The National COVID-19 Food Study

UNIVERSITY COLLEGE DUBLIN, INSTITUTE OF FOOD AND HEALTH

IN COLLABORATION WITH

DUBLIN CITY UNIVERSITY

UCD Institute of Food and Health, University College Dublin, Ireland

www.ucd.ie/foodandhealth

CONTENTS

The National COVID-19 Food Study

University College Dublin (UCD) Institute of Food and Health, in collaboration with Dublin City University (DCU)

Research Team:

- Dr Eileen Gibney (UCD)
- Dr Sharleen O'Reilly (UCD)
- Dr Aifric O'Sullivan (UCD)
- Dr Celine Murrin (UCD)
- Dr Emma Feeney (UCD)
- Dr Claire Timon (DCU)

This work was supported by the UCD Institute of Food and Health, University College Dublin, Ireland

Acknowledgements

- Dr Aileen McGloin, Director of Marketing and Communications, *safe*food, Dublin, Ireland
- Geraldine Quinn & Emma Somers, UCD Institute of Food and Health
- Participants who took time to complete this survey in this challenging time

Main Findings – Online Survey

Nearly 4,000 participants provided some information in the survey, 82% being female and 83% aged between 25 to 64 years. Responses were from all 32 counties on the island of Ireland, with most being from Dublin (45%)

50%

REPORTED NO CHANGE IN EATING BEHAVIOUR

with 40% reporting eating more than usual and only 10% eating less

42%

SAID THEY WERE EATING MORE SNACKS

with those in the 25-44yrs age group being the most affected. 43% participants reported no change in their snacking habits, and 15% reported a lower intake of snacks

72%

REPORTED DOING MORE HOME BAKING

75% of younger age groups (18-44years) were baking and cooking more compared with only 55% in 65+yrs

64%

REPORTED CONSUMING LESS TAKEAWAYS THAN BEFORE COVID-19

44%

REPORTED THAT THEIR WEIGHT STAYED THE SAME

30% reported an increase and 15% reported a decrease

60%

OF THE YOUNGEST AGE GROUP EXERCISED MORE FREQUENTLY

This percentage of respondents decreased with age, with just 37% of the 65+yrs reporting increased exercise frequency

20%

REPORTED BEING CONCERNED ABOUT NOT HAVING ENOUGH FOOD

20% also reported eating a limited variety of foods and 10% reported consuming food that they didn't want due to a lack of food availability

Main Findings – Community & Advocacy Group Interviews

SIGNIFICANT IMPACT OF COVID-19

The community and advocacy groups reported a significant impact of COVID-19 on the vulnerable members of society

MISSING SCHOOL MEAL SCHEMES

Families with young children, who may ordinarily have benefitted from breakfast, snacks and lunches as part of the school meal schemes, were struggling to feed their families and experiencing acute levels of financial strain. Families who had never sought help for food provision before were seeking this support during COVID-19 restrictions

INCREASED PRESSURE ON SERVICE PROVISION

Social distancing introduced greater complexity for service provision, including the number of individuals who could be offered daily meals in shelters, or queuing for soup-runs on the streets

MENTAL HEALTH IMPACT

Alongside food poverty issues, the community and advocacy groups emphasised the major mental health impact the COVID-19 restrictions were having across all vulnerable groups

INCREASED COST OF STAYING AT HOME

The increased cost of staying at home was reported as a daily struggle and a stressor for vulnerable groups. Some concerns were voiced about the potential impact that a return of COVID-19 restrictions could have in winter months with increased heating and electricity costs

EXACERBATION OF SOCIAL STRESSORS

Vulnerable, homeless people, or those with addiction issues, were reported to have experienced an exacerbation of social stressors during COVID-19 restrictions. Movement from hostels or between social housing brought both positive and negative impacts

SOCIAL ISOLATION

Social isolation was a big concern. Its longer-term impact on mental and physical health was noted as a real challenge for all groups. Many were worried how this would be managed in subsequent waves of restrictions

Background

In March 2020, the Governing bodies of both the Republic of Ireland and Northern Ireland introduced a series of public health restrictions to curb the spread of COVID-19[1]. Both national and global public health measures had significant effects on global food supply chains, which resulted in pressure on these and impacting on the availability of retail stock [2],[3],[4].

Consumers sought to stock up on essentials and to reduce their retail visits, with many retail outlets reporting shortages of basic products, and restrictions placed on some purchases [2],[3],[4]. For many families, incomes were reduced due to pay cuts or job losses, and many homes had more family members living at home for an extended period as students and other family members returned to the family home for the duration of restrictions. All of these issues may have impacted finances and access to food for many. Additionally, anecdotal reports of increased baking and cooking confounded by shortages of associated foodstuffs, and increases in take away foods and snacks in others, suggest that the restrictions may have had an impact on food consumption habits and other lifestyle factors[5],[6].

Furthermore, previous reports indicate that ~25% of food was eaten outside the home pre-Covid-19[7], but restriction of movement, and closure of many food outlets, meant almost all food had to be prepared at home, placing additional burden on households and individuals.

[1] https://www.gov.ie/en/campaigns/c36c85-covid-19-coronavirus/
[2] Power, M., Doherty, B., Pybus, K. and Pickett, K., 2020. How COVID-19 has exposed inequalities in the UK food system: The case of UK food and poverty. Emerald Open Research, 2.
[3] Cummins, S., Berger, N., Cornelsen, L., Eling, J., Er, V., Greener, R., Kalbus, A., Karapici, A., Law, C., Ndlovu, D. and Yau, A., 2020. COVID-19:
impact on the urban food retail system, diet and health inequalities in the UK. https://doi.org/10.31235/osf.io/dwv2e
[4] Serafim Bakalis,a,b,1,∗∗ Vasilis P. Valdramidis,c,1,∗ Dimitrios Argyropoulos,d Lilia Ahrne,e Jianshe Chen,f P.J. Cullen,g Enda Cummins,d Ashim K. Datta,h Christos Emmanouilidis,i Tim Foster,j Peter J. Fryer,b Ourania Gouseti,a Almudena Hospido,k Kai Knoerzer,l Alain LeBail,m Alejandro G. Marangoni,n Pingfan Rao,f Oliver K. Schlüter,o Petros Taoukis,p Epameinondas Xanthakis,q and Jan F.M. Van Imper. Perspectives from CO+RE: How COVID-19 changed our food systems and food security paradigms Current Research in Food Science. 2020 Nov; 3: 166–172. Published online 2020 Jun 2. doi: 10.1016/j.crfs.2020.05.003
[5] https://www.rte.ie/lifestyle/food/2020/0501/1136006-listen-does-ireland-have-a-flour-shortage/
[6] https://www.flipdish.com/ie/blog/fish-and-chips-feed-a-nation-as-ireland-turns-to-takeaway-and-delivery-during-covid-19/
[7] www.iuna.net

Background

With future waves of COVID-19 likely and a possible return of similar public health restrictions, it is important to understand how the restrictions implemented on the island of Ireland during COVID-19 impacted food choice and eating behaviours, in order to inform future public health strategies. This study aimed to examine the impact restrictions had on food habits in Ireland, including access to food, changes in usual foods eaten and their frequency, and changes in exercise habits, concurrently.

The study was conducted from 20th April 2020 to 25th May 2020. A total of 4358 participants consented to take part in the study, with a subset (1033) of volunteers who agreed to take part in further longitudinal questionnaires, and 272 who agreed to complete a more detailed dietary intake assessment. A series of key informant interviews were also conducted (n=15) to explore the impact of COVID-19 on more vulnerable members of the community. The interviews sought to give voice to vulnerable groups within society who will typically be underrepresented in online surveys and give a more balanced and complete picture of COVID-19's impact on food habits.

Study Methodology

STUDY OUTLINE

This study aimed to examine the impact that COVID-19 public health restrictions had on food habits in Ireland, including food security, changes in usual eating habits, changes in exercise habits, and perception of COVID-19 risk. The study consisted of two parts - an online, general population questionnaire, and a series of semi-structured interviews with vulnerable group advocacy and community representatives. Full ethical approval was obtained from the Human Research Ethics Committee - Sciences within University College Dublin (HS-20-23-Gibney).

ONLINE QUESTIONNAIRE

The research team developed the online questionnaire, which comprised of 59 questions across five sections. Where possible the questions were derived from previously published surveys to aid comparison[8] or developed de-novo. The specific sections were as follows;

Section	Number of Questions
1 - Consent	1
2 - Personal Information (demographics)	13
3 - Food Security	7
4 - Food and activity before COVID-19	14
5 - Food and activity during COVID-19	18
6 - Perceptions of COVID-19 Risk	2
7 - Sign up to longitudinal questionnaire / dietary recall	4

[8] Household Food Insecurity Access Scale (HFIAS) and Healthy Ireland Survey (https://www.gov.ie/en/collection/231c02-healthy-ireland-survey-wave/)[7] www.iuna.net

Study Methodology

SurveyMonkey (™) was the platform used to develop and host the questionnaire. Participants were directed to the questionnaire by visiting www.covidfood.ie or the UCD Institute of Food and Health website (https://www.ucd.ie/foodandhealth/covid/) in which the questionnaire was embedded. The research team and other members of the UCD Institute of Food and Health trialled the survey prior to general release.

Participants provided their consent for the study as the first survey question and those who did not consent to the terms of the study were not permitted to proceed.

The final section of the questionnaire invited participants to complete a series of weekly longitudinal questionnaires (n=3) to assess change over the following 3 weeks. Participants agreeing to the longitudinal questionnaires submitted their email address for contact and SurveyMonkey links to the additional questionnaires were sent directly to these participants. The longitudinal questionnaires were a shortened version of the initial questionnaire, comprising of sections 1 (Consent), 3 (Food Security), and 5 (Food and activity during COVID-19) only, containing a total of 26 questions. The results of the longitudinal surveys are not detailed in this report.

DIETARY INTAKE ASSESSMENT

The final section of the questionnaire also invited participants to complete a more detailed 24hr dietary recall, using the online web based dietary intake assessment

Study Methodology

tool Foodbook24 [9],[10]. Full details on the tool have been previously described [9], [10], but in brief, Foodbook24 is a self-administered, web-based tool consisting of different components that facilitate the collection of dietary intake data without direct interaction with a researcher. An individual link to access Foodbook24 was sent directly to any participant indicating their interest in completing this component of the study. Participants were invited to complete 2 x 24 hr recall tools over a 2-week period, separated by a minimum of a 4-day period. A series of email reminders were scheduled to prompt participants to login and complete each component.

RECRUITMENT

Participants were recruited via the National COVID-19 Food Study websites (https://www.ucd.ie/foodandhealth/covid/ and www.covidfood.ie) which was aided by advertising of the study on social media, radio, TV and word-of-mouth. Individuals were eligible to participate if they were over 18 years of age at the time of completion, resident on the island of Ireland, and had access to the Internet or phone for the completion of the survey.

[9] Timon, C.M., Blain, R.J., McNulty, B., Kehoe, L., Evans, K., Walton, J., Flynn, A. and Gibney, E.R., 2017. The development, validation, and user evaluation of Foodbook24: a web-based dietary assessment tool developed for the Irish adult population. Journal of medical Internet research, 19(5), p.e158.
[10] Timon CM, Evans K, Kehoe L, Blain RJ, Flynn A, Gibney ER, Walton J. 2017 Comparison of a Web-Based 24-h Dietary Recall Tool (Foodbook24) to an Interviewer-Led 24-h Dietary Recall.Nutrients. Apr 25;9(5):425. doi: 10.3390/nu9050425

Study Methodology

ADVOCACY AND COMMUNITY GROUP INTERVIEWS

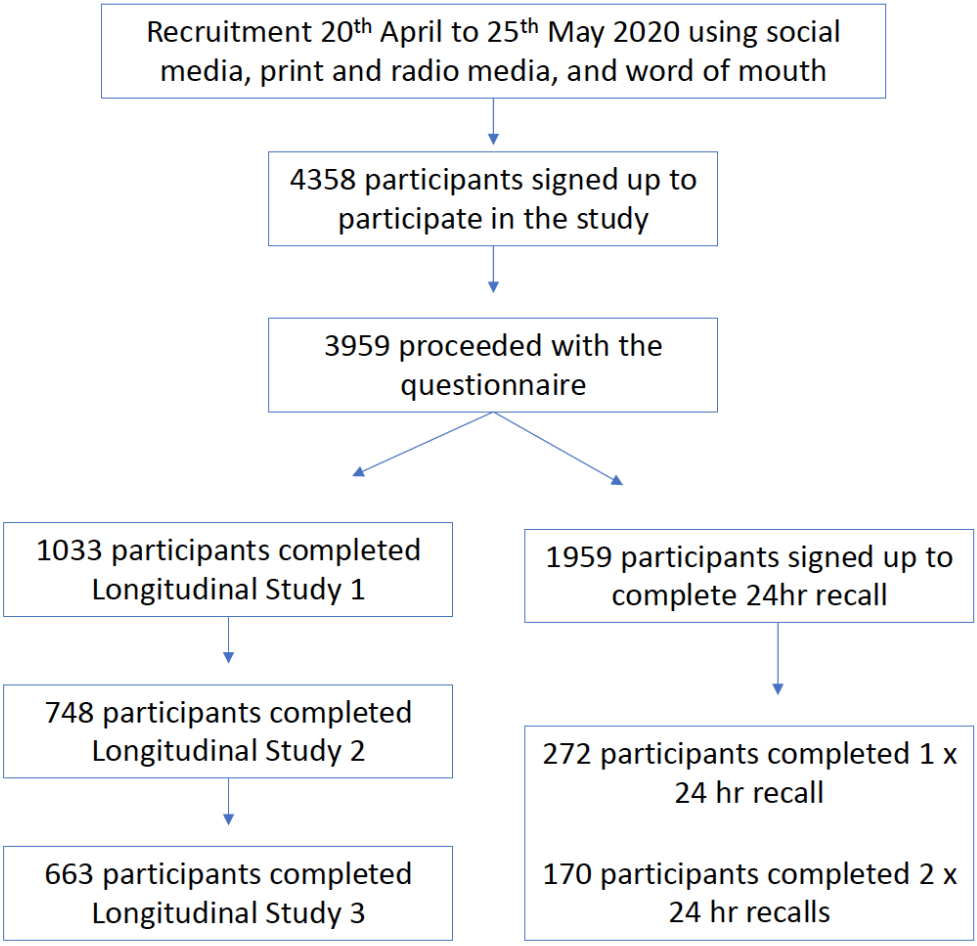
The series of key informant interviews were conducted using a semi-structured format. Interviews were conducted over video teleconference or telephone. The interviews were digitally audio recorded. Organisations and staff representing older and more vulnerable members of Irish society were approached for the interviews. Participants were invited to participate by an email containing the participant information sheet and consent form. Fifteen interviews were conducted. Four members of the research team facilitated the interviews, all of whom are experienced in conducting qualitative interviews. Following each interview, the facilitator completed debriefing notes and these are reported here. Transcription will be completed at a future date and following checking for completeness, the digital audio files will be destroyed.

DATA COLLECTION

A total of 15 interviews were conducted between April and June 2020. A total of 4358 participants agreed to participate in the online questionnaire, which was open for responses from 24th April till 25th May 2020, and 3959 proceeded with the questionnaire. Full details of participant numbers are given in figure 1.

Study Methodology

FIGURE 1 - OUTLINE OF PARTICIPANT NUMBERS



Results - Online Survey

SOCIODEMOGRAPHIC CHARACTERISTICS

Table 1 provides a descriptive overview of the sociodemographic characteristics of the sample who provided information (n=3959). The gender profile was predominantly female (82%) and most (83%) were in the middle two age groups spanning 25 to 64 years. Less than 10% were of non-Irish nationality. There were responses from all 32 counties on the island of Ireland, with most being from Dublin (45%), and living in suburban or inner-city locations (52%). This was a well-educated sample with 79% having some third level education. Just over half of the sample were married or in a civil partnership (53%) and there was some variation across the household type ranging from 2% who were adults caring for one or more adults at home, to 28% who were in a couple with children under 18 years (28%) (Table 1). Greater proportions of the sample were employed or self-employed (82%), owned their home (64%) and did not hold a medical card (85%). At the time of completing the survey the respondents mostly reported being in very good (47%) or good health (42%) (Table 1). 39% of the total population reported that they considered COVID-19 as a serious threat, with 54% reporting that they felt likely/very likely to contract the disease (data not shown).

Results - Online Survey

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF ONLINE STUDY SAMPLE (N=3959)

		n	%
Age	18-24 years	370	9.3
	25-44 years	1849	46.7
	45-64 years	1435	36.2
	65 years and over	286	7.2
	Prefer not to say / Don't want to answer	19	0.5
Gender	Male	707	17.9
	Female	3235	81.7
	Prefer not to say / Don't want to answer	17	0.4
Nationality	Irish	3577	90.4
	Other	370	9.3
	Prefer not to say / Don't want to answer	12	0.3
County	Antrim	110	2.8
	Armagh	11	0.3
	Carlow	38	1
	Cavan	37	0.9
	Clare	63	1.6
	Cork	310	7.8
	Derry (Londonderry)	9	0.2
	Donegal	77	1.9
	Down	34	0.9
	Dublin	1773	44.8
	Fermanagh	3	0.1
	Galway	160	4
	Kerry	121	3.1
	Kildare	161	4.1
	Kilkenny	60	1.5
	Laois	36	0.9
	Leitrim	20	0.5
	Limerick	87	2.2
	Longford	11	0.3
	Louth	73	1.8
	Mayo	61	1.5
	Meath	131	3.3
	Monaghan	20	0.5
	Offaly	32	0.8
	Roscommon	33	0.8

Results - Online Survey

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF ONLINE STUDY SAMPLE - CONTD

	Sligo	38	1
	Tipperary	65	1.6
	Tyrone	7	0.2
	Waterford	48	1.2
	Westmeath	46	1.2
	Wexford	111	2.8
	Wicklow	145	3.7
	Don't know / Don't want to answer	28	0.7
Location	Inner city	365	9.2
	Suburban	1712	43.2
	Large regional town	341	8.6
	Small regional town	369	9.3
	Country village	317	8
	Countryside	838	21.2
	Prefer not to say / Don't want to answer	17	0.4
Education	Primary Education	27	0.7
	Secondary Education	411	10.4
	Post Leaving Certificate course	352	8.9
	Third Level Course	3125	78.9
	Prefer not to say / Don't want to answer	44	1.1
Marital status	Single	1500	37.9
	Married or in a civil partnership	2091	52.8
	Widowed or death of partner	74	1.9
	Divorced or legally dissolved partnership	120	3
	Separated	89	2.2
	Prefer not to say / Don't want to answer	85	2.1
Household Type	Single adult	494	12.5
	Couple with no children	750	18.9
	Couple with child/children under 18	1102	27.8
	Couple with adult child/children	676	17.1
	Lone parent with child/children under 18	108	2.7
	Lone parent with adult child/children	113	2.9
	Adult/adults caring for one or more adults	75	1.9
	Multiple adults	593	15
	Prefer not to say / Don't want to answer	48	1.2

Results - Online Survey

TABLE 1: SOCIODEMOGRAPHIC CHARACTERISTICS OF ONLINE STUDY SAMPLE - CONTD

Children <18yrs in household (n=1,521)	1	505	33.2
	2	610	40.1
	3	292	19.2
	4	63	4.1
	5	7	0.5
	>5	14	0.9
	Prefer not to say / Don't want to answer	30	2.0
Employment	Employed	2813	71.1
	Self-employed	422	10.7
	Looking for first regular job	4	0.1
	Unemployed, lost or given up previous job	64	1.6
	Actively looking for work	19	0.5
	Student or pupil	92	2.3
	Engaged in home duties	39	1
	Retired from employment	360	9.1
	Unable to work due to sickness / disability	40	1
	Other	78	2
	I prefer not to say / Don't want to answer	28	0.7
Living circumstances	Own home	2530	63.9
	Rented home	798	20.2
	Adult living in family home	576	14.5
	Living in accommodation due to work reasons	17	0.4
	Emergency accommodation (hostel, B&B, hotel)	1	0
	I prefer not to say / Don't want to answer	37	0.9
Medical card holder	Yes	514	13
	No	3354	84.7
	I prefer not to say / Don't want to answer	91	2.3
Self-rated health	Very Good	1870	47.2
	Good	1659	41.9
	Fair	366	9.2
	Bad	45	1.1
	Very Bad	6	0.2
	I prefer not to say / Don't want to answer	13	0.3

Results - Online Survey

PRE COVID-19 FOOD BEHAVIOURS

At a total population level, participants of the study reported that prior to the COVID-19 restrictions, eating and food behaviours of participants that were broadly similar to previously reported National data [7],[11],[12],[13]. For example, regular breakfast consumers in the latest National Adult Nutrition Survey (NANS) were reported to be 94%[7] and within this National COVID-19 Food Study, the reported frequency was lower but comparable at 83%. In addition, daily fruit consumption within the current study, was reported to be 57.9% (Table 2), which again is broadly similar to previously reported, with data from EUROSTAT [12] suggesting that daily fruit consumption in Ireland is reported to be 53.8%. Similarly for vegetables, reported frequency of intake in this National COVID-19 Food Study was reported to be 68.2% and within EUROSTAT [12] was 54.4%. Reported frequency of consumption snack foods (other than fruit, vegetables or yoghurt), for example crisps, crackers consumption was comparable with the Healthy Ireland Survey[13], which examined health and lifestyle behaviours in the Irish population in 2016. Within the Healthy Ireland Survey[4] 60% people reported consuming a snack food at least daily, whereas within the National COVID-19 Food Study this was 58.6% (Table 2). Similarly frequency of any sugar sweetened beverage consumption was 9% in the Healthy Ireland study and within the National COVID-19 Food Study was 6.5% (Table 2).

[7] www.iuna.net - National Adult Nutrition Survey
[11] Uzhova, I.; Mullally, D.; Peñalvo, J.L.; Gibney, E.R. Regularity of Breakfast Consumption and Diet: Insights from National Adult Nutrition Survey. Nutrients 2018, 10, 1578.
[12]https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Fruit_and_vegetable_consumption_statistics
[13]https://www.safefood.eu/SafeFood/media/SafeFoodLibrary/Documents/Professional/All-island%20Obesity%20Action%20Forum/Healthy-Ireland-Survey-2018.pdf

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650)

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Breakfast consumers	**Always**	198	60.6	1109	65.5	982	72.4	218	83.8	7	46.7	2514	68.9
	Usually	58	17.7	255	15.1	174	12.8	28	10.8	1	6.7	516	14.1
	Sometimes	28	8.6	153	9	93	6.9	3	1.2	0	0	277	7.6
	Rarely	27	8.3	123	7.3	69	5.1	9	3.5	2	13.3	230	6.3
	Never	16	4.9	52	3.1	37	2.7	2	0.8	2	13.3	109	3
	Don't want to answer	0	0	0	0	1	0.1	0	0	3	20	4	0.1
Fruit consumers	**1/d+**	177	54.1	900	53.2	853	62.9	177	68.1	7	46.7	2114	57.9
	4-6/week	63	19.3	319	18.9	228	16.8	39	15	0	0	649	17.8
	1-3/week	63	19.3	327	19.3	200	14.7	36	13.8	4	26.7	630	17.3
	<1/week	19	5.8	109	6.4	62	4.6	6	2.3	1	6.7	197	5.4
	Never	5	1.5	37	2.2	12	0.9	2	0.8	0	0	56	1.5
	Don't know	0	0	0	0	1	0.1	0	0	0	0	1	0
	Don't want to answer	0	0	0	0	0	0	0	0	3	20	3	0.1

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Vegetable consumers	**1/day**	205	62.7	1110	65.6	970	71.5	196	75.4	8	53.3	2489	68.2
	4-6/week	69	21.1	371	21.9	279	20.6	38	14.6	0	0	757	20.7
	1-3/week	37	11.3	176	10.4	93	6.9	23	8.8	1	6.7	330	9
	<1/week	11	3.4	25	1.5	13	1	2	0.8	1	6.7	52	1.4
	Never	3	0.9	9	0.5	1	0.1	1	0.4	2	13.3	16	0.4
	Don't know	2	0.6	1	0.1	0	0	0	0	0	0	3	0.1
	Don't want to answer	0	0	0	0	0	0	0	0	3	30	3	0.1
Snacks consumers	**1-2/day**	164	50.2	893	52.8	639	47.1	100	38.5	5	33.3	1801	49.3
	3-5/day	50	15.3	193	11.4	96	7.1	11	4.2	1	6.7	351	9.6
	5-7/day	3	0.9	26	1.5	20	1.5	4	1.5	0	0	53	1.5
	7-10/day	0	0	3	0.2	4	0.3	0	0	0	0	7	0.2
	>10/day	2	0.6	1	0.1	0	0	0	0	0	0	3	0.1
	Don't know	0	0	4	0.2	6	0.4	2	0.8	0	0	12	0.3
	Don't eat everyday	100	30.6	542	32	553	40.8	119	45.8	5	33.3	1319	36.1
	Never eat	8	2.4	29	1.7	38	2.8	24	9.2	1	6.7	100	2.7
	Don't want to answer	0	0	1	0.1	0	0	0	0	3	20	4	0.1

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
'Treat' consumers	1-2/day	154	47.1	859	50.8	651	48	121	46.5	5	33.3	1790	49
	3-5/day	36	11	151	8.9	79	5.8	16	6.2	2	13.3	284	7.8
	5-7/day	8	2.4	15	0.9	14	1	3	1.2	0	0	40	1.1
	7-10/day	1	0.3	5	0.3	5	0.4	1	0.4	0	0	12	0.3
	>10/day	2	0.6	2	0.1	2	0.1	0	0	0	0	6	0.2
	Don't know	0	0	2	0.1	4	0.2	1	0.4	1	6.7	8	0.2
	Don't eat everyday	121	37	630	37.2	573	42.3	113	43.5	3	20	1440	39.5
	Never eat	5	1.5	26	1.5	28	2.1	5	1.9	1	6.7	65	1.8
	Don't want to answer	0	0	2	0.1	0	0	0	0	3	20	5	0.1
Sugar Sweetened Beverage consumers													
	1/d+	17	5.2	129	7.6	71	5.2	21	8.1	0	0	238	6.5
	4-6/week	12	3.7	59	3.5	24	1.8	4	1.5	1	6.7	100	2.7
	1-3/week	67	20.5	254	15	100	7.4	15	5.8	3	20	439	12
	<1/week	120	36.7	539	31.9	342	25.2	37	14.2	1	6.7	1039	28.5
	Never	108	33	709	41.9	818	60.3	183	70.4	7	46.7	1825	50
	Don't know	3	0.9	2	0.1	0	0	0	0	0	0	5	0.1
	Don't want to answer	0	0	0	0	1	0.1	0	0	3	20	4	0.1

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Takeaway/ eating out consumers	0/week	95	29.1	327	19.3	478	35.3	132	50.8	4	26.7	1036	28.4
	1/week	152	46.5	884	52.2	648	47.8	94	36.2	6	40	1784	48.9
	2/week	54	16.5	300	17.7	152	11.2	23	8.8	4	26.7	533	14.6
	3/week	16	4.9	106	6.3	44	3.2	4	1.5	0	0	170	4.7
	4/week	6	1.8	33	2	12	0.9	1	0.4	0	0	52	1.4
	5/week	4	1.2	24	1.4	11	0.8	3	1.2	0	0	42	1.2
	6/week	0	0	7	0.4	3	0.2	1	0.4	0	0	11	0.3
	7-10/week	0	0	10	0.6	7	0.6	2	0.8	0	0	16	0.4
	Don't want to answer	0	0	1	0.1	0	0.1	0	0	1	6.7	3	0.1

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

	18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Café/ newsagent/ market/ shops food consumers												
0/week	62	19	297	17.6	396	29.2	137	52.7	8	53.3	900	24.7
1/week	92	28.1	472	27.9	372	27.4	64	24.6	3	20	1003	27.5
2/week	63	19.3	313	18.5	227	16.7	26	10	1	6.7	630	17.3
3/week	51	15.6	252	14.9	145	10.7	13	5	1	6.7	462	12.7
4/week	18	5.5	130	7.7	72	5.3	6	2.3	0	0	226	6.2
5/week	23	7	138	8.2	92	6.8	4	1.5	1	6.7	258	7.1
6/week	4	1.2	30	1.8	17	1.3	4	1.5	0	0	55	1.5
7/week	9	2.8	40	2.4	27	2	5	1.9	0	0	81	2.2
8/week	1	0.3	4	0.2	2	0.1	1	0.4	0	0	8	0.2
9/week	2	0.6	1	0.1	0	0	0	0	0	0	3	0.1
10/week	1	0.3	8	0.5	3	0.2	0	0	0	0	12	0.3
>10/week	1	0.3	7	0.4	2	0.1	0	0	0	0	10	0.3
Don't want to answer	0	0	0	0	1	0.1	0	0	1	6.7	2	0.1

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Cooking habits	Homemade from scratch	118	36.1	809	47.8	771	56.9	160	61.5	6	40	1864	51.1
	Homemade - fresh & packets	185	56.6	769	45.4	539	39.7	89	34.2	4	26.7	1586	43.5
	Heat pre-made	14	4.3	57	3.4	24	1.8	6	2.3	1	6.7	102	2.8
	Eat out or takeaway	9	2.8	53	3.1	18	1.3	3	1.2	0	0	83	2.3
	Prefer not to say	1	0.3	3	0.2	4	0.3	2	0.8	1	6.7	11	0.3
	Don't want to answer	0	0	1	0.1	0	0	0	0	3	20	4	0.1
Eating rate	Very slow	15	4.6	43	2.5	19	1.4	8	3.1	0	0	85	2.3
	Slow	51	15.6	217	12.8	155	11.4	31	11.9	2	13.3	456	12.5
	Average	135	41.3	811	47.9	729	53.8	154	59.2	4	26.7	1833	50.2
	Fast	98	30	481	28.4	387	28.5	62	23.8	3	20	1031	28.2
	Very fast	20	6.1	119	7	58	4.3	5	1.9	1	6.7	203	5.6
	Don't want to answer	8	2.4	21	1.2	8	0.6	0	0	5	33.3	42	1.2

TABLE 2: PRE-COVID-19 FOOD BEHAVIOURS (N=3650) - CONTD

		18-24yrs		25-44yrs		45-64yrs		65+yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Alcohol consumers	**Never**	40	12.2	181	10.7	171	12.6	34	13.1	7	46.7	433	11.9
	Monthly or less	77	23.5	374	22.1	201	14.8	44	16.9	3	20	699	19.2
	2-4/month	152	46.5	602	35.6	344	25.4	37	14.2	0	0	1135	31.1
	2-3/week	51	15.6	458	27.1	467	34.4	89	34.2	2	2	1067	29.2
	4+/week	7	2.1	74	4.4	170	12.5	56	21.5	0	0	307	8.4
	Don't want to answer	0	0	3	0.2	3	0.2	0	0	3	20	9	0.2
Alcohol standard drinks	**1-2 drinks**	49	15	479	28.3	532	39.2	126	48.5	1	6.7	1187	32.5
	3-4 drinks	84	25.7	509	30.1	429	31.6	72	27.7	3	20	1097	30.1
	5-6 drinks	72	22	296	17.5	144	10.6	23	8.8	0	0	535	14.7
	7-8 drinks	49	15	152	9	54	4	7	2.7	0	0	262	7.2
	9+ drinks	40	12.2	98	5.8	27	2	1	0.4	0	0	166	4.5
	N/A don't drink	32	9.8	135	8	156	11.5	31	11.9	7	46.7	361	9.9
	Don't want to answer	1	0.3	23	1.4	14	1	0	0	4	26.7	42	1.2

Results - Online Survey

CHANGES IN FOOD EATING BEHAVIOUR DURING COVID-19

Within the National COVID-19 Food Study, between 17 and 25% adults reported they had experienced a change to the foods they were eating. Younger adults reported higher levels of change (24.3%), while older adults reported lower levels of change (17%) (Table 3). When asked about the amount of food being eaten, 50% respondents reported no change but 40% reported eating more and 10% eating less. Those in the 25-44 years group were the most likely to report eating more and 18-24yrs most likely to report eating less.

Within the National COVID-19 Food Study 42% participants said they were eating more snacks and those in the 25-44yrs group being the most affected. 43% participants had no change in their snacking habits and 15% had a lower intake. Older adults 65+yrs reported much less change in snacking behaviours with only 22% eating more snacks and 62% staying the same.

'Treat' foods include chocolate, biscuits, muffins, pastries, ice-cream and sweets. Their consumption was increased in the majority of participants with 49.6% reporting eating more and only 14.4% reporting eating less. The younger age group was more likely to have changed the amount of 'treat' foods eaten (55.7% of 18-24yrs ate more and 18.7% less) compared with older adults (65+yrs 33.9% more and 12.9% less).

Results - Online Survey

The data here supports anecdotal reports that there was much more baking and home food cooking happening during COVID-19 restrictions. 71.5% adults reported doing more and 25.8% reported no change. Three quarters of younger age groups 18-44yrs were baking and cooking more compared with only 54.5% in >65yrs.

Fewer takeaways and delivered meals were consumed during COVID-19 with 63.8% respondents saying they were consuming less, and those aged 24-44yrs reported doing this less (67.4%). Food waste did not appear to be a major concern for most people during COVID-19 restrictions with 83.3% saying they didn't waste more food or buy more than they needed. Older adults were the least likely to report wasting food.

Most people reported changes in their alcohol related behaviours during COVID-19 restrictions (Table 4). Almost 30% reported drinking more frequently and those 24-44yrs were the most likely to report this (35.2%) compared with only 16% in 65+yrs. However, the amount of binge drinking (drinking more standard drinks on a drinking occasion) was not greatly increased with only 4.6% participants reporting drinking more on a single drinking occasion (Table 4).

TABLE 3: COVID-19 FOOD CHOICE AND EATING BEHAVIOUR CHANGES BY AGE GROUP (N=3407)

		18-24 yrs		24-44 yrs		45-64 yrs		65+ yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Change to food eaten	**Yes**	73	24.3	391	24.6	253	19.8	38	17.0	0	0	756	22.2
	No	223	74.3	1200	75.2	1020	79.8	186	83.0	7	70.0	2636	77.4
	Don't want to answer	4	1.3	4	0.3	5	0.4	0	0	2	20.0	15	0.4
Amount of food eaten change	**More**	102	34.0	694	43.5	509	39.8	67	29.9	2	20.0	1374	40.3
	Less	61	20.3	166	10.4	104	8.1	20	8.9	0	0	351	10.3
	Same	137	45.7	734	46.0	664	52.0	137	61.2	6	60.0	1678	49.3
	Don't want to answer	0	0	1	0.1	1	0.1	0	0	2	20.0	4	0.1
Consumption of snack foods	**More**	121	40.3	741	46.5	512	40.1	49	21.9	2	20.0	1425	41.8
	Less	62	20.7	244	15.3	175	13.7	34	15.2	2	20.0	517	15.2
	Same	117	39.0	609	38.2	588	46.0	139	62.1	4	40.0	1457	42.8
	Don't want to answer	0	0	1	0.1	3	0.2	2	0.9	2	20.0	8	0.2
Consumption of 'Treat' foods	**More**	167	55.7	855	53.6	589	46.1	76	33.9	3	30.0	1690	49.6
	Less	56	18.7	229	14.4	174	13.6	29	12.9	2	20.0	490	14.4
	Same	77	25.7	510	32.0	512	40.1	118	52.7	3	30.0	1220	35.8
	Don't want to answer	0	0	1	0.1	3	0.2	1	0.4	2	20.0	7	0.2

TABLE 3: COVID-19 FOOD CHOICE AND EATING BEHAVIOUR CHANGES BY AGE GROUP (N=3407)

		18-24 yrs		24-44 yrs		45-64 yrs		65+ yrs		Prefer not to say		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
Cooking and baking	**More**	228	76.0	1192	74.7	891	69.7	122	54.5	4	40.0	2437	71.5
	Less	15	5.0	37	2.3	23		6	2.7	0	0	81	2.4
	Same	57	19.0	362	22.7	363	28.4	93	41.5	4	40.0	879	25.8
	Don't want to answer	0	0	4	0.3	1	0.1	3	1.3	2	20.0	10	0.3
Consumption of takeaway / delivered restaurant food	**More**	24	8.0	113	7.1	67	5.2	15	6.7	0	0	219	6.4
	Less	194	64.7	1075	67.4	788	61.7	110	49.1	5	50.0	2172	63.8
	Same	82	27.3	406	25.5	416	32.6	95	42.4	3	30.0	1002	29.4
	Don't want to answer	0	0	1	0.1	7	0.5	4	1.8	2	20.0	14	0.4
Increased Food waste	**Yes**	54	18.0	286	17.9	182	14.2	33	14.7	2	20.0	557	16.3
	No	243	81.0	1306	81.9	1093	85.5	191	85.3	6	60.0	2839	83.3.
	Don't want to answer	3	1.0	3	0.2	3	0.2	0	0	2	20.0	11	0.3

TABLE 4: COVID-19 ALCOHOL BEHAVIOUR CHANGES BY AGE GROUP (N=3407)

	18-24 yrs		24-44 yrs		45-64 yrs		65+ yrs		Prefer not to say		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Drinking more frequently	56	18.7	560	35.2	364	28.5	36	16.0	1	10.0	1017	29.9
Drinking less frequently	137	45.7	278	17.5	145	11.4	23	10.2	0	0	583	17.1
Drinking different alcohol types	12	4.0	85	5.3	44	3.4	9	4.0	1	10.0	151	4.4
Drinking more standard drinks in a session	5	1.7	79	5.0	65	5.1	6	2.7	1	10.0	156	4.6
Drinking less standard drinks in a session	57	19.0	144	9.0	57	4.5	7	3.1	0	0	265	7.8
No change	89	29.7	645	40.4	670	52.4	146	64.9	4	40.0	1554	45.6
Don't want to answer	2	0.7	10	0.6	12	0.9	3	1.3	5	50.0	32	0.9

Results - Online Survey

REPORTED DIETARY INTAKES DURING COVID-19

The completion of a more detailed dietary assessment using Foodbook24, an online, self-administered, dietary assessment tool, was an optional aspect of the survey.

A total of 272 respondents completed a single 24 hour dietary recall using Foodbook24. Nutrient intakes expressed as mean energy, macronutrient and micronutrient intakes of the study population are presented in Table 5. The data presented in Table 5 is reflective of a single day's dietary intake and was calculated on reported food and beverage intake only, dietary supplements were not included. At a population level, dietary intake data showed overall low energy, protein and carbohydrate intake levels and a prevalence of insufficient intake for dietary fibre and vitamin D. Sufficient intakes of fat, iron, vitamin C and vitamin B12 intakes were observed however, intakes of saturated fat and sodium intake were in excess of recommended nutritional goals[14],[15]. As information on weight and height was not collected for each individual, data presented is as reported and not corrected/adjusted for under/over-reporting.

[14] Institute of Medicine. Dietary Reference Intakes: The essential guide to nutrient requirements. Washington (DC): The National Academies Press; 2006.
[15] Institute of Medicine. Dietary Reference Intakes for Calcium and Vitamin D. Washington (DC): The National Academies Press; 2010

Results - Online Survey

TABLE 5: NUTRIENT INTAKES REPORTED BY RESPONDENTS USING FOODBOOK24

Nutrient intake	Mean	SD[8]	IOM Nutritional Goals[2]
Energy (kcal/day)	1621	542.48	1800-2200 kcal/day
Energy (MJ/ day)	6.79	2.27	
Protein (g/day)	63.44	23.12	
% Energy Protein[1]	16.17	5.25	10-35%[3]
Carbohydrate (g/day)	186.70	74.73	
% Energy Carbohydrate[1]	45.97	11.06	45-65%[3]
Total Sugars (g/day)	75.38	40.57	
% Energy Total Sugars[1]	18.41	7.99	
Dietary Fibre (g/day)	19.02	9.61	28-33.6 g/day[4]
Total Fat (g/day)	65.00	30.15	
% Energy Total Fat[1]	35.73	10.48	20-35%[3]
Saturated Fat (g/day)	26.99	15.26	
%Energy Saturated Fat[1]	14.69	6.10	<10%[5]
Alcohol (g/day)	7.06	16.83	
% Energy Alcohol[1]	2.90	8.13	
Vitamin D (µg/10MJ	3.05	3.12	15 µg/day[6]
Vitamin B12 (µg/10MJ)	4.68	3.37	2.4 µg/day[6]
Vitamin C (mg/10MJ)	147.24	156.38	75-90 mg/day[6]
Calcium (mg/10MJ)	1063	435.63	1000 mg/day[6]
Iron (mg/10MJ)	14.40	5.38	8-18 mg/day[6]
Sodium (mg/10MJ)	2964	1189.70	2300 mg/day[7]

All data was energy adjusted (nutrient intakes were energy-adjusted, that is, the percentage of energy intake for macronutrients and gram per milligram per milligram (g/mg/mg) per 10 MJ energy intake for micronutrients).
1 All values presented as percentages
2 Institute of Medicine, Nutritional Daily Goals for Males and Females Aged 30-50 Years+ (2006, 2010)
3 AMDR = Acceptable Macronutrient Distribution Range
4 14 g fibre per 1,000 kcal = basis for AI for fibre
5 DGA = 2015-2020 Dietary Guidelines recommended limit.
6 RDA = Recommended Dietary Allowance,
7 UL = Tolerable Upper Intake Level,
8 Standard Deviation

Results - Online Survey

EXPENDITURE ON GROCERY SHOPPING DURING COVID-19

Participants were asked how much they normally spend per week on grocery shopping, pre-COVID-19 public health restrictions (Table 6). The 18-24 year olds reported the lowest spend per week on their pre-COVID-19 grocery shopping, with 44% reporting a spend of 50 euro or less, compared to 25% of 25-44 year olds, 11% of 45-65 year olds and 18.5% of over 65 year olds (Table 6). The majority of respondents in the 25-44 age category spent 50-99 euro on weekly groceries (42.4%), and 30% spent 100-200 euro, while those in the 45-64 year old bracket spent slightly more, with 35.2% in the 50-99 euro and 45% in the 100-200 euro category. The majority of the over-65s spent between 50-99 euros a week (48.5%) and 100-200 euros a week (30.8%) (Table 6). At a total population level, 39% reported changes in expenditure on food during the COVID-19 restrictions, with the highest levels (44%) reported in 24-44 year olds, with only 19% of those 65 years and greater reporting a change (Table 7).

TABLE 6 – REPORTED WEEKLY EXPENDITURE ON FOOD SHOPPING (PRE-COVID-19), SPLIT BY AGE GROUP

	<50 euro		50-99 euro		100-200 euro		200-300 euro		>300 euro		Don't want to answer	
Age	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	143	43.7	100	30.6	55	16.8	12	3.7	1	0.3	16	4.9
25-44 yrs	407	24.1	718	42.4	507	30.0	52	3.1	3	0.2	5	0.3
45-64 yrs	149	11.0	477	35.2	610	45.0	108	8.0	7	0.5	5	0.4
65 + yrs	48	18.5	126	48.5	80	30.8	5	1.9	1	0.4	0	0.0
Prefer not to say / Don't want to answer	1	6 .7	6	40.0	2	13.3	1	6.7	0	0.0	5	33.3

TABLE 7 - REPORTED CHANGES IN THE AMOUNT SPENT ON FOOD SHOPPING DURING COVID-19, SPLIT BY AGE GROUP.

	Yes - Change		No Change		Not applicable	
Age Group	**n**	**%**	**n**	**%**	**n**	**%**
18-24 yrs	90	30	174	58	36	12
25-44 yrs	755	47	698	44	143	9
45-64 yrs	461	36	669	52	148	12
65 + yrs	43	19	166	74	16	7
Prefer not to say / Don't want to answer	1	10	8	80	1	10
Total	1350	39.6	1715	50.3	344	10.1

Results - Online Survey

WEIGHT CHANGE AND EXERCISE CHANGES DURING COVID-19

Overall, within the National COVID-19 Food Study 44% of the respondents reported that their weight had stayed the same, 30.2% reported an increase in weight, 15.2% reported a decrease, while the remainder did not know (10.8%), or did not want to answer (0.1%) (Table 8). Considering males and females, a slightly greater % of females reported weight gain (31%) vs males (26.7%), and a slightly lower % of females reported losing weight (15%) vs males (17.2%) or stayed the same weight (43% in females vs 46% in males) (Table 8). Looking at the age groups, the % reporting weight gain was slightly lower in the 18-24 year olds (16.7%) compared to the other age groups (28.1-32.6%). The oldest age group (65 years and over) was also slightly more likely to report staying the same weight (53.1%) compared to the other groups (39.7-46.6%). This was in agreement with the pattern of exercise (Table 9).

Almost 60% of the youngest age group reported that they were exercising more frequently. The percentage of respondents reporting an increase in exercise frequency decreased with age, with just 36.6% of the over-65s having an increase in exercise frequency during COVID-19 (Table 10).

Results - Online Survey

The percentage of people within the National COVID-19 Food Study reporting a decrease in their levels of exercise ranged from 22-34%, and was highest in the over 65s, while the % who stayed the same ranged from 15.7 % to 28.6% (Table 10). Eurostat [16] data of pre-COVID-19 physical activity levels in Ireland show that the highest rates occur in the younger age groups, and that rates decrease steadily with age. This suggests that those older groups may have been even more severely impacted by the coronavirus pandemic than younger groups in relation to physical activity since they were already at greater risk of insufficient levels.

When asked whether they had experienced a change in the type of exercise they engage in, many participants reported that they had, and the rates ranged from 51.6% in the oldest age group (over 65s), to 65% in the 18-24 year olds reporting a change in the type of activity (Table 11).

Data from Eurostat [16] shows that on average in Ireland, (pre-COVID-19), 45.8% of people aged 15 and over report engaging in aerobic activity at least once a week. 13.5% engage in cycling to get to or from a place at least once a week, 86.2% report walking, and 34.3% engage in muscle strengthening activity at least once a week.

[16] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health-enhancing_physical_activity_statistics#Non-work-related_physical_activity

TABLE 8: WEIGHT CHANGE AND EXERCISE BEHAVIOUR DURING COVID-19

	Gained		Lost		Stayed the same		Don't know		Prefer not to Answer		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Total Population	698	30.2	519	15.0	1484	44.0	364	11.0	3	0	3394	100
Men	163	26.7	105	17.2	282	46.2	61	10.0	0	0	611	18.0
Women	861	31.0	414	15.0	1202	43.0	303	11.0	3	0	2783	82.0

TABLE 9: WEIGHT CHANGE DURING COVID-19, SPLIT BY AGE GROUP

	Gained		Lost		Stayed the same		Don't know		Prefer not to answer		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	50	16.7	58	19.3	136	45.3	55	18.3	1	0.3	300	8.8
25-44 yrs	497	31.2	261	16.4	633	39.7	204	12.8	0	0.0	1595	46.8
45-64 yrs	417	32.6	172	13.5	596	46.6	91	7.1	2	0.2	1278	37.5
65+ yrs	63	28.1	27	12.1	119	53.1	15	6.7	0	0.0	224	6.6
Prefer not to say / Don't want to answer	1	10.0	1	10.0	5	50.0	2	20.0	1	10.0	10	0.3

TABLE 10: CHANGE IN THE AMOUNT OF EXERCISE DURING COVID-19, SPLIT BY AGE GROUP

	Exercising more often		Exercising less often		Stayed the same		Don't know		Don't want to answer		Total	
Age	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
18-24 yrs	173	57.7	76	25.3	47	15.7	4	1.3	0	0.0	300	8.8
25-44 yrs	887	55.6	421	26.4	280	17.6	7	0.4	0	0.0	1595	46.8
45-64 yrs	702	54.9	283	22.1	287	22.5	4	0.3	2	0.2	1278	37.5
65+ yrs	82	36.6	76	33.9	64	28.6	2	0.9	0	0.0	224	6.6
Don't want to answer	3	30.0	1	10.0	4	40.0	0	0.0	2	20.0	10	0.3

TABLE 11: CHANGE IN THE TYPE OF EXERCISE DURING COVID-19, SPLIT BY AGE GROUPP

	Yes		No		Don't want to answer		Total	
	n	%	n	%	n	%	n	%
18-24 years	195	65.0	97	32.3	8	2.7	300	8.8
25-44 years	1033	64.8	547	34.3	15	0.9	1595	46.8
45-64 years	659	51.6	608	47.6	11	0.9	1278	37.5
65 years and over	123	54.9	101	45.1	0	0.0	224	6.6
Prefer not to say / Don't want to answer	3	30.0	4	40.0	3	30.00	10	0.3

Results - Online Survey

CHANGES IN EMPLOYMENT AND WORKING STATUS DURING COVID-19

Within the National COVID-19 Food Study between 23-30% of those aged under 65 reported no change at all in their employment (Table 12). This was much greater in the over 65s, with 74% reporting no change in employment status, although this may be reflective of the fact that many in that age bracket may have retired from the workforce.

Job loss was greatest in the 18-24 year old category at 10%, 5% and 7% in the 25-44 year olds and 45-64 year olds respectively, and lowest (3%) in the over-65s (Table 12). Again this may be reflective of the greater levels of retirement in the older age category. Aside from the large proportion of the over 65s reporting no change, the most common responses were no change in job, but working from home, which ranged from 29-39% of responses in those aged under 65.

Those in the 25-44 and 45-64 year age groups also reported working from home while also caring for a family member (17% in each age group, vs 2 and 3% in 18-24s and over 65s, respectively). Again this is likely reflective of those with children at home. When looking at the employment shift in men and women, the rates were similar for those reporting no change at all, or working from home (Table 12). However females were more likely to report working at home while caring for family members, at 16.1% vs 9.5% in males, and were also slightly more likely to report job losses (4.9% in males and 6.4% in females) (Table 13).

Results - Online Survey

Income was not affected in ¾ of the older respondents (70-85% reported no change in income in the 25-44, 45-64 and over 65 age groups) (Table 14).

No change was likely to reflect the large number who would be receiving a pension. Just 53% of the youngest age group reported no change in income. The rates of increases in incomes were very low in the older age groups (1-3%), while 15% of the 18-24 year olds reported an increase in their income (Table 14). Those reporting a decrease in income ranged from 22-28% in those of usual working age, and 13% in the over 65s. When considering the changes in income by gender, males and females reported similar levels of 'no change' (72% and 71%), of increases (3.8 and 3.2% respectively) and of decreases (23 and 25% respectively) (Table 15).

TABLE 12 REPORTED CHANGES IN EMPLOYMENT / WORKING STATUS DURING COVID-19, SPLIT BY AGE GROUP

Age	18-24 yrs		24-44 yrs		45-64 yrs		65+ yrs		Prefer not to say	
	n	%	n	%	n	%	n	%	n	%
No change at all	74	7.5	371	37.7	382	38.8	154	15.7	3	0.3
No change in job, working from home	89	8.1	624	56.9	364	33.2	20	1.8	0	0.0
No change in job, working from home, caring for family member(s)	7	1.4	277	54.4	219	43.0	6	1.2	0	0.0
Loss of job	31	15.0	78	37.7	90	43.5	7	3.4	1	0.5
Not permitted to do job due to COVID-19 restrictions	66	16.5	158	39.4	162	40.4	14	3.5	1	0.2
Change of job / new job	13	12.6	45	43.7	34	33.0	11	10.7	0	0.0
Don't know / prefer not to say	17	23.9	32	45.1	14	19.7	6	8.5	2	2.8
Don't want to answer	3	8.8	10	29.4	13	38.2	5	14.7	3	8.8

TABLE 13 REPORTED CHANGES IN EMPLOYMENT / WORKING STATUS DURING COVID-19, SPLIT BY GENDER

	Males		Females		Prefer not to say	
	n	%	n	%	n	%
No change at all	199	32.6	795	28.6	1	7.7
No change in job, but working from home	206	33.7	887	31.9	4	30.8
No change job, but working from home & caring for family member(s)	58	9.5	448	16.1	3	23.2
Loss of job	30	4.9	177	6.4	0	0
Not permitted to do job due to COVID-19 restrictions	83	13.6	318	11.4	0	0
Change of job / new job	17	2.8	76	2.7	0	0
Don't know / prefer not to say	12	2.0	57	2.0	3	15.4
Don't want to answer	6	1.0	25	9.9	3	23.1

TABLE 14 REPORTED CHANGES IN INCOME DURING COVID-19, SPLIT BY AGE GROUP

Age	18-24 yrs		24-44 yrs		45-64 yrs		65+ yrs		Prefer not to say	
	n	%	n	%	n	%	n	%	n	%
No change at all	159	53.0	1166	73.1	894	70.0	191	85.3	3	30.0
Yes, an increase in income	46	15.3	46	2.9	17	1.3	3	1.4	0	0.0
Yes, a decrease in income	80	26.7	356	22.3	358	28.0	30	13.4	3	30.0
Don't know/prefer not to say	12	4.0	23	1.4	8	0.6	0	0	2	20.0
Don't want to answer	3	1.0	4	0.3	1	0.1	0	0	2	20.0

TABLE 15 REPORTED CHANGES IN INCOME DURING COVID-19, SPLIT BY GENDER

	Males		Females		Prefer not to say	
	n	%	n	%	n	%
No change at all	442	62.2	1964	70.6	7	70.0
Yes, an increase in income	23	3.2	89	3.2	0	0
Yes, a decrease in income	140	19.7	5	0.2	1	10.0
Don’t know/prefer not to say	5	0.7	40	1.5	0	0
Don't want to answer	1	0.1	7	0.3	2	20.0

Results - Online Survey

CHANGE IN HEALTH STATUS DURING COVID-19

At the time of completing the National COVID-19 Food Study respondents mostly reported being in very good (47%) or good health (42%) (Table 1).

Participants were asked about their existing health status and any changes in health status during the COVID-19 restrictions within the survey. Those reporting a change in their health status ranged from 7% - 14.2 %, with the lowest rates in the 18-24 year old age group and the higher rate in the 45-64 years age group (Table 16). When split by gender, 10.6% of males and 13.2% of males reported a change in health status (Table 17). It is important to note that no information on the cause or severity of health change was collected within this survey, so no link to COVID-19 and/or associated symptoms can be made.

TABLE 16 REPORTED CHANGES TO HEALTH DURING COVID-19, BY AGE GROUPS

	Yes		No		Don't want to answer	
Age	**n**	**%**	**n**	**%**	**n**	**%**
18-24 yrs	21	7.0%	272	90.7%	7	2%
25-44 yrs	203	12.7%	1379	86.5%	13	1%
45-64 yrs	182	14.2%	1083	84.7%	13	1%
65+ yrs	29	12.9%	195	87.1%	0	0%
Prefer not to say / Don't want to answer	0	0.0%	8	80.0%	2	20%

TABLE 17 REPORTED CHANGES TO HEALTH DURING COVID-19, BY GENDER

	Yes		No		Don't want to answer	
	n	%	n	%	n	%
Male	65	10.6	539	88.2	7	1.1
Female	368	13.2	2390	85.9	25	0.9
Prefer not to answer	2	15.4	8	61.5	3	23.1

Results - Online Survey

REPORTED PERCEPTIONS OF FOOD SECURITY DURING COVID-19 RESTRICTIONS

About 20% of the total population reported being concerned that the household would not have enough food during the COVID-19 public health restrictions (table 16), with about 25% reporting that at some point they could not consume their preferred foods (table 18).

There were no differences across between males and females but these concerns were more common at 25% in the younger age groups (18-24 & 25-44 years) compared to older age groups (tables 23 and 24) (18% in the 45-64 year olds and 11% in the over-65s). 20% of the total population reported having to eat a limited variety of foods (table 19), and about 10% reported having to consume food that they didn't want due to lack of food availability (table 20). Again, this was more commonly reported in the younger age groups (18-24 & 25-44 years).

Only 5% of the total population reported having no food to eat in their household, and when considered by age-group, this was primarily reported in the younger age groups (tables 21 and 28). Only 5% of the cohort reported having no food in the household or going to bed hungry (tables 21 & 22), there was no difference between males and females or age groups (tables 28 & 29).

TABLE 18 – REPORTED FREQUENCY OF WORRY THAT HOUSEHOLD WOULD NOT HAVE ENOUGH FOOD IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	N	%	n	%	n	%	n	%	n	%	n	%
Total	3017	79	584	15	193	5	30	1	2	0	6	0
Male	553	81	96	14	22	3	7	1	0	0	1	0
Female	2456	78	485	16	169	5	23	1	2	0	2	0
Prefer not to say	8	50	3	19	2	13	0	0	0	0	3	19

TABLE 19 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER NOT BEING ABLE TO EAT PREFERRED FOODS DUE TO A MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	2818	74	732	19	237	6	35	1	5	0	5	0
Male	510	81	118	14	42	3	8	1	1	0	0	0
Female	2302	78	609	16	194	5	26	1	4	0	2	0
Prefer not to say	6	50	5	19	1	13	1	0	0	0	3	19

TABLE 20 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3079	80	534	14	177	5	35	1	2	0	5	0
Male	551	81	80	14	35	3	8	1	1	0	0	0
Female	2517	78	453	16	142	5	26	1	1	0	1	0
Prefer not to say	11	50	1	19	0	13	1	0	0	0	4	19

TABLE 21 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT SOME FOODS THEY REALLY DID NOT WANT TO EAT, DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3416	89	318	8	85	2	6	0	3	0	4	0
Male	616	81	43	14	16	3	3	1	1	0	0	0
Female	2790	78	273	16	68	5	3	1	2	0	1	0
Prefer not to say	10	50	2	19	1	13	0	0	0	0	3	19

TABLE 22 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT SMALLER OR FEWER MEALS THAN DESIRED/NEEDED BECAUSE OF LACK OF FOOD IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3644	95	139	4	34	1	5	0	4	0	6	0
Male	638	81	30	14	9	3	0	1	2	0	0	0
Female	2995	78	107	16	25	5	5	1	2	0	3	0
Prefer not to say	11	50	2	19	0	13	0	0	0	0	3	19

TABLE 23 - REPORTED FREQUENCY OF NO FOOD TO EAT, OF ANY KIND, IN YOUR HOUSEHOLD DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3761	98	50	1	15	0	1	0	0	0	5	0
Male	666	81	8	14	4	3	0	1	0	0	1	0
Female	3082	78	42	16	11	5	1	1	0	0	1	0
Prefer not to say	13	50	0	19	0	13	0	0	0	0	3	19

TABLE 24 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER GOING TO BED HUNGRY BECAUSE OF LACK OF FOOD IN THE PAST 4 WEEKS, SPLIT BY GENDER

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes – often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
Total	3785	99	27	1	13	0	1	0	2	0	4	0
Male	669	81	5	14	3	3	0	1	2	0	0	0
Female	3103	78	22	16	10	5	1	1	0	0	1	0
Prefer not to say	13	50	0	19	0	13	0	0	0	0	3	19

TABLE 25 – REPORTED FREQUENCY OF WORRY THAT HOUSEHOLD WOULD NOT HAVE ENOUGH FOOD IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	269	76	66	19	15	4	4	1	1	0	0	0
25-44 yrs	1345	76	313	18	103	6	17	1	0	0	2	0
45-64 yrs	1156	82	175	12	67	5	9	1	0	0	1	0
65+ yrs	242	89	25	9	5	2	0	0	0	0	0	0
Prefer not to say	5	29	5	29	3	18	0	0	1	6	3	18

TABLE 26 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER NOT BEING ABLE TO EAT PREFERRED FOODS DUE TO A MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	216	61	99	28	33	9	7	2	0	0	0	0
25-44 yrs	1245	70	389	22	129	7	14	1	2	0	1	0
45-64 yrs	1114	79	213	15	67	5	11	1	2	0	1	0
65+ yrs	234	86	28	10	8	3	1	0	1	0	0	0
Prefer not to say	9	53	3	18	0	0	2	12	0	0	3	18

TABLE 27 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	262	74	65	18	24	7	4	1	0	0	0	0
25-44 yrs	1406	79	259	15	93	5	20	1	1	0	1	0
45-64 yrs	1162	83	181	13	55	4	10	1	0	0	0	0
65+ yrs	239	88	27	10	5	2	0	0	1	0	0	0
Prefer not to say	10	59	2	12	0	0	1	6	0	0	4	24

TABLE 28 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes – rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	301	85	41	12	11	3	1	0	1	0	0	0
25-44 yrs	1584	89	151	9	39	2	4	0	1	0	1	0
45-64 yrs	1272	90	102	7	32	2	1	0	1	0	0	0
65+ yrs	249	92	21	8	2	1	0	0	0	0	0	0
Prefer not to say	10	59	3	18	1	6	0	0	0	0	3	18

TABLE 29 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	331	93	13	4	7	2	1	0	2	1	1	0
25-44 yrs	1682	95	81	5	14	1	1	0	1	0	1	0
45-64 yrs	1353	96	40	3	11	1	3	0	1	0	0	0
65+ yrs	265	97	4	2	2	1	0	0	0	0	1	0
Prefer not to say	13	77	1	6	0	0	0	0	0	0	3	18

TABLE 30 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	342	96	10	3	3	1	0	0	0	0	0	0
25-44 yrs	1743	98	28	2	8	0	0	0	0	0	1	0
45-64 yrs	1391	99	12	1	4	0	1	0	0	0	0	0
65+ yrs	271	100	0	0	0	0	0	0	0	0	1	0
Prefer not to say	14	82	0	0	0	0	0	0	0	0	3	18

TABLE 31 - REPORTED FREQUENCY OF HOUSEHOLD MEMBER HAVING TO EAT A LIMITED VARIETY OF FOODS DUE TO A LACK OF MONEY/TIME OR UNAVAILABILITY IN THE PAST 4 WEEKS, SPLIT BY AGE GROUP

	No		Yes - rarely (1-2 times)		Yes - sometimes (3-10 times)		Yes - often (>10 times)		Don't know		Don't want to answer	
	n	%	n	%	n	%	n	%	n	%	n	%
18-24 yrs	343	97	8	2	4	1	0	0	0	0	0	0
25-44 yrs	1764	99	7	0	7	0	0	0	1	0	1	0
45-64 yrs	1392	99	12	1	2	0	1	0	1	0	0	0
65+ yrs	272	100	0	0	0	0	0	0	0	0	0	0
Prefer not to say	14	82	0	0	0	0	0	0	0	0	3	18

Results - Interviews with community & advocacy groups

The community and advocacy groups reported a significant impact of COVID-19 restrictions on the vulnerable members of society, these are summarised in Table 32 and will be analysed further using detailed thematic analysis for future publications.

Across the board, agencies reported an increase in demand for their food provision services. At a household level, since people were staying at home and consuming more food, this additional cost was a daily stressor. Families with young children, who may ordinarily have benefitted from breakfast, snacks and lunches as part of the school meal schemes, were struggling to 'keep food in the press' and experiencing acute levels of financial strain (table 32).

Parents were very stressed trying to do their shopping, particularly if they had young children, who were not permitted into the shops or supermarkets. Other families couldn't access online shopping facilities as they didn't have a debit or credit card. This was particularly challenging if people tested positive for COVID-19 and were in self-isolation but didn't have family or friends to help with shopping.

Results - Interviews with community & advocacy groups

Community and advocacy groups reported that they have been supporting families who have never sought help for food provision previously. Often this was as a direct impact of the main earners in a household who suddenly became unemployed, reliant on income supplements to pay household bills, and they were embarrassed by the fact they were now accessing food provision services (Table 32).

Those who were already experiencing homelessness or living in sheltered accommodation experienced an exacerbation of social stressors during COVID-19 restrictions. Again, social distancing introduced greater complexity for service provision, including the number of individuals who could be offered daily meals in shelters or queuing for soup-runs on the streets.

The restrictions had a major impact on vulnerable people accessing day centres for meal provision. There were reports of older adults changing their food purchases, such as buying products with longer shelf life or rationing certain perishable foods. More older adults applied for food hampers and meals on wheels services during lockdown as food supply was limited. In some instances, the food hamper and meal deliveries worked for certain groups. However, for others, some hampers were not appropriate to the needs of the individual or household either through a lack of cooking or storage facilities, culturally inappropriate foods being provided or lack of consideration for food preferences (Table 32).

Results - Interviews with community & advocacy groups

At an operational level, there appeared to be a multiple of interagency and charitable organisations who were feeding what appears to be a significant proportion of the population experiencing food poverty. While there was some government funding available, these organisations were, and are still, reliant on the support of charitable donations and volunteers to distribute foods to those in need. Social restrictions removed their ability to source funding and several voluntary-based organisations had to introduce payment to staff to ensure food was being provided, all of which has left a significant debt burden.

Allied to food poverty issues, the community and advocacy groups emphasised the major mental burden the COVID-19 restrictions were having across all vulnerable groups. People were concerned about continued social isolation and what the future would hold, particularly if they were faced with increased heating, electricity costs in the winter months. Vulnerable homeless, or those with addiction issues, were reported to have experienced an exacerbation of social stressors during COVID-19. Movement from hostels or between social housing brought both positive and negative impacts. The increased cost of staying at home was felt very acutely by the poorer members of society and was a daily struggle and stressor for people. More people in the home for longer and consuming more food and costing more.

Results - Interviews with community & advocacy groups

Social isolation was a big concern and its longer-term impact on mental and physical health was a real challenge that advocacy groups were very worried about and how this would be managed in a second or subsequent wave of restrictions. Increased domestic violence noted as an issue for some advocacy groups.

Results - Interviews with community & advocacy groups

TABLE 32 – SUMMARY OF KEY POINTS FROM STRUCTURED INTERVIEWS

Group type	Key Points from Interview
Social enterprise and support agency for older people/low-income families/homeless/abuse victims	• There was a significant increase in demand for meal provision, such as food hampers, for cocooning vulnerable people, and significant logistical challenges in scaling operations to meet these demands with the social distancing restrictions. • These changes in food access and the logistics of providing food/meals could have a significant and long-term impact on day centre users. • The volunteer pool was decreased as this is generally made up of older people, who were restricting their movements. Thus, there is a need for more people to become involved, from younger age groups. • Obtaining suitable accommodation for homeless was a challenge with social distancing, and there were significant logistical issues in providing food for this group. • Spending more time at home resulted in increased money pressures due to higher electricity and food bills, with more people at home, combined with reduced access to school meals and other support schemes. • Proper second wave planning is needed as heating costs, plus food access, plus new essentials like WIFI will be too much burden on vulnerable families
Addiction support agency	• Home visits to support clients with addictions increased during COVID-19 restrictions, and many clients were seeking support for food provision. • With everyone confined to their homes, this highlighted an issue with cooking facilities which was previously unconsidered. This support agency saw challenges with the need to support food provision amongst clients with limited cooking facilities including, for example, no cooker, no fridge, or only a microwave. • There are multi-faceted complex needs in this group which makes it hard to get clear picture of food provision issues and needs of this group. For example, with those with an active addiction – food is not their focus, with clients getting food when and where they could. For those in recovery, there are often significant home problems with health and conflict, thus food is often not the key focus. • Whilst some food provisions were provided, it was important to assess each individual's cooking facilities and two types of food parcels were needed for those with cooking facilities and those without. • Funding commitment needed to support increased demand on services.
Public health nursing	• Significant issues within the role of public health nursing in COVID-19, due to increase in the isolation of many clients, which put pressure on transport and access to services. • Many clients reported significant food shortages, often for specific foods such as flour, for example. • Many reported an increase in the cost of food shopping, which was exacerbated by the additional lack of access to

Results - Interviews with community & advocacy groups

TABLE 32 - SUMMARY OF KEY POINTS FROM STRUCTURED INTERVIEWS - CONTD

	community meals services.
Carers support agency	• For many clients there were financial implications and pressures due to the COVID-19 restrictions. Household bills and cost of living was perceived to have increased, which alongside reduced ability to work, significantly impacted some. • For many caring for a family member within their own home there was no respite, and a sense of increased isolation. In some situations, this exacerbated behavioural issues due to the lack of normal routine/services. • Closure of supports such as schools added to existing stress. • There were reported issues accessing specialist items, with those needing such products concerned about going to the shops, and thus increasing the risk of catching and transmitting COVID-19. • Some reported that the protected shop times didn't match with different groups needs and some needed to bring dependants with them for safety, which was sometimes not allowed or discouraged. • This group felt that this situation may make the wider society realise and perhaps have more empathy for the work of home carers who live and work in their situation 24/7. • Some described this as a 'lockdown within lockdown'
Integrated Development - Social Enterprise	• COVID-19 crisis introduced new problems, with over 10% of clients now stating they need food assistance, and many new clients adjusting to living on social support. It became challenging to identify those who really needed the support most urgently. • This group noted becoming aware of a new group needing their assistance - households where 2 people have suddenly become unemployed and were unprepared for the impact and circumstances. Those who were already receiving support, pre COVID-19 seemed less affected, suggesting that those who knew where the supports were coped better than those new to the situation.
Older adult support agency/charity	• More older adults applying for food hampers, and meal on wheels during the lockdown, as food supply was reported to be limited in a lot of cases. • Shopping online proved very difficult for many older adults as some don't have access to debit/ credit cards, and were not used to this method of shopping. • Some older adults reportedly changed their food purchases, buying more products with longer shelf life, to reduce the frequency they needed to shop. Some rationed food themselves e.g. limiting themselves to 2 slices of bread per day in some instances, to make food last until the next shop.

UCD Institute of Food and
Health, University College
Dublin, Ireland

www.ucd.ie/foodandhealth