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Commentary: Changes in eating and changes in affect during early Covid confinement

Herbert L. Meiselman

Herb Meiselman Training and Consulting, Rockport, MA 01966, USA

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ABSTRACT

This commentary discusses papers dealing with responses to the first phase of the Covid-19 pandemic in Spring 2020. The papers focus on healthy eating and drinking, with less emphasis on unhealthy eating and drinking and resulting weight gain. This helps us to understand the initial eating responses to stress. The multi-cultural data collected before Covid-10 also provide interesting data on eating and drinking during normal times. The commentary addresses the problems created by lack of representative sampling of consumers in some of the papers. The commentary also discusses the focus on healthy eating, and the likelihood of unhealthy eating and resulting weight gain. It will be interesting to compare these early data with data from later in the Covid-19 pandemic.

1. Introduction

The Covid pandemic has produced probably the biggest change in daily lives for most people of their whole lifetime. The changes included lockdown at home, separation from family and friends, separation from workplace, avoidance of dining out options, higher states of anxiety and stress, etc. As I write this commentary, we are still not sure when the pandemic will end; when life will return to normal including how, where, with whom and what we eat.

During this pandemic a number of researchers in food consumer research investigated the effects of Covid on eating attitudes and eating behavior, and a number of these studies are reported in this Special Issue of *Food Quality and Preference*. These studies were all conducted during March-June 2020, so they reflect the early phase of Covid and its effects; it is interesting to ask as one reads these papers whether the same results would be seen today, after approximately two years of Covid. And the pandemic has still not ended, so what is ahead?

One of the themes running through these interesting papers is the theme of healthy eating, and whether the Covid pandemic and resulting confinement led to healthier or less healthy eating. And if so, what variables were involved in these changes, and which consumer groups were most affected? Another theme in some of the papers is the effects of Covid on affect. How did people feel during the early phase of the pandemic?

1.1. Overview of the studies

Caso et al. (2022) examined dietary habits in a longitudinal study in Italy using self report surveys. During lockdown (April-June 2020) participants (n = 728) reported an increase in healthy food consumption and in food preparation at home, and a decrease in junk food consumption. After lockdown, people reduced their healthy food consumption, and their involvement in food preparation, but did not increase their junk food consumption. The authors interpret the findings that increased time available led to healthier eating. Restrained eaters, along with women and young people, took the greatest advantage of the lockdown in terms of improvements in eating habits. Restrained eaters were also in the group that reduced junk food along with older persons and women. Women and older people also did not reduce their food preparation time following lockdown.

Philippe et al. (2022) studied with open ended questions how French parents (n = 498) of children ages 3–12 experienced positive and negative changes during the lockdown (March-May 2020). Parents liked the choice of more local, fresh foods, and the time to prepare home-made dishes, and cooking and eating together. But a majority of parents commented negatively on increased food preparation at home, and the higher intake of unhealthy, palatable food. Philippe et al. (2022) note the similarity of these findings to other Covid studies in Europe. Parents hoped to continue the positive effects of lockdown (local, seasonal, fresh food, family eating), but doubted these would occur. The authors stressed the ambivalence from the lockdown: sensory/commensal pleasure, but concerns about increased intake of pleasurable

E-mail address: herb@herbmeiselman.com.

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food (mainly mothers). Parents commented on the role of emotions in contributing to both under-eating and overeating, especially stress and boredom contributing to overeating.

Jaeger et al. (2021) report on 900 adults (18–65. Half female) in the USA in June 2020 responding to a computer survey regarding positive dietary changes. 44%, mainly younger and more educated, reported to have made positive dietary changes including eating fresh fruit. This group was less neophobic, and emphasized health more. People reporting rating health, price, and sensory as the top factors whether they made healthier food choices or not, and mood was rated in the low group of factors by both groups.

Molina-Montes et al. (2021) studied 36,185 adults in 16 European countries using a questionnaire about eating behavior during Covid confinement. Adherence to the Mediterranean diet increased across all countries during confinement. The study sample was predominantly female (77.6%), young (42.7%, ages 21–35 years), and higher educational level (75.2%), living in a family home (75%), without children (57.7%).

Piochi et al. (2021) report on a study in Italy ($n = 3060$) during Covid lockdown (April 2020) with a wide age range (18–91) and a gender mix (33% male) of respondents. Overall, people reported increased liking for home meals (51%), and increased food intake (51%). Two clusters of respondents were identified: higher meal appreciation or unchanged meal appreciation, as follows: increased meal pleasure was associated with home togetherness and cooking with others, and being young. Unchanged meal pleasure was mostly associated with being elderly and living alone (before and during lockdown), retired, with a low food budget.

Grunert et al. (2022) used an on-line survey with Danish consumers ($n = 526$) to study attitudes toward food shopping before and during the first lockdown. People were divided into those who like cooking and shopping and those who do not, or no opinion. Most people remained in the same frame of mind during lockdown; customers with strong negative emotional response to the lockdown were more likely to change their frame of mind. Grunert et al. (2022) obtained information on 7 “emotions”: hopeless, restless, more effort, worthless, nervous, depressed, struggling financially. Negative feelings were more frequent among females and younger respondents. Attitudes were related to reported food intake. Grunert et al. (2022) compare their findings to those of other European Covid studies.

Lamy et al. (2022) also studied compared pre-Covid and during Covid behavior during the first lockdown (April-June 2020) across 16 countries (72.8% Europe, 12.8% Africa, 2.2% North America, and 12.2% South America). Measures were taken of eating motivations, dietary habits and eating related behaviors. The main motivations to eat were familiarity and liking, but the respondents could be divided into those with a healthy focus and those with an unhealthy focus. The unhealthy group reported increased consumption for high sugar, high salty and fatty foods.

Agnoli and Charters (2022) studied wine consumption globally during the early phase of Covid (March-June 2020). They compared professionals in the drinks industry ($n = 264$) and “non-professional wine lovers” ($n = 311$). They found less change in the non-professional group, who were more likely to increase beer consumption than spirits, and more likely to buy wine. Wine professionals increased alcohol consumption in wine but not beer and spirits. Anxiety had an effect on the wine consumption of professionals and the beer consumption of non professionals. Anxiety was higher for female non-professionals. Interestingly, anxiety did not increase with the duration of confinement during Covid.

Gomez-Corona et al. (2021) report on two studies on fear during the pandemic conducted in three countries ($n = 60$ per country in study 1, in Mexico, Spain, Peru, and 50 per country in study 2) with different degrees of confinement during Covid. The type of fear differed among the three countries, and women scored higher in fear than men in all countries. Fear was involved in issues like overeating, food supply,

immunity, and family conflicts, and these dietary results varied by country.

It is interesting that these two studies of affect changes during Covid chose related emotions of anxiety and fear. Some of the other papers in this special issue focus on the positive emotions that followed the increase in family meals, or the negative emotions from the increase in meal preparation. An interesting general question is what were the most frequent emotional changes during Covid, looking at it after two years. Would anxiety and fear be on this list? Or would emotions after two years reflect the long term effects of Covid, such as boredom, frustration, and others?

2. Representativeness of samples studied

In most of these Covid studies, the samples of people studied were more female, younger and more educated than the population as a whole (see Table 1).

Of special note is the higher percentage of females studied in many studies, and the relative lack of studies of children and adolescents and the elderly (65+). This is especially important in Covid studies, because the elderly have been more threatened, and have suffered a higher incidence of severe illness and death. Also, females appear to have responded differently than males so it would have been potentially more interesting to see equal amounts of data from females and males.

Gomez-Corona et al. (2021) emphasized the use of equal demographic characteristics (variables) across the three countries, making country comparisons unbiased, and Grunert et al. (2022) note that they used samples representative of the Danish population.

Molina-Montes et al. (2021) had a sample from 16 countries within Europe, but the sample tended to be more female, younger, higher educated, and without children. The broadest geographical samples of people tested were in Agnoli and Charters (2022) (35% Britain, 19% Europe (19%), 13% North America, 15% Australia (15%), and 18% Other, mainly South Africa and Asia), and the Lamy et al. (2022) study (72.8% Europe, 12.8% Africa, 2.2% North America, and 12.2% South America). While these samples include diverse geographic areas, they are not representative samples of the global population or of these countries. In Agnoli and Charters (2022), the wine professionals (24%) were much higher in the “other” category than the non-professionals (12%), and much lower in the European category (professionals 16%, non professionals 29%). Wine professionals were more likely male, and wine non-professionals more likely female. Wine professionals expressed higher levels of wine anxiety compared to non-professionals. Should these be interpreted as professional- non-professional differences, or differences due to demographic and psychographic sampling?

The data on weight gain and weight loss in the United States and Europe shows differences among demographic variables, so we might be missing some important trends in the data in these Special Issue papers because of the lack of representative samples in some of these studies.

3. Healthier eating? most studies find an increase in home food consumption, but perhaps increased eating of palatable food

Caso et al. (2022) (Italy) found that during lockdown participants reported an increase in healthy food consumption and in food preparation at home, and a decrease in junk food consumption. After lockdown, people reduced their healthy food consumption, and their involvement in food preparation, but did not increase their junk food consumption. Philippe et al. (2022) (France) observed that parents liked the choice of more local, fresh foods, and the time to prepare home-made dishes, and cooking and eating together during lockdown. Some parents commented negatively on the higher intake of unhealthy, palatable food. Jaeger et al. (2021) reported on a USA computer survey of positive dietary changes including eating fresh fruit. People rated health, price, and sensory as the top factors whether they made healthier food choices or not. Molina-Montes et al. (2021) studied adults in 16

Table 1
Demographics in Covid Studies.

	Caso et al. (2022)	Philippe et al. (2022)	Jaeger et al. (2021)	Molina-Montes et al. (2021)	Pirochi et al.	Grunert et al. (2022)	Gomez-Corona	Agnoli	Lamy			
N=	728	498	900	36,185	3060	526	180(60 ea) 34.5**	450 (150 ea)	575	264	311	3332
Mean age	39.6							<30–60+ ***				
Age range	18–79	25–64 (children 3–12)	18–65	young-middle	18–91	20–75*		18–59**				
Female	61%	72% mothers	50%	77%		50%	50%	57%	51%	40%	61%	71.60%
Male		28% fathers	50%	22%	33%	49%	50%	43%	49%	60%	39%	28.40%
education		high	high	high								high
income		high										high
date of data collection (all in 2020)		March-May	June	March-May	April	April-May	April	April				April-June
country	Italy	France	USA	Europe	Italy	Denmark	Mexico, Peru, Spain		Brit., Europe, North Amer., Australia, Other			16 Countries
Cohabitants	3.06											
Range	0–9			57% no children								73.2% no children

*quota sampling for age, gender, education.

**quota sampling for age and gender in three countries.

***more older consumers than other studies.

European countries using a questionnaire approach, and found adherence to the Mediterranean diet increased across all countries during confinement, with a decrease in fast food, fried food and snacks among those with medium or high adherence. [Piochi et al. \(2021\)](#) reported increased liking for home meals, and increased food intake during lockdown in Italy. Two clusters of respondents were identified: higher meal appreciation or unchanged meal appreciation. [Grunert et al. \(2022\)](#) used an on-line survey in Denmark before and during the first lockdown. People were divided into those who like cooking, those who do not, or no opinion, and these distinctions were reflected in differences in food choices. [Lamy et al. \(2022\)](#) also used an on-line questionnaire in 16 countries to study healthy and unhealthy eating. [Agnoli and Charters \(2022\)](#) studied beverage consumption globally during Covid and found increased consumption of beer among non-professionals, and increased consumption of wine among wine professionals; alcohol consumption either increased or did not change for large proportions of the two groups. Gomez Corona et al. (Mexico, Spain, Peru) studied fear during the early phase of Covid (March-June 2020) and report differences in food choices among different clusters of respondents (different countries).

Now that we have reached two years of Covid in most countries, it would be interesting to re-look at these findings related to (un)healthy eating.

4. Weight gain

In the early phase of Covid (April-May 2020) [Schulte et al. \(2021\)](#) report that prospective studies did not show significant weight gain, but that weight gain began to appear shortly thereafter (May-July). However, cross sectional studies from several countries showed weight gain during the early period of Covid.

Over the longer term of Covid people report gaining weight. The percentage of people who gained weight and the average weight gained are in similar ranges. [Frates \(2021\)](#) reported on 15 million patients whose weight was tracked over the one year starting at the beginning of the pandemic. She reported that 39% reported weight gain, with 27% reporting a weight gain less than 5.68 Kg (12.5 lb) and 10% gaining more. Also, 35% of people reported losing weight. A study by the American Psychological Association ([Weir, 2021](#)) found that 42% of respondents in the USA gained weight, with an average of 13.18 Kg (29

lb), and 18% saying they had lost weight. Half of those reporting weight gain reported gaining more than 6.8 Kg (15 lb), with more women (45%, 37 lb) than men (39%, 22 lb) reporting weight gain. In another USA study, [Lin et al. \(2021\)](#) found that respondents gained 0.68 Kg (1.5 lbs) per month from between March 19 and June 2020. In an EU study, [Harashitha et al. \(2021\)](#) found that 55% of respondents reported a weight gain. [Rizzo \(2021\)](#) reports on a large (n = 19,903) global (140 countries) on-line study; 35.82% reported weight gain during Covid, and of those 71.25% gained more than 2.27 Kg (5 lbs). The U.S. had the highest weight gain, and women reported to be more likely to gain weight. Across all studies, it appears that about 40% of respondents gained weight during Covid.

[Khan et al. \(2021\)](#) report on a review of 41 studies of Covid weight gain with a total number of 469,363 participants (ages 6–86, 37–100% female). Weight gain was associated with Covid confinement in 7.2–72.4% of people, and weight loss in 11.1%–32%, with an average weight gain of 0.6–3.0 Kg. Importantly, weight gain “occurred predominantly in participants who were already overweight or obese”. The reviewed studies have a much broader range of ages, and include people with pre-existing overweight. The Centers for Disease Control (CDC) in the USA studied 432,302 persons ages 2–19 and found the same thing; from pre-pandemic (2018-February 2020) to pandemic times (March-November 2020) the rate of BMI increase doubled, and that young people with overweight or obesity had significantly higher rates of BMI increase.

It is possible that the study samples reported in this Special Issue of *Food Quality and Preference* had smaller samples of this population. It can be hypothesized that if the participants thought a survey was a health survey, that obese people might avoid it. There is substantial evidence that obese people avoid medical care because of their perception of how they are seen and treated ([Alberga et al., 2019](#)).

The studies reported in this Special Issue of *Food Quality and Preference* show what conditions might have led to weight gain, especially increased consumption of highly palatable, high calorie food at home. [Philippe et al. \(2022\)](#) in their study of French food habits during the early lockdown noted the higher intake of unhealthy, palatable food, and the concern especially among women for the temptation to eat.

[Molina-Montes et al. \(2021\)](#) emphasize adherence to the Med Diet in their broad European study, and they note that 50.7% did not experience weight gain, and 26.8% were not aware of weight variation. Adherence

to the Med Diet was higher in Southern Europe, especially among people 51+ with a previous high adherence to the diet. Lamy et al. (2022) describe the division of their sample into healthy (approximately 2/3) and unhealthy eaters (approximately 1/3), with the healthy eaters more focused on health and weight control, and less focused on pleasure or affect regulation. Piochi et al. (2021) report an increase in snacking by 33% of their sample, and an increase in meal duration by 44% of their sample, both of which could contribute to increased consumption. Agnoli and Charters (2022) found that the majority of respondents did not decrease their alcohol consumption.

5. Conclusion

Overall, the papers in this Special Issue are more focused on healthy eating and drinking and less focused on unhealthy eating and drinking, and possible weight gain. The papers give us some helpful data on what contributes to healthy eating, but this is not balanced with what contributes to unhealthy eating. When we look back at the pandemic (hopefully, one day soon) will we remember the healthy eating during Covid or the unhealthy eating and weight gain?

In the meantime, these papers often include data on food related attitudes and behaviors without the intrusion of the pandemic, i.e. the attitudes and behaviors before the pandemic. These data can be added to the limited data on cross-cultural comparisons of attitudes and behavior related to eating. These papers include extensive data from Europe, Africa, North and South America, Asia, and Australia-New Zealand. Our excitement to add these new data should be tempered by the fact the samples used to collect them were not representative of these regions in most, but not all cases. And for those papers which focused on attitudes and behaviors during the pandemic, it will be interesting to study how much those change as the pandemic continued, comparing results to studies conducted during late 2020 and 2021.

Finally, many of these papers and the other references present comparisons to other Covid research. The interested reader is referred to the many studies on Covid, and to future studies which look at (un) healthy eating and weight gain from a further point in the Covid pandemic.

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