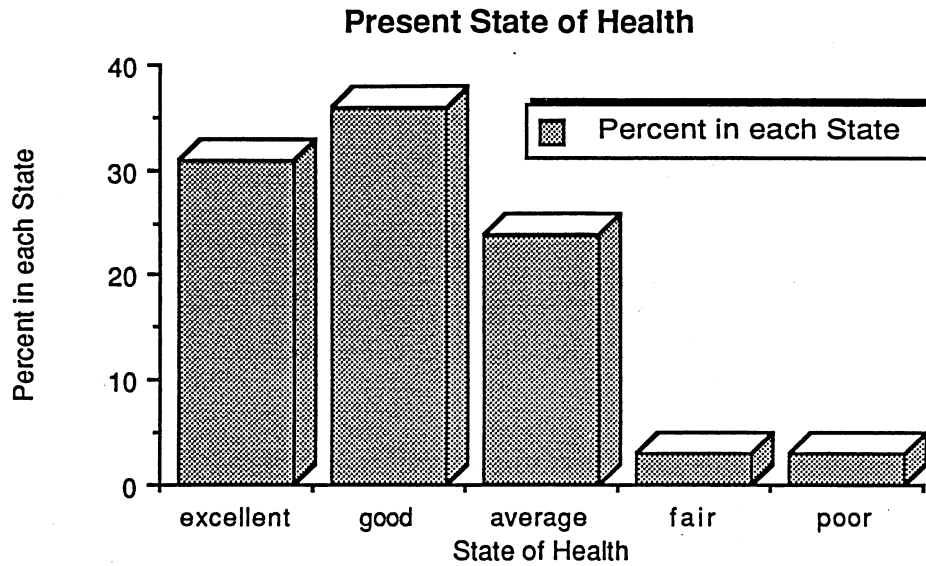


Figure #2-Present State of Health



These demographic characteristics are used in the remainder of this report to discriminate between groups of people as to where they obtain nutritional information, general attitudes about foods, and concerns about consumption of various foods and hence changes in consumption.

Dietary Concerns

In the first part of the survey, consumers were asked to rate their concern about eight different dietary issues on a scale ranging from very concerned to not concerned. It is reasonable to expect some of these concerns to be related to each other. Thus, if a consumer is very concerned about chemical contaminants it is likely that the same consumer is also very concerned about chemical additives. By using factor analysis these concerns can be grouped into two major categories. The first group are health related concerns and the second contains food safety concerns as the table below shows.

Table #1 Dietary Concerns

<u>Health Issues</u>	<u>Food Safety Issues</u>
heart disease	chemical contaminants
cancer	chemical additives
weight problems	food poisoning
high cholesterol	

A final dietary concern : developing osteoporosis was not explained by either group and thus it will be evaluated by itself. The reason it did not fit under health related concerns is because it is a disease which is more specific to older females and thus most males and a lot of younger females were not as concerned about this disease as the other health problems. It is also obviously not a food safety concern and thus is not a member of that group.

The individual levels of concern for the health issues are shown in Figure #3. Each of these have approximately the same proportion in each category, with approximately 75% of the consumers being concerned about each of these issues.

The levels of concern for each of the food safety issues are shown in Figure #4. The low level of concern regarding food poisoning (40%) is causing a lower average level of concern in the food safety group than we would expect given the high degree of concern over chemical issues.

Figure #3- Health Issues

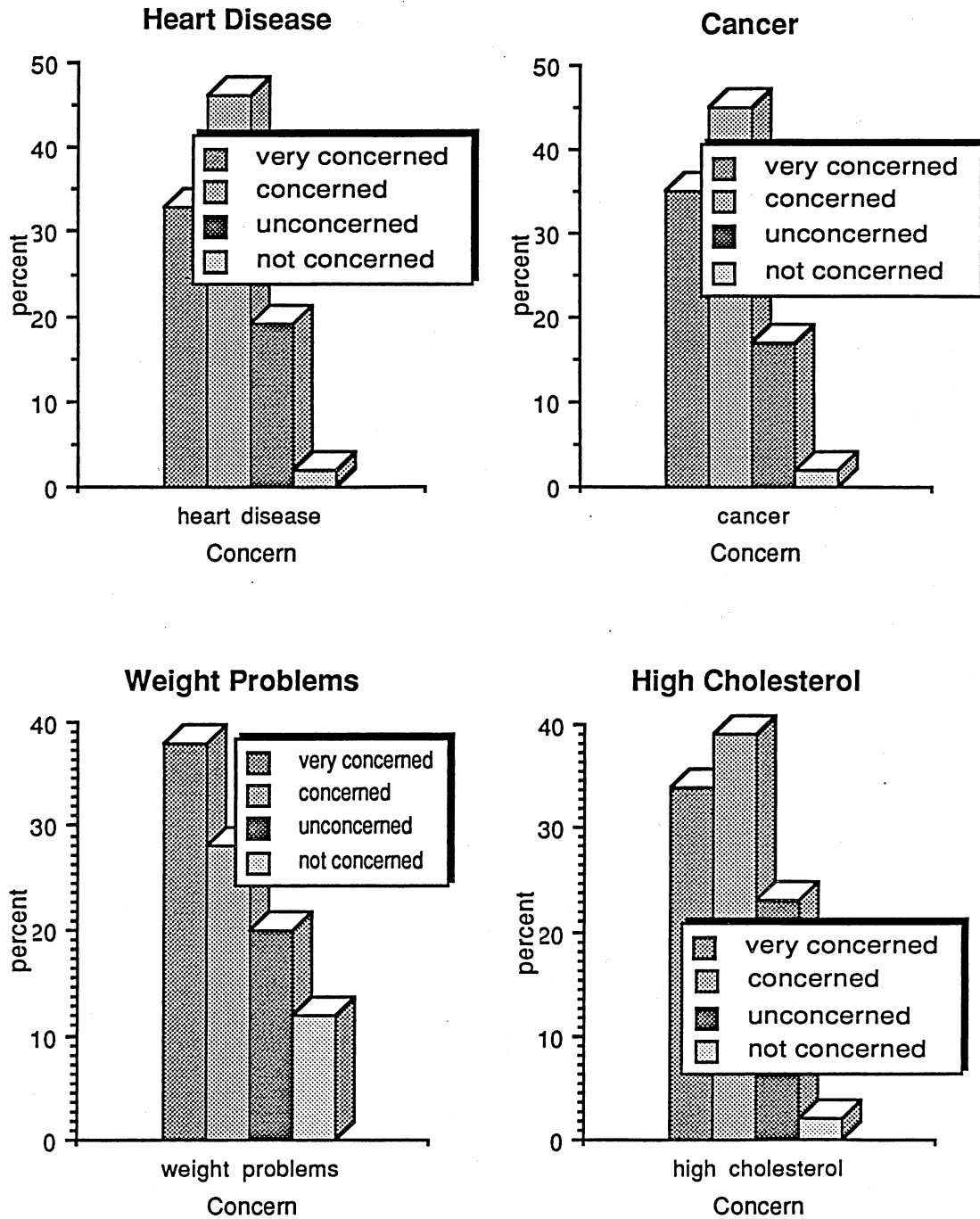
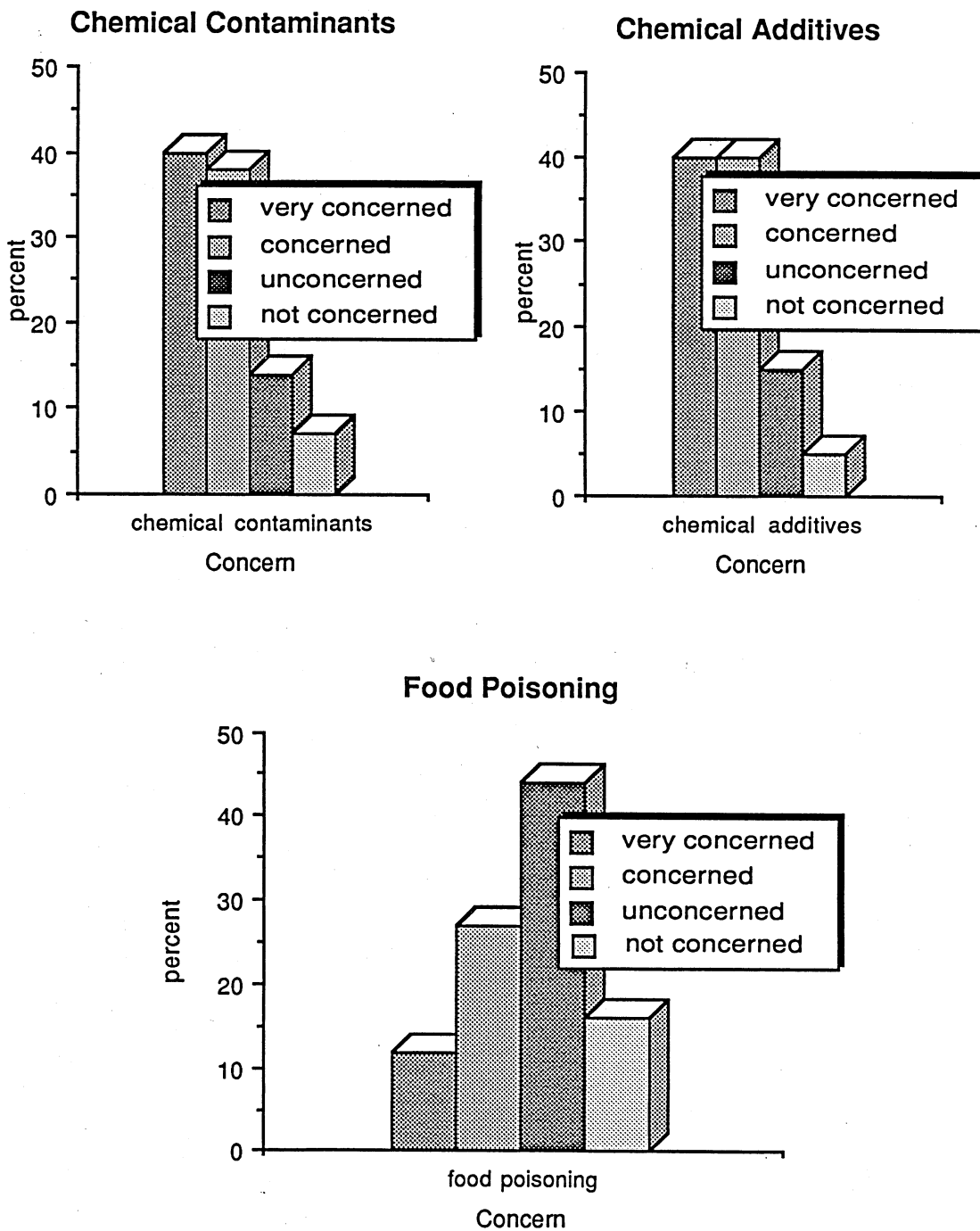
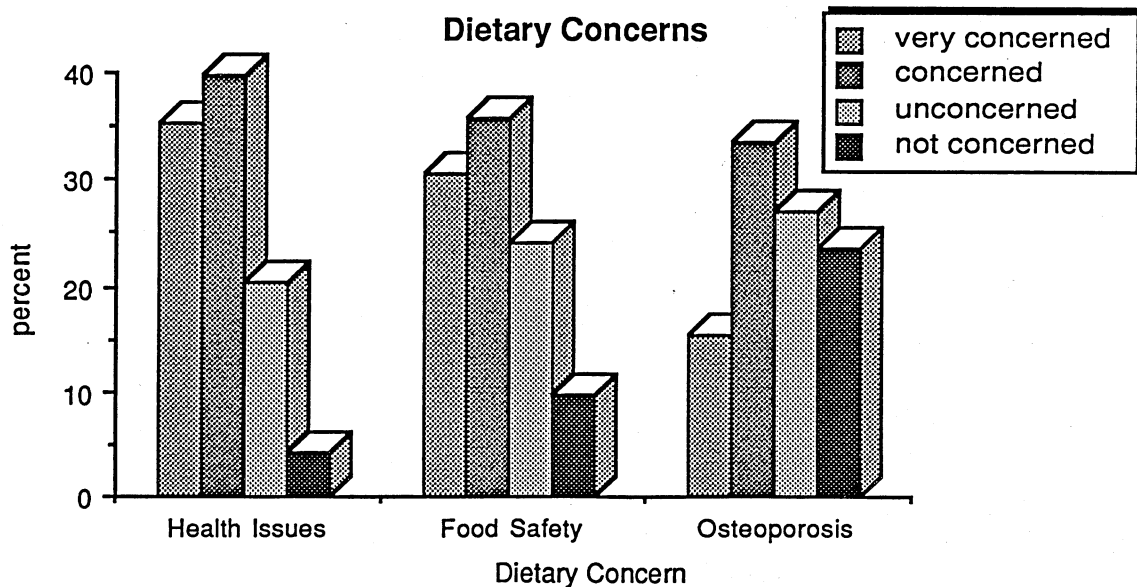


Figure #4- Food Safety Issues



Consumers were most concerned about heart disease, cancer, chemical contaminants, and chemical additives. The average levels of concern for the two major groups as well as for osteoporosis are shown in Figure #5.

Figure #5- Dietary Concerns



Health Issues

As with osteoporosis females were significantly more concerned about health related issues than males. There were also more middle-aged people concerned with these issues than either younger or older people. People who consider themselves in excellent or good health were also less concerned with these issues than people in fair or poor health. Education, marital status, and income had no effect on peoples concern over these issues.

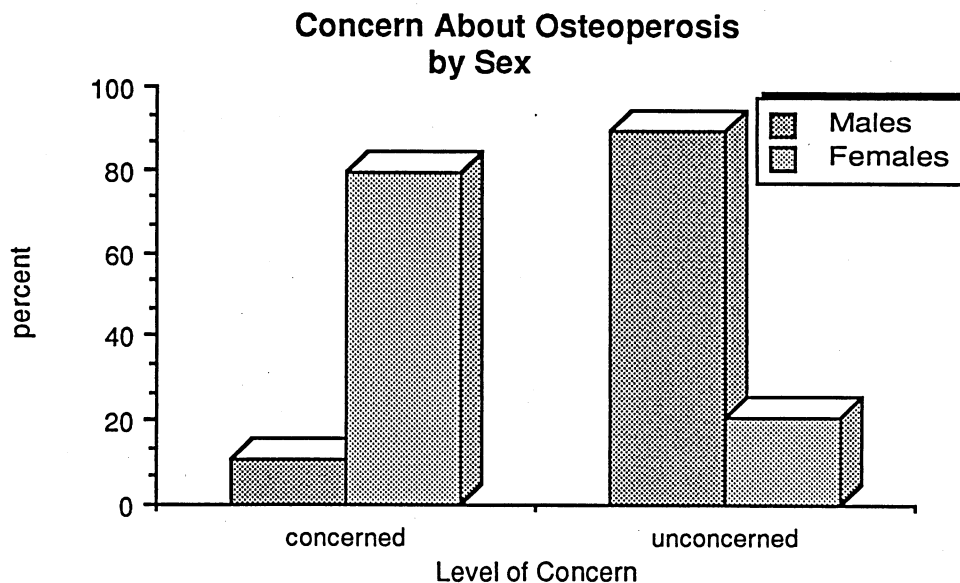
Food Safety

Again, more females were concerned about food safety issues than males, but with a smaller difference than with osteoporosis or health issues. Consumers with post-secondary education were more concerned about food safety which is probably due to their increased awareness of these issues. People under 35 were also much more concerned about these issues than people over 55. This is again probably because of their higher level of awareness of these issues. In addition, consumers who considered themselves in excellent health showed more concern than those in fair or poor health and people in the two higher income categories (\$35,000-75,000) and (\$75,000->) were more concerned about these issues than people who earned less than \$35,000.

Osteoporosis

Forty-eight percent of the consumers were concerned about developing osteoporosis. As mentioned, this is because it occurs more in females and thus only this portion would be concerned about developing it. As can be seen in Figure #6 almost 90% of males are not concerned and 80% of females are concerned.

Figure #6- Osteoporosis



Sources of Information

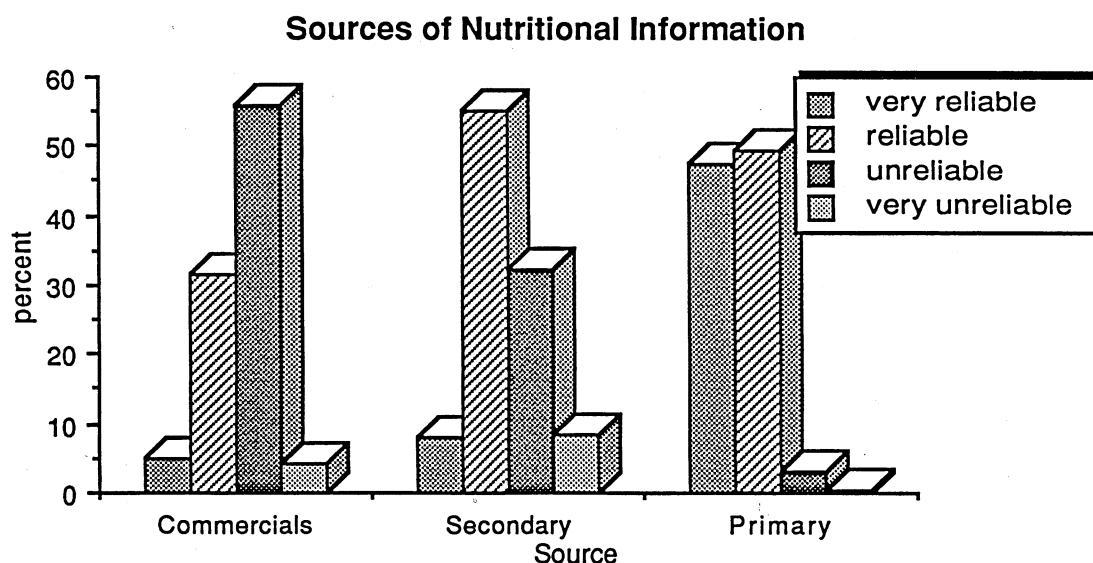
This section was used to discover what sources of information consumers consider reliable. Each respondent was given 16 different sources of information and asked to rate each on a scale from very reliable, to very unreliable. It would be reasonable to expect some of these sources of information to be related to one another. So if a consumer said one source was unreliable there is a good chance that they felt other similar sources were also unreliable. Through factor analysis it was discovered that there are three main sources of information. These are commercial, primary non-commercial, and secondary non-commercial. The given sources of information were grouped under these three main sources in the following way.

Table #2- Sources of Nutritional Information

<u>Commercials</u>	<u>Primary Non-Commercial</u>	<u>Secondary Non-Commercial</u>
magazine advertisements	family doctor	magazine articles
newspaper advertisements	dietician	newspaper articles
radio advertisements	government sponsored	radio commentaries
T.V. advertisements	food labels	T.V. programs
diet centres	books	friends & family schools

From this point on these three major sources will be referred to rather than each source individually. The perceived reliability of each of the groups of sources is shown in Figure #7.

Figure #7



As expected the primary non-commercial sources of information were felt to be the most reliable. Ninety-six percent of the consumers felt this was either a very reliable or reliable source of nutritional information. These sources varied from a low of 84% reliability expressed for food labels to a high of 96% reliability of doctors. Secondary non-commercial sources were the second most reliable with 65% of those surveyed saying these are reliable sources. These ranged from magazine articles with 55% of consumers saying they are reliable to schools which 77% of the people claiming they were reliable. Commercials were felt to be reliable by only 29% of the consumers. These ranged from magazine advertisements at 27% to diet centres at 31%.

Commercial

Regardless of peoples' demographic characteristics, they felt commercials were an unreliable source of nutritional information. There was such a small percentage of people who felt commercials were reliable that it was difficult to accurately compare them to the majority that felt they were unreliable.

Secondary Non-Commercial

Secondary non-commercial sources were felt to be the second most reliable source of information. More people under the age of 35 felt this was a reliable source than people over 55. Over 70% of younger people felt this was reliable compared to 47% of older consumers. Almost 70% of females felt this was a reliable source of information as compared to only 53% of males who felt the same way. Consumer's income, education, marital status, or their present state of health had no effect on whether they felt this was a reliable source of information.

Primary Non-Commercial

As can be seen in Figure #7 over 95% of consumers felt this was either a very reliable or reliable source of information. Because of the small percentage of people who felt this source was unreliable it made it difficult to compare with those that felt it was a reliable source with any significance.

Attitudes and Perceptions

In this section consumers were given 20 statements and were asked to rate their agreement towards them on a scale ranging from definitely agree to definitely disagree. This was done in an attempt to measure consumers' attitudes and perceptions on various nutritional issues. Factor analysis was tried on these statements in an attempt to group them under similar topics. This, however, proved to be not very useful.

To carry out further analysis, the answers were recoded into disagree, neutral, and agree. Statements were analyzed individually but they will be reported as groups of related statements. These groups will be generally classified as meats, fats, nutritional information, food safety, and nutritional value. The key findings in each of the areas are as follows.

Meats

*meat should be included in a balanced diet

-over 80% agreed

-of the people that disagreed, most were middle aged

*pork has less fat than beef

-76% disagree

-most of the people who disagreed were middle aged

*avoiding meats is a good way to reduce fat intake

-53% agree

-more females disagreed (48%)

-while more males agreed (66%)

*vegetarians are healthier than nonvegetarians

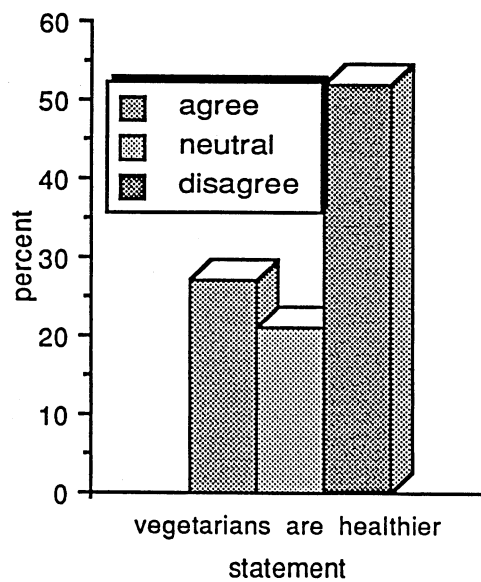
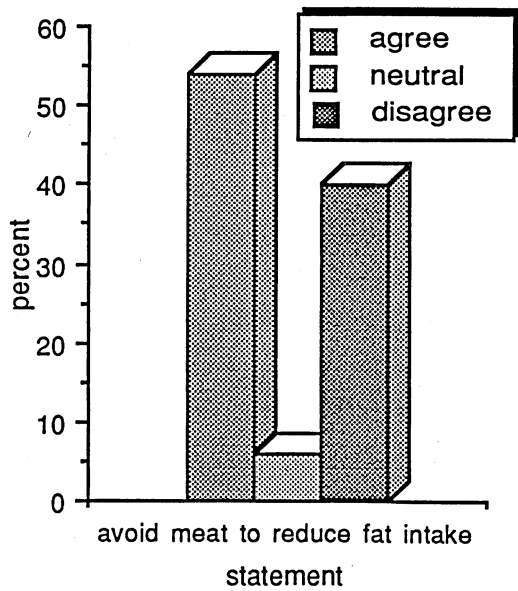
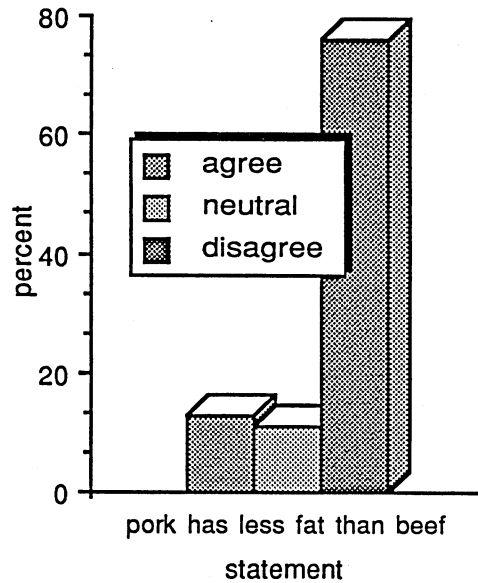
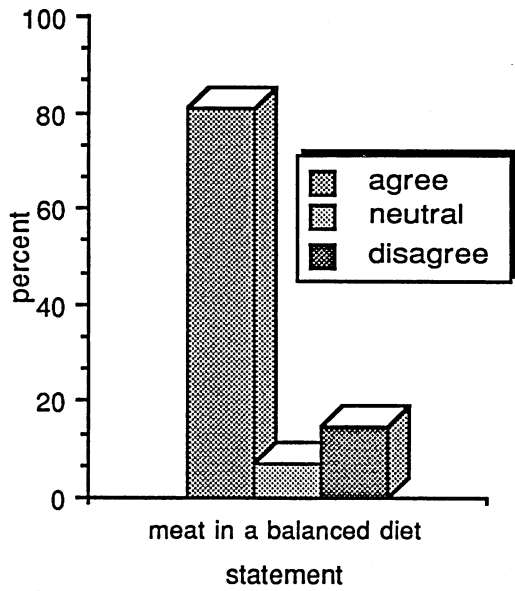
-27% agree

-52% disagree

-most of the large neutral category were females in the middle age group

-people with post-secondary education agreed

Figure #8 - Attitudes Regarding Meats



Fats

*butter should be avoided

-40% agree

-52% disagree

-middle aged people agreed

-the young and the old disagreed

-the proportion of females that agree to those that disagree is almost equal

*homo milk is unhealthy because of its butterfat content

-60% of the consumers agreed

-younger and middle aged people agreed with this more than older people

-those with post-secondary education were more likely to agree with this than people with less education

-there was no difference between the sexes over this statement

*eliminating fatty foods may help prevent heart disease

-ninety percent of the consumers agreed

*cooking fats and oils contribute more fat to your diet than meats

-52% agree

-38% disagree

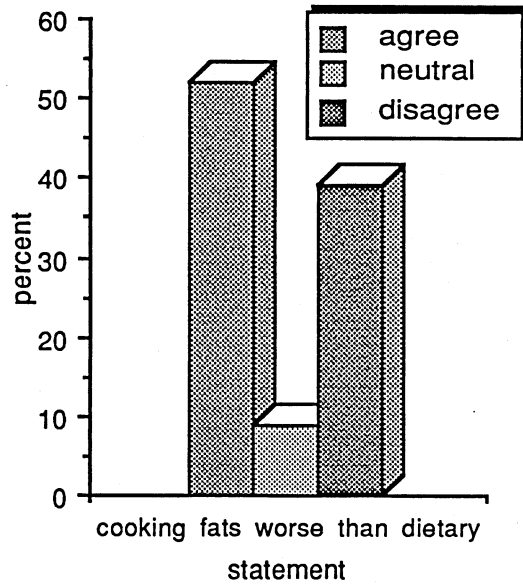
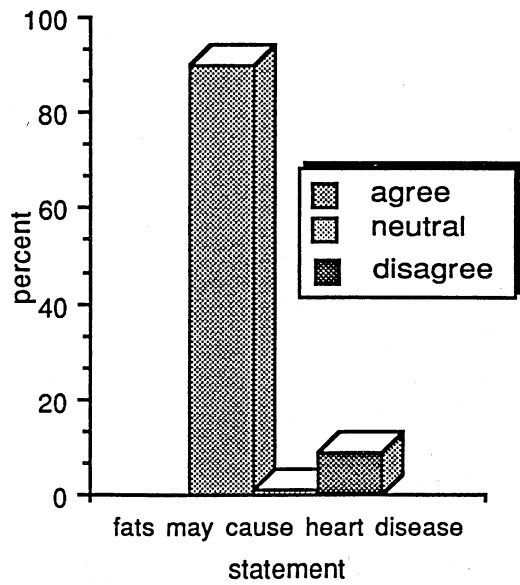
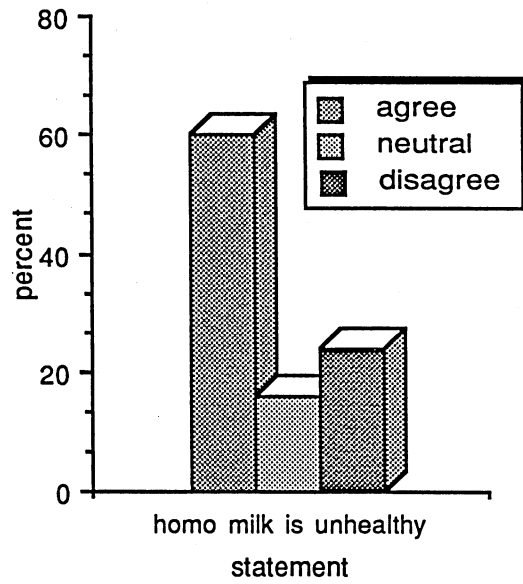
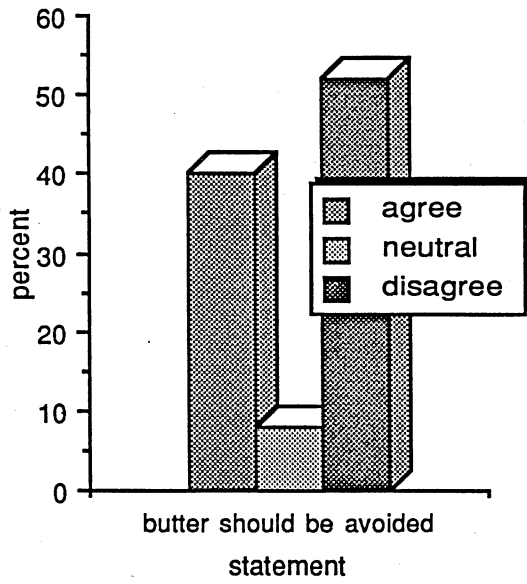
*a fat free diet is good for your body.

-46% agree

-44% disagree

-no difference between the type of person who agrees or disagrees with either of these statements

Figure #9- Attitudes Regarding Fats



Nutritional Information

*media coverage on food safety issues has caused public paranoia about certain foods

-84% agree

*biased reporting from different interest groups has caused contradicting health messages

75% agree

-both of these have a very high percentage of people who agree with them.

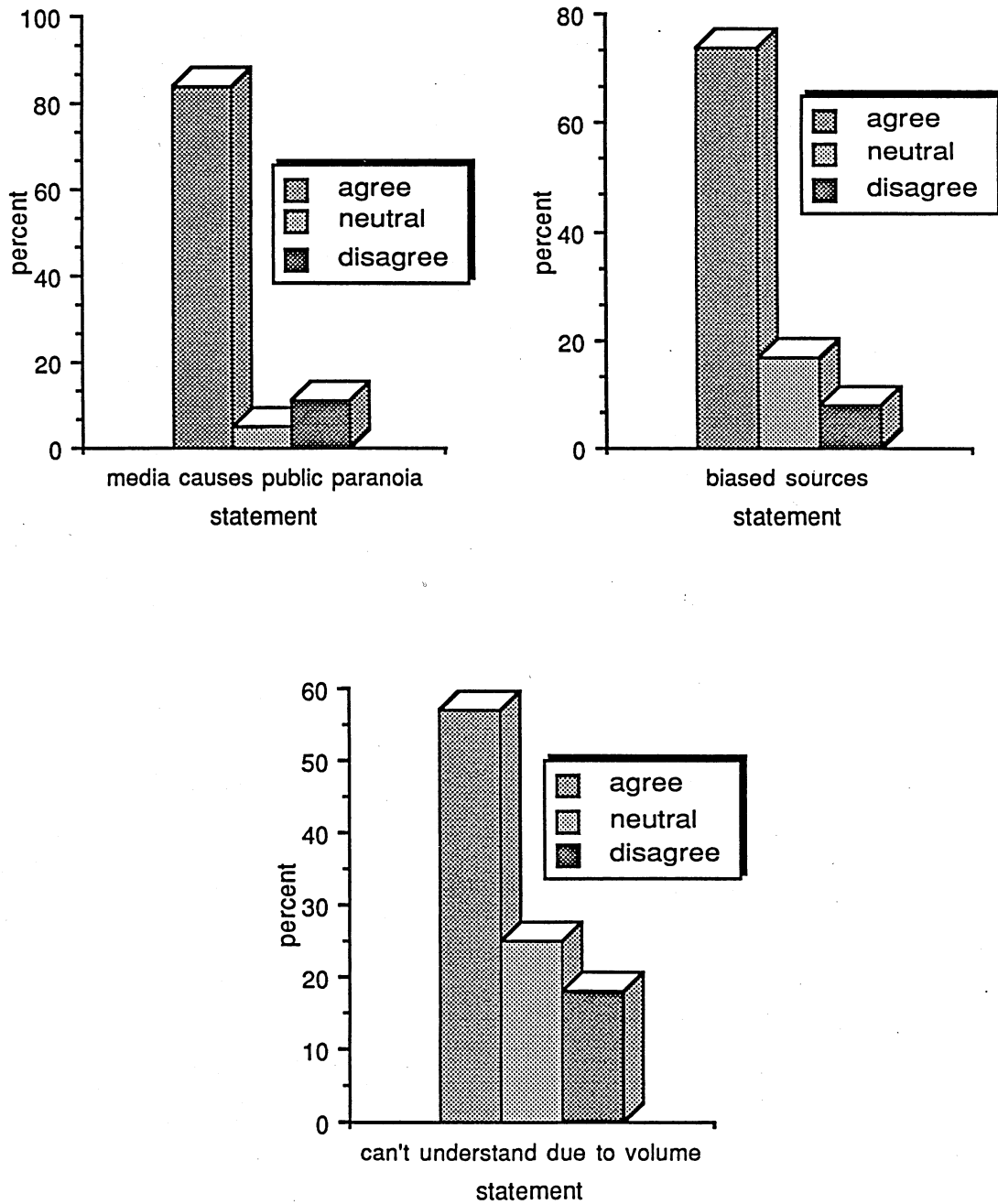
-difficult to differentiate between those that agree or disagree with these statements because of this

*people have problems understanding health issues because of the volume of information

-57% agree

-more males disagreed with this statement than females

Figure #10- Attitudes Regarding Nutritional Information



Food Safety

*tend to be concerned about a food safety issue for a short time but then resume their normal diet

-46% agree

-40% disagree

*research a food safety issue before they resume eating that food

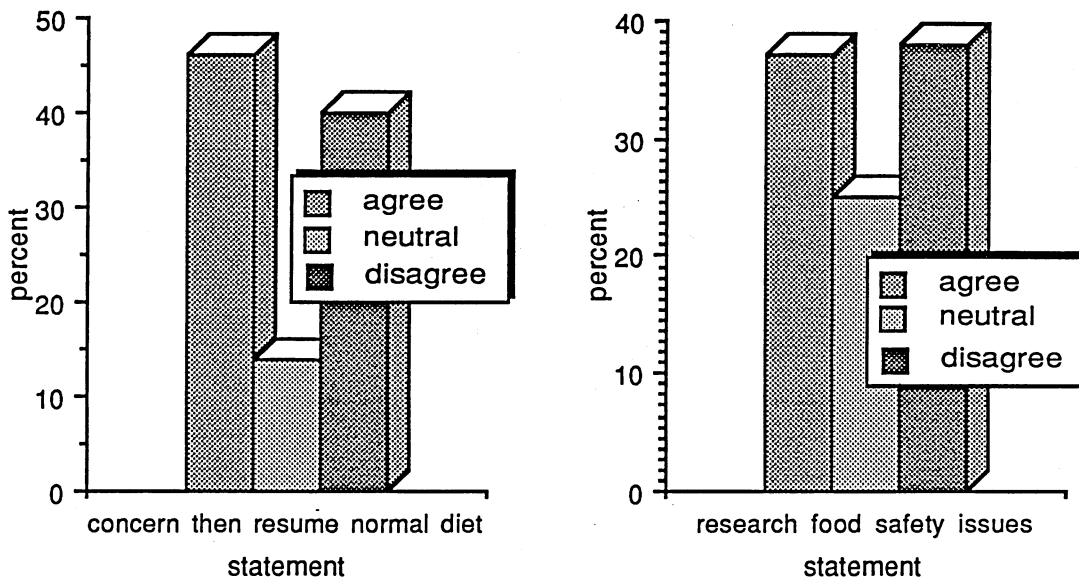
-37% agree

-38% disagree

-more females disagreed with this statement

-a large number of males (34%) were neutral or did not know

Figure #11- Attitudes Regarding Food Safety



Nutritional Value

*food prices are so high that their nutrition is suffering

-85% disagree

-more females than males disagreed

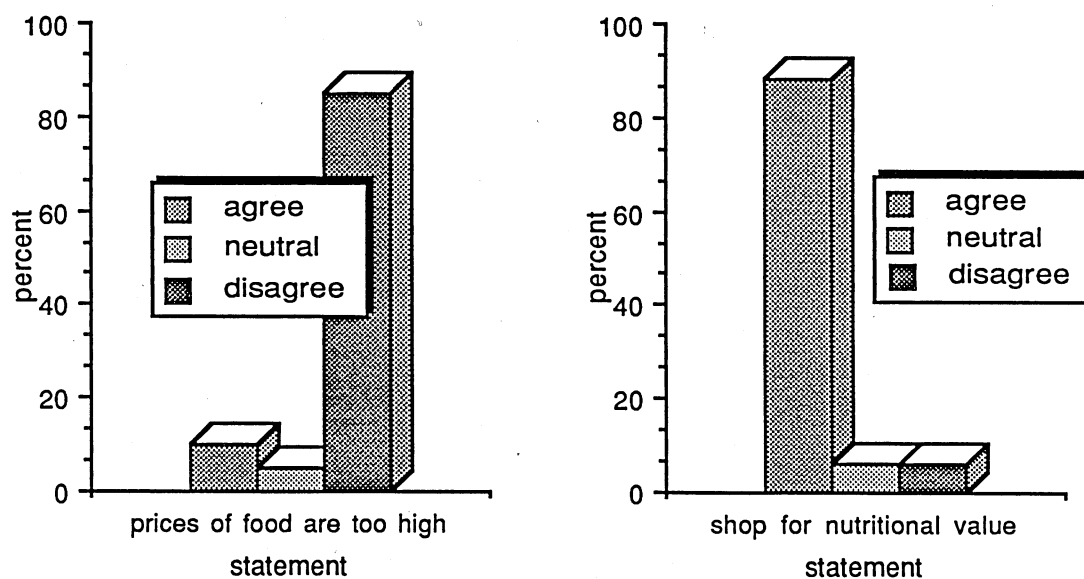
*when shopping did they consider the nutritional value of foods

-90% agree

-more females than males agreed

-in both statements males make up almost all of the neutral category

Figure #12- Attitudes Regarding Nutritional Value



Consumption Patterns

In this section consumers were asked four questions concerning each of the following ten foods: cheese, eggs, butter, ice cream, milk, chicken, turkey, beef, pork, and yogurt. Peoples' responses about some foods were very similar to their responses concerning other foods. Because of this they will be grouped together and discussed as one food group rather than individually. If there is an area where they are not similar it will be mentioned, otherwise it can be assumed that consumers responded the same for both foods in the group. The groups are: red meats: beef and pork, white meats: chicken and turkey, low-fat dairy products: milk and yogurt, high-fat dairy products: butter and ice cream, and individually cheese and eggs.

Change in Consumption

First consumers were asked how their consumption of these foods has changed over the last two years. They were given five alternatives ranging from increasing a lot to decreasing a lot. Very few people chose the extreme alternatives for any of the foods. The percentage of consumers in each category is shown below. These changes are compared to actual per capita changes in consumption over the same time period. We can not compare the actual amounts to the percentage of people who changed their consumption but the general direction should be the same. Thus, if 14% of consumers said their consumption of eggs has decreased, then the actual consumption of eggs should have decreased as well.

Reasons for Change

The consumers were then asked if they had changed their consumption, what was the reason for doing so. They were given the following six alternatives: weight concern, medical advice, nutritional value, price, high cholesterol, and change in family size. They could choose more than one of these if they so desired. Concern about weight was only a reason for changing consumption in the high-fat dairy foods. Medical advice, and price were not major reasons for change in any of the foods. The percentage of people who mentioned the reason for change is given below for each of the foods. The more notable reasons are highlighted for each food. The direction of change was different for the different reasons as well as the different food categories. The increases or decreases in consumption as well as the reasons for these changes will be discussed more specifically in each food area.

Table #3 Reasons for Change

	Red Meats	White Meats	High-Fat Dairy	Low-Fat Dairy	Cheese	Eggs
Reasons for Change						
Weight	8	3	29	9	13	13
Medical Advice	15	13	14	13	16	13
Nutritional Value	17	41	8	36	30	23
Price	12	15	10	6	5	3
High Cholesterol	31	4	23	3	18	29
Family Size	17	24	16	33	18	19

Concerns About Consumption

Next consumers were asked what concerns they had about eating each of the foods. Their choices were: food contaminants, calories, nutritional value, fat content, price or none of the above. Again they were able to choose more than one response. Surprisingly calories, nutritional value and price were not major concerns with most of the foods. It is surprising that calories are not a concern since fat content is the greatest concern in almost all of the foods. It should be noted that there could be some ambiguity associated with the food contaminants concern. It was not specified whether this implies chemical additives such as growth hormones and antibiotics or other ingredients added during processing or this could also be interpreted as a bacteria such as salmonella. The major concerns for each of the foods are highlighted in the table below. More will be discussed about these concerns as they specifically pertain to each food.

Table #4- Concerns About Consumption

	Red Meats	White Meats	High-Fat Dairy	Low-Fat Dairy	Cheese	Eggs
Concerns						
Contaminants	2 4	3 1	9	11	14	18
Calories	5	3	15	5	12	6
Nutritional Value	5	10	7	7	5	7
Fat Content	3 7	15	3 9	16	3 0	4 4
Price	14	6	15	9	2 5	6
None of the Above	15	3 6	15	5 3	15	18

Affect on Health

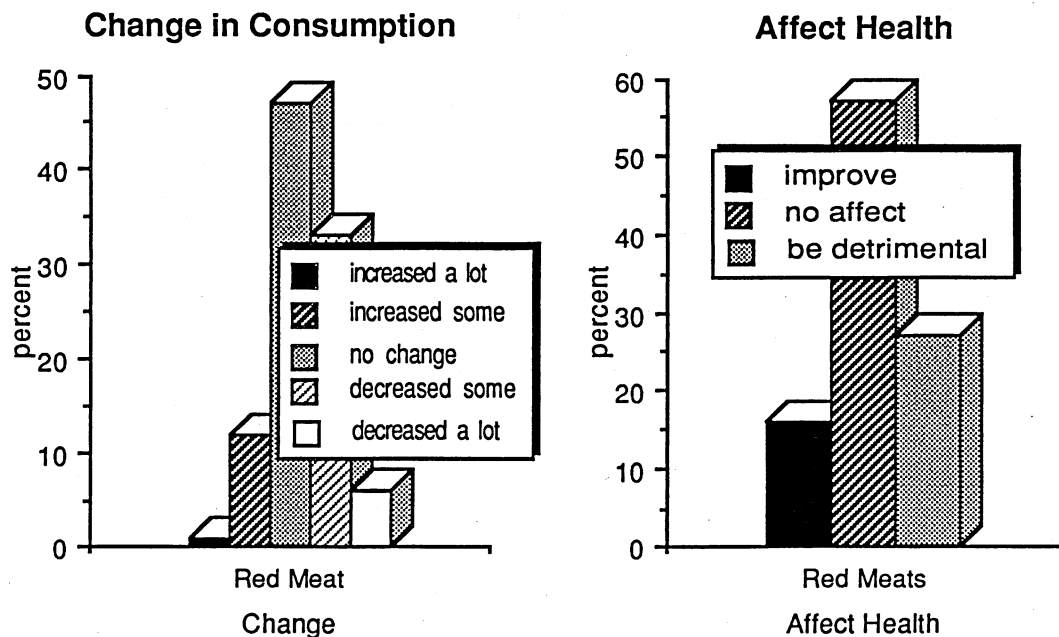
The last question in this section asked consumers how they felt consumption of these foods would affect their health. They were given three alternatives: improve, not affect, or be detrimental. Most consumers felt their health would not be affected by consuming these foods. Cancelling out those that felt the food would be detrimental with those that felt it would improve their health we can come up with an overall perception about how it would affect their health. After doing this eggs, red meats and high-fat dairy products were felt to be detrimental while white meats, cheese and low-fat dairy products were felt to improve their health. The way consumers felt each of the foods would affect their health is shown in the next section where the foods are discussed individually.

Specific Foods

Red Meats- Beef and Pork

Overall, 26% of consumers said their consumption of red meats has decreased. Compared to the actual per capita consumption, beef has decreased 3% while pork consumption has increased 5%. Younger consumers who felt they were in a better than average state of health have increased their consumption of red meats. Middle-aged females said their consumption of these meats has decreased in the last two years. The most important reason for change has been because of the high cholesterol levels these meats are felt to contain, which was expressed by 31% of the consumers. There is also a high degree of concern (37%) regarding the fat content and contaminants (24%) of these meats. As could be expected, consumers that had decreased their consumption felt these foods were detrimental to their health. This means middle aged females felt they would be detrimental whereas younger people felt they would improve their health. An unexpected result occurred with those that felt consumption of beef would improve their health. Of this group, 40% still decreased their consumption even when they said it would improve their health

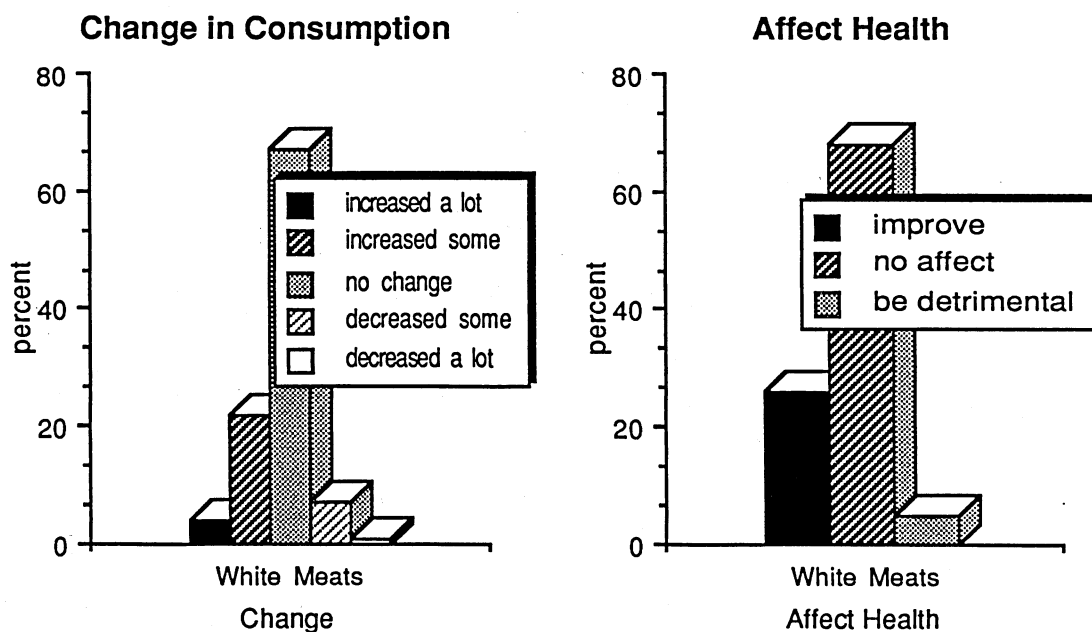
Figure # 13 -Red Meats



White Meats- Chicken and Turkey

In the last two years consumers said that overall their consumption of white meats has increased. This is consistent with the actual change in consumption in which turkey has increased 7% and chicken has increased 10%. The major reason for increase is the positive nutritional value associated with these foods. This reason was expressed by 41% of those consumers who said their consumption had changed. A secondary reason for change is a change in family size which was mentioned by 24% of the people. The main concern about consumption of white meats is contaminants which was mentioned by 31% of the consumers. There was no demographic difference between those that increased or decreased their consumption or between those that felt these foods would improve or be detrimental to their health.

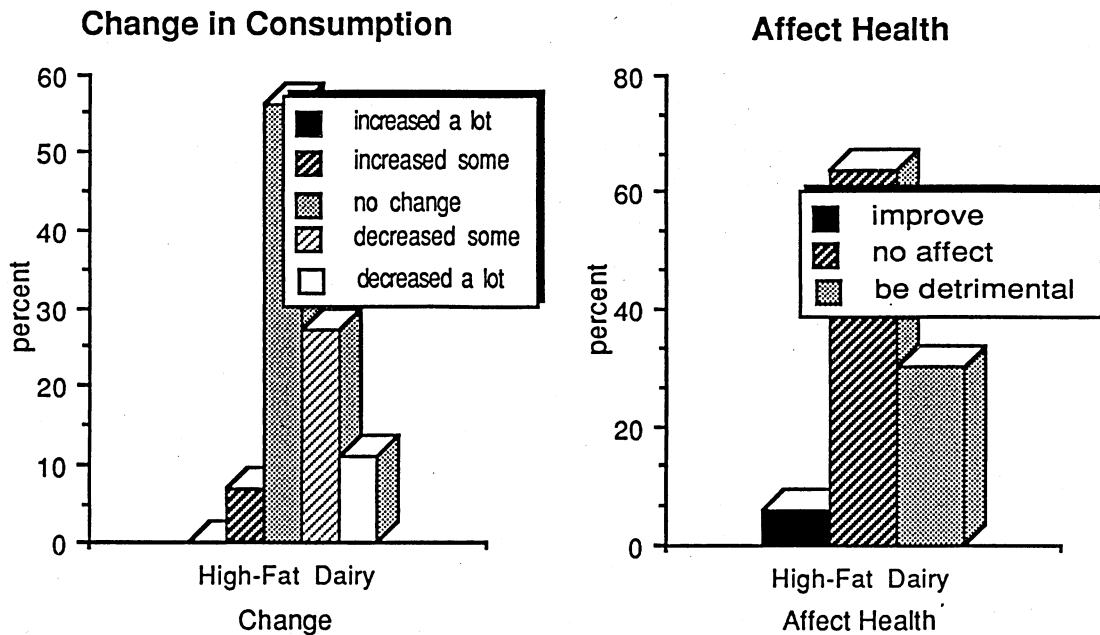
Figure #14- White Meats



High-Fat Dairy Products- Butter and Ice Cream

These two foods have seen the largest decrease in consumption of the foods mentioned in this report. Overall, 34% of consumers said they are eating less of this group of foods. The actual consumption of butter has decreased by 2.5% and ice cream has only decreased by 0.3%. Concern over gaining weight was mentioned by almost 30% of those that decreased their consumption as one of the reasons for doing so. This is the only food group where concern about gaining weight was mentioned as a major reason for changing consumption of that food. High cholesterol was also mentioned as a secondary reason for decreasing consumption. Fat content was mentioned by almost 40% of the consumers as a significant concern in consumption of these foods. As expected, the people that felt consumption of these foods would be detrimental to their health were also the ones that decreased their consumption. Since such a small percentage of consumers had increased their consumption and felt that these foods would improve their health it is hard to compare to the large number of people who have decreased their consumption. It was found that a higher number of females felt consumption of butter would be detrimental to their health than males.

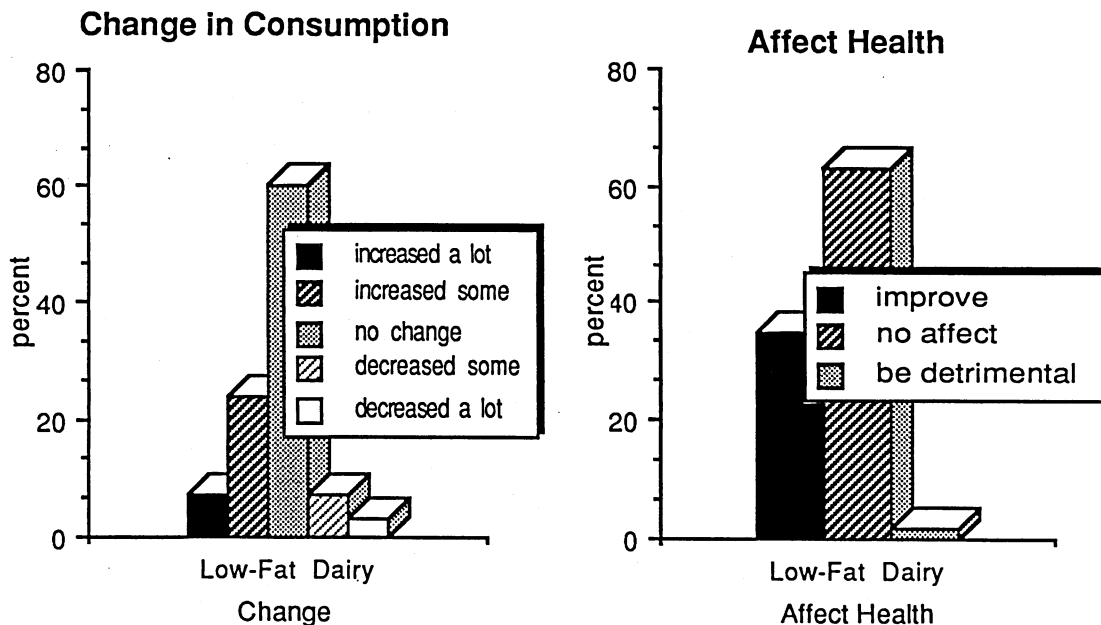
Figure #15- High-Fat Dairy



Low-Fat Dairy Products- Milk and Yogurt

This group is almost the opposite of the high-fat dairy group. These two foods have seen the highest increase in consumption by consumers out of all the foods mentioned in this study. These results are consistent with the actual change in consumption. Overall the actual consumption of milk has not changed but this is because the increase in the consumption of skim and 2% milk has been offset by the decrease in homo milk. The actual consumption of yogurt has increased 15.5% which is the largest change of the foods examined here. Younger people have increased their consumption whereas older people have decreased their consumption and the middle age group has not changed the amount they consume. The main reasons mentioned for this increase was the positive nutritional value that it is felt these foods contain and because of an increase in family size. There were no major concerns about consuming these foods and it was felt by 35% of the consumers that consumption of these products would improve their health. The same problem occurred here as with the high-fat dairy products. There were so few people who felt these foods were detrimental to their health that we could not compare them to the majority of people who felt the opposite way.

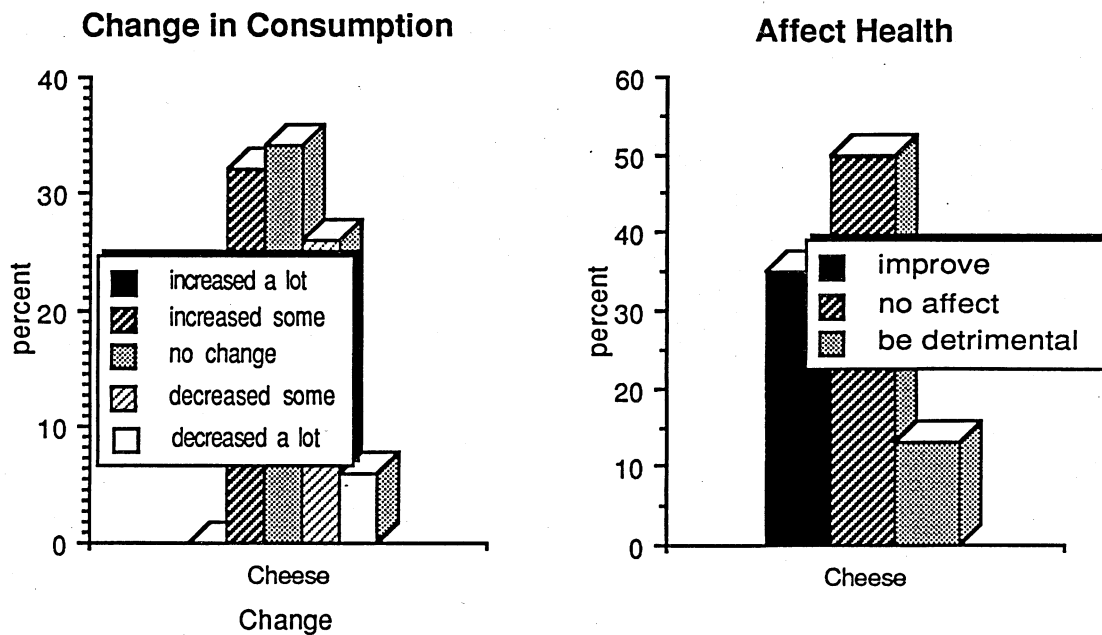
Figure #16- Low-Fat Dairy



Cheese

Those consumers that felt their consumption of cheese had increased over the last two years was offset by those that felt their consumption had decreased, and thus, there was no net change in cheese consumption. The actual consumption of cheese over the same time period has increased by 5.5%. The difference in these results could be because in the survey consumers were not asked a specific amount, just if they had increased or decreased their consumption. Of those that had decreased their consumption, the main reason for doing so was because of high cholesterol levels. The main concern about consumption of cheese was its fat content. This was followed by price which was a concern for 25% of the consumers. This is the only food in which price was mentioned as a concern. Younger people felt consumption of cheese would improve their health whereas middle aged people felt it would be detrimental. Consumers in an above average state of health and people with post-secondary education also felt consumption of cheese would improve their health.

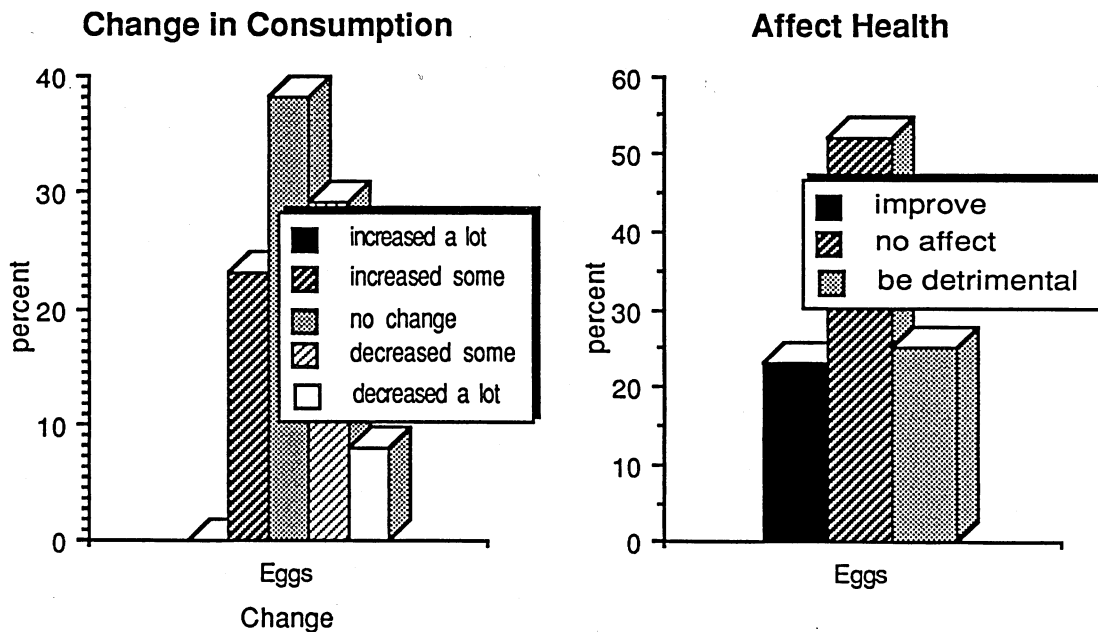
Figure #17- Cheese



Eggs

Overall, 14% of consumers said their consumption of eggs had decreased. There has actually been a 1.5% decrease in the consumption of eggs over the same time period. Younger consumers felt they were eating more eggs while middle aged, older and female consumers said their consumption had decreased. The main reason for a decrease in consumption was the concern over high cholesterol. Forty four percent of consumers were concerned about the fat content of eggs which is more than any of the other foods. Aside from this, there were no other major concerns about consuming eggs. Younger consumers and people in an excellent or good state of health felt consuming eggs would improve their health.

Figure #18- Eggs



SECTION 3

Summary and Conclusions

Dietary Concerns

The greatest dietary concerns are chemical additives and contaminants in food and developing cancer and heart disease. In a study done in 1981, 38% of consumers were concerned about chemical additives. This has more than doubled to 80% concern over these issues in this study. Females and people with post-secondary education show the greater concern for these issues. The increase in these concerns reflects the trend towards more organic and environmentally friendly products.

Sources of Information

Primary non-commercial sources such as the government, doctors and food labels were felt to be the most reliable sources of nutritional information. Almost all consumers felt that advertisements and commercials were the most unreliable sources. This is because they feel different interest groups (such as producer groups) give biased nutritional information. Most consumers also said they have problems understanding nutritional information because of the large volume of information they are exposed to.

Attitudes and Perceptions

Most consumers agree that meat should be included in a balanced diet. They also do not feel that there is much difference between pork and beef or between chicken and turkey. People try to avoid fats in their foods because they feel this may help prevent heart disease. The high-fat dairy products is an area where this is most prevalent. The majority of consumers say they consider the nutritional value of foods when they are shopping. They also disagree that their nutrition is suffering because of the high price of foods.

Consumption Patterns

Change in Consumption

Most of the consumers said that they did not change their consumption of foods a lot over the past two years. The largest decrease was in high-fat dairy products, followed by red meats and then eggs. The largest increase was in low-fat dairy products, followed by white meats and cheese.

Reasons for Change

High cholesterol was the major reason for decreasing consumption of red meats, eggs, and high-fat dairy products. Gaining weight was only mentioned as a reason for change with the high-fat dairy foods. The nutritional value of white meats, low-fat dairy products, and cheese was the main reason for increasing consumption of these foods. A change in family size was also mentioned for the low-fat dairy products and the white meats.

Concerns about Consumption

Calories and nutritional value were not concerns about consuming any of these foods. The fat content of eggs, high-fat dairy products, red meats, and cheese was the major concern of consuming these foods. Food contaminants was a concern for both the red and white meats. Price was only a concern for cheese consumption. While a large number of consumers had no concerns about consuming low-fat dairy products or white meats.

Affect on Health

Consumers felt that consumption of high-fat dairy products, red meats and eggs would be detrimental to their health. Whereas they feel that consumption of low-fat dairy products, white meats and cheese would improve their health

Consumers appeared to be consistent, in that foods which they had a lot of concerns about and that they thought would be detrimental to their health, they have decreased their consumption of, and the converse is also true. There does however, appear to be some confusion between fat, calories, and cholesterol. This is most evident in which foods they feel contain these and in the way consumers seem to group all three areas into one category.

References

Allan, Shelley, (1990). "Consuming Fears" Unpublished Report from Masters of Agricultural Business Degree. University of Guelph.

Educational Services, Health Protection Branch. Health and Welfare Canada, (1980) . "Food Additives: What Do You Think?" Report on Opinion Survey Conducted Summer 1979.

Statistics Canada (1988) . Apparent Per Capita Food Consumption in Canada, Part I-II."

UNIVERSITY of GUELPH

EXPLANATION OF THE SURVEY

Hello:

I am Shelley Allan, a graduate student at the University of Guelph, and as part of a term project, I am examining consumer's attitudes towards food. I would really appreciate your help in completing the enclosed questionnaire. It should take only 15 minutes of your time. Your response is completely confidential, your name is not identified with your questionnaire in any way.

To complete the questionnaire, read the questions carefully and circle the number that corresponds to your answer. Please answer as many questions as you can. Once you have completed the questionnaire, place it in your mailbox or outside your door, where it will be collected at the predetermined time.

If you have any questions, I am available at 846-0167 (local call), or my supervisor Dr. T.F. Funk at 824-4120 extension 3427.

Thank you for your time and cooperation.

TF Funk

T.F. Funk

Shelley Allan

Shelley Allan

FOOD ATTITUDE SURVEY

We are interested in your attitudes and opinions on various food issues. Please answer the questions as completely as possible. There are no right or wrong answers. Your answers are anonymous and will be used only in combination with others.

SECTION A: FOOD AND DIET CONCERNS

- 1) Listed below are a number of issues currently concerning the Canadian public. How would you describe your concern for these issues? Rank each issue by circling the numbers that best describes your feelings.

	Very Concerned 1	Somewhat Concerned 2	Somewhat Unconcerned 3	Not Concerned 4
Health Care	1	2	3	4
Inflation	1	2	3	4
Toxic Waste Disposal	1	2	3	4
Food Quality and Safety	1	2	3	4
Senior Citizens Care	1	2	3	4
Housing Costs	1	2	3	4
Unemployment	1	2	3	4
Drugs and Youth	1	2	3	4
Taxes	1	2	3	4
Sexual Discrimination	1	2	3	4

- 2) Now let's look at some specific diet related concerns. How concerned are you about the following? Rank each issue by circling the number that best describes your feelings.

	Very Concerned 1	Somewhat Concerned 2	Somewhat Unconcerned 3	Not Concerned 4
developing heart disease	1	2	3	4
developing cancer	1	2	3	4
developing osteoporosis	1	2	3	4
developing weight problems	1	2	3	4
developing food poisoning	1	2	3	4
developing high cholesterol	1	2	3	4
consuming chemical contaminants ...	1	2	3	4
consuming chemical additives	1	2	3	4

SECTION B: HEALTH INFORMATION

3) How would you rate the following in terms of providing reliable health information? Rate each of the following in terms of reliability by circling the appropriate numbers.

	very reliable 1	reliable 2	unreliable 3	very unreliable 4	don't know 5
family doctor	1	2	3	4	5
dieting centre	1	2	3	4	5
dietician	1	2	3	4	5
magazine articles	1	2	3	4	5
magazine advertisements	1	2	3	4	5
newspaper articles	1	2	3	4	5
newspaper advertisements	1	2	3	4	5
radio commentaries	1	2	3	4	5
radio advertisements	1	2	3	4	5
TV programs	1	2	3	4	5
TV advertisements	1	2	3	4	5
books	1	2	3	4	5
labels on food packages	1	2	3	4	5
friends and family	1	2	3	4	5
schools	1	2	3	4	5
government sponsored	1	2	3	4	5
(ie. Canada Food Guide)					

4) If you developed a health condition, such as heart disease and required accurate information on the condition, which of the following sources would you use? (PLEASE CHECK ALL THE SOURCES THAT YOU WOULD USE). Please circle the source you consider the MOST important. (PLEASE CIRCLE ONLY ONE).

	use		use		use
family doctor	___	newspaper advertisements	___	labels on food packages	___
dieting centre	___	radio commentaries	___	friends and family	___
dietician	___	radio advertisements	___	schools	___
magazines articles	___	TV programs	___	government sponsored	___
magazine advertisements	___	TV advertisements	___	(ie. Canada Food Guide)	___
newspaper articles	___	books	___		

5) During the past 3 months, how OFTEN did you:

	more than twice a week 1	twice a week 2	once a week 3	once a month 4	never 5
read an ingredient or nutrition label	1	2	3	4	5
watch a TV feature on food safety	1	2	3	4	5
listen to a food discussion on the radio	1	2	3	4	5
discuss your diet with your doctor	1	2	3	4	5
read an article on diet related diseases	1	2	3	4	5
consider fat content while making food choices	1	2	3	4	5
look for food specials	1	2	3	4	5
discuss food safety with friends or family	1	2	3	4	5

SECTION C:

Complete all sections of this question for each food before proceeding onto the next food listed. For example answer 7a, 7b, 7c and 7d for CHEESE before going on to EGGS.

- 6a) How has the amount you consumed of the following, changed over the past 2 years? It has: (CIRCLE ONE).

	Cheese	Eggs	Butter	Ice Cream	Milk
1. decreased a lot	1	1	1	1	1
2. decreased some	2	2	2	2	2
3. about the same	3	3	3	3	3
4. increased some	4	4	4	4	4
5. increased a lot	5	5	5	5	5

- 6b) If the amount has increased or decreased what were the reason for the change? (CIRCLE ALL THAT APPLY).

	Cheese	Eggs	Butter	Ice Cream	Milk
1. weight concern	1	1	1	1	1
2. medical advice	2	2	2	2	2
3. nutritional value	3	3	3	3	3
4. price	4	4	4	4	4
5. high cholesterol	5	5	5	5	5
6. change in family size	6	6	6	6	6

- 6c) Which of the following concerns you about eating this food? (CIRCLE ALL THAT APPLY).

	Cheese	Eggs	Butter	Ice Cream	Milk
1. food contaminants	1	1	1	1	1
2. calories	2	2	2	2	2
3. nutritional value	3	3	3	3	3
4. fat content	4	4	4	4	4
5. price	5	5	5	5	5
6. none of the above	6	6	6	6	6

- 6d) How do you feel that the consumption of this food will affect your health? (CIRCLE ONE).

	Cheese	Eggs	Butter	Ice Cream	Milk
1. improve	1	1	1	1	1
2. not affect	2	2	2	2	2
3. be detrimental	3	3	3	3	3

CONSUMPTION PATTERNS

	Chicken	Turkey	Beef	Pork	Yogurt
..... 1	1	1	1	1	1
..... 2	2	2	2	2	2
..... 3	3	3	3	3	3
..... 4	4	4	4	4	4
..... 5	5	5	5	5	5

	Chicken	Turkey	Beef	Pork	Yogurt
..... 1	1	1	1	1	1
..... 2	2	2	2	2	2
..... 3	3	3	3	3	3
..... 4	4	4	4	4	4
..... 5	5	5	5	5	5
..... 6	6	6	6	6	6

	Chicken	Turkey	Beef	Pork	Yogurt
..... 1	1	1	1	1	1
..... 2	2	2	2	2	2
..... 3	3	3	3	3	3
..... 4	4	4	4	4	4
..... 5	5	5	5	5	5
..... 6	6	6	6	6	6

	Chicken	Turkey	Beef	Pork	Yogurt
..... 1	1	1	1	1	1
..... 2	2	2	2	2	2
..... 3	3	3	3	3	3

SECTION D: ATTITUDES AND PERCEPTIONS

7) For the following statements please circle the number that represents your attitude or opinion.

	Definitely Disagree 1	Tend to Disagree 2	Neutral Do Not Know 3	Tend to Agree 4	Definitely Agree 5
a) Meat should be included in a balanced diet	1	2	3	4	5
b) Butter should be avoided	1	2	3	4	5
c) Pork has less fat than beef	1	2	3	4	5
d) Eggs should be limited to 4 per week	1	2	3	4	5
e) Homo milk is unhealthy because of its butterfat content	1	2	3	4	5
f) Eliminating fatty foods may help prevent the development of heart disease	1	2	3	4	5
g) Vegetarians are generally healthier than nonvegetarians	1	2	3	4	5
h) Avoiding meat is a good way to reduce fat intake	1	2	3	4	5
i) Cooking fats and oils (ie. butter, margarine, salad dressings and sauces) contribute more fat to your diet than meats	1	2	3	4	5
j) Cheese on hamburgers makes a healthy combination	1	2	3	4	5
k) Most people who are concerned about developing heart disease, are because of its existence in their family	1	2	3	4	5
l) Extensive media coverage on food safety issues has made the public paranoid about certain foods	1	2	3	4	5
m) Biased reporting from different interest groups accounts for the contradicting health messages in the media	1	2	3	4	5
n) The reason most people have problems understanding the health issues is because of the volume of information	1	2	3	4	5
o) I respond to a new health controversy by totally eliminating the food in question	1	2	3	4	5
p) I generally tend to be concerned about food safety issues for a short time after an announcement but then resume my normal diet	1	2	3	4	5
q) I try to research any new food safety issue before eliminating the food in question or resuming consumption ..	1	2	3	4	5
r) When shopping I consider the nutritional value of the food ..	1	2	3	4	5
s) A fat free diet is good for your body	1	2	3	4	5
t) Prices of food are so high that my nutrition is suffering	1	2	3	4	5

SECTION E: DEMOGRAPHICS

Finally, here are several questions to help us interpret the information you have given us. For this section, please answer as many questions as you can. Remember, this information is confidential.

8) How would you rate your PRESENT HEALTH? (CIRCLE ONE).

1. excellent
2. good
3. average
4. fair
5. poor
6. don't know

9) Which of the following would BEST describe your highest level of EDUCATION? (CIRCLE ONE).

1. public school
2. high school
3. university/college
4. other (please specify) _____

10) Please indicate your sex: Male _____ Female _____

11) Into which of the following AGE categories do you fall? (CIRCLE ONE).

1. 15 - 24
2. 25 - 34
3. 35 - 44
4. 45 - 54
5. 55 - 64
6. over 65

12) If there is more than one member of your household, how many of these people fall into each of these age categories?

1. under 5 years _____
2. 5 - 9 years _____
3. 10 - 14 years _____
4. 15 - 24 years _____
5. 25 - 34 _____
6. 35 - 44 _____
7. 45 - 54 _____
8. 55 - 64 _____
8. over 65 _____

13) What is your marital status? (CIRCLE ONE).

1. single (never married)
2. married (excluding separated)
3. divorced/separated
4. widowed

14) What are the number of incomes in the household? _____

IF NONE GO TO QUESTION 15.

How many are part-time _____ full-time _____

15) What is your household's estimated total annual income before taxes and deductions? (CIRCLE ONE).

1. < \$10,000
2. \$10,001 - \$15,000
3. \$15,001 - \$25,000
4. \$25,001 - \$35,000
5. \$35,001 - \$50,000
6. \$50,000 - \$75,000
7. \$75,000 - \$100,000
8. over \$100,000

*THANK YOU FOR YOUR TIME AND ASSISTANCE,
IT IS GREATLY APPRECIATED!*

*PLEASE PLACE THE QUESTIONNAIRE BACK IN THE ENVELOPE AND
PLACE IN YOUR MAILBOX IN PREPARATION FOR PICKUP.*