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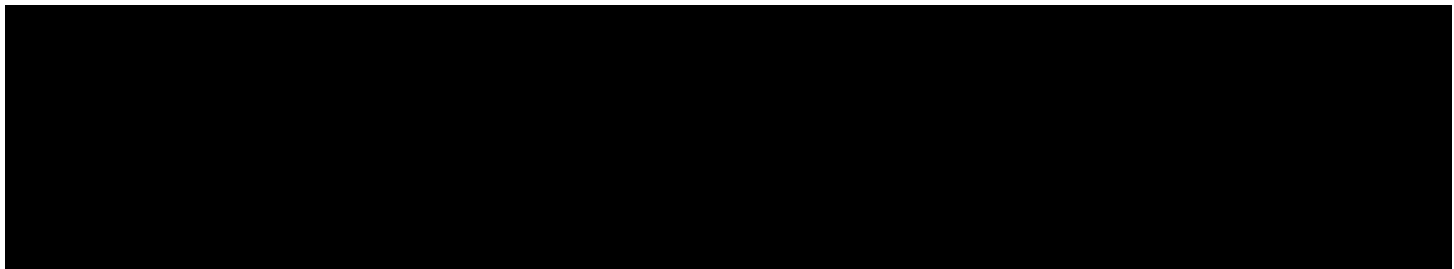
HSC R&D Behaviour Change Group

What are Shops Doing to Prevent the Spread of Coronavirus?

Report No: 1, COVID-19 Behaviour Change Cell
Date: 15 July 2020

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Executive Summary

In response to the COVID-19 pandemic, a wide range of measures have been recommended by the government to prevent the transmission of the disease while shopping. On behalf of the Public Health Agency (PHA) Behaviour Change COVID-19 cell we worked with members of the public to audit the measures that have been introduced in 131 different shops. In addition, shoppers rated how safe they felt.

Most of the shops included were supermarkets (63/131). Most people felt safe or very safe (63%) in shops. Many shops limited the number of people in the store at one time (84%) and this consequently required customers to queue outside. The average queuing time was 7.7 minutes.

Most shops provided clear information on social distancing and hygiene on arrival, which was supplemented with floor markings to aid social distancing.

The most common measures seen inside shops included:
- Transparent barriers at tills
- Limiting numbers of people in the shop
- Floor markings to aid social distancing

Hand sanitiser was provided to customers in three quarters of shops. However, most customers and staff were observed not wearing face coverings. This was also noted by respondents in free text comments. They also noted that some customers do not adhere to the social distancing measures in place and noted some areas where hygiene could be improved. The importance of accessibility of toilets to facilitate shopping for certain population groups was also highlighted. Overall, respondents were generally complimentary of the helpfulness of shop staff.

Cite as:

███████████████████████ on behalf of the Public Health Agency Behaviour Change Group. What are Shops Doing to Prevent the Spread of Coronavirus? Report No: 1. Public Health Agency: Belfast; 2020.

Introduction

In March 2020, the World Health Organisation declared the COVID-19 outbreak a global pandemic. In response, the government have introduced a wide range of measures to prevent transmission. Shops are one location where members of the public come in close contact with each other in an indoor environment and therefore guidance has been issued to minimise risk.

Between 20th June and 2nd July 2020, we collected information on the measures shops have taken to prevent the spread of COVID-19. This was conducted on behalf of the Public Health Agency (PHA) Behaviour Change COVID-19 cell. Members of the public and the PHA were asked, via social media and email contact lists, to record their experience of shops in the previous month using an online questionnaire.

This anonymous survey sought to understand the measures in place across a variety of shops to prevent the transmission of COVID-19. Respondents completed a short questionnaire, that was based on the advice provided at the time to shop owners on NIDirect, the central Northern Ireland Government advice hub for coronavirus. This guidance includes providing information such as signage, measures to limit contact between customers such as limiting the number of customers in the store, introducing hygiene measures such as encouraging customers to use hand sanitiser or handwashing facilities as they enter the premises, and measures to protect customers and staff such as the use of face coverings. Assurance was provided that individual shops/staff members would not be identified.

Survey Sample

In total, the survey was completed 146 times. Where a shop was recorded more than once (i.e. the same store location), the first recorded information about that store was utilised. We cross-checked responses for the same store against each other and found the responses to be consistent. After the removal of duplicate stores, 131 different shops were included (Table 1).

Of these 131 shops, 57 (39%) were in the greater Belfast area. The majority (61; 46.6%) of these were large supermarkets or local convenience stores (23; 17.6%). For the purposes of further analyses, we have grouped the shops where there were two or less responses together into an 'other' category. Responses are presented as the frequency and percentage for each type of shop and overall.

Table 1: Types of Shops included

Type of shop	Number of shops	Percentage (%)
Supermarket	61	46.6
Local convenience store	23	17.6
Department or Clothes store	12	9.2
Butcher	6	4.6
Pharmacy	5	3.8
Petrol station	5	3.8
Sports shop	3	2.3
Café or Ice cream	3	2.3
Off licence	2	1.5

DIY Store	2	1.5
Bakery	1	0.8
Computer/software	1	0.8
Electrical retail	1	0.8
Farm shop	1	0.8
General store	1	0.8
Gift Shop	1	0.8
Greengrocer	1	0.8
Printers	1	0.8
Shopping centre	1	0.8

Exploratory Statistics

We have correlated the presence of measures in shops with the reported feeling of safety. The resulting correlation co-efficient is a value from -1 (negative correlation) to 1 (positive correlation). A higher value represents better correlation.

Correlation coefficients can be interpreted as follows:
0.0-0.19 = "very weak"
0.20-0.39 = "weak"
0.40-0.59 = "moderate"
0.60-0.79 = "strong"
0.80-1.0 = "very strong"

The correlations should be interpreted with caution. Where a statistically significant relationship with feelings of safety is indicated, these are not independent of the influence of other measures that shops have introduced.

Shopping Experience

Respondents rated how safe they felt in shops on a scale of 1 (very unsafe) to 5 (very safe). The average response across all shops was 3.68 out of 5 and just under two thirds of respondents reported feeling safe or very safe (Figure 1), There were relatively similar responses across all types of shops (Table 2).
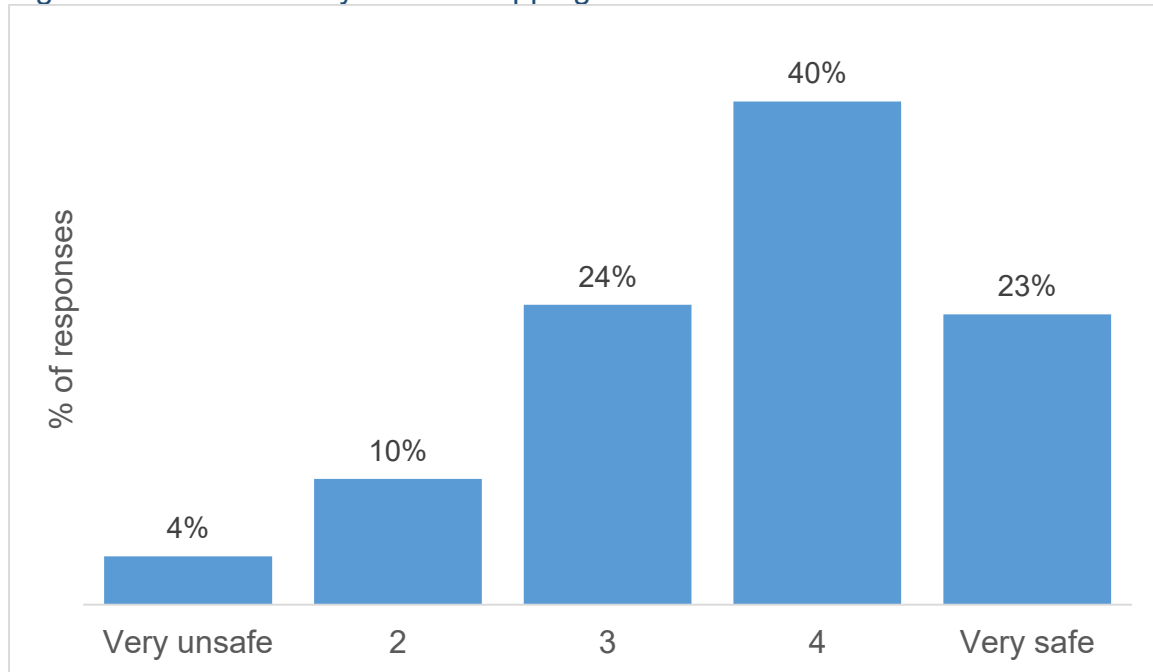
Figure 1: How safe did you feel shopping?

Figure 1: How safe did you feel shopping?

Table 2: How safe did you feel in the shop (1=very unsafe; 5=very safe)?

	Type of Shop								
	Supermarket	Local Convenience Store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Café or Ice cream	Other
Responses	61	23	12	6	5	5	3	3	13
Mean Safety rating	3.52	3.48	3.67	4.17	3.8	3.46	4	4	4.15

Queues indicated shops were limiting the number of people in the shop at any one time. Of the 131 shops, 73 required the customer to queue outside. The average length of this queue was 7.7 minutes, ranging from 1 to 30 minutes (Table 3). There was a very weak non-significant correlation between queuing and feeling of safety (0.17, p=0.06).

Table 3: How long did you queue for (minutes)?

	Type of Shop								
	Supermarket	Local Convenience Store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Café or Ice cream	Other
Responses	36	11	5	5	2	3	1	2	8
Average time queuing (mins)	8.33	4.64	9	5	7.5	4.33	25.00	7.50	9.25

Changes to the Shopping Environment

In terms of how shops have adapted the way they operate (Table 4), most (84.7%) were limiting the number of people allowed in the shop at one time, through either signage or via a member of staff at the door. In over half of shops (57.3%), a one-way system was in place inside the shop. A very high proportion (87.8%) also had transparent barriers at the tills. Few shops restricted the handling of goods (11.5%). Over half (55%) also indicated the shop preferred contactless payment.

Significant weak to moderate correlations were observed between the use of one way systems, restrictions on handling products, contactless payment, availability of click and collect or telephone orders and the use of transparent barriers at tills (Table 5).

Table 4: How shops were organised to prevent the transmission of COVID-19

			Type of Shop									Total
			Supermarket	Local Convenience Store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Cafe/ Ice cream	Other	
Was there a limit on the number of people allowed in the store?	No	Responses	6	7	0	1	1	1	0	0	0	16
		%	9.8%	30.4%	0.0%	16.7%	20.0%	20.0%	0.0%	0.0%	0.0%	12.2%
	Yes	Responses	33	8	7	5	3	2	1	2	10	71
		%	54.1%	34.8%	58.3%	83.3%	60.0%	40.0%	33.3%	66.7%	76.9%	54.2%
	A member of staff monitored customers entering	Responses	22	7	5	0	1	2	1	0	2	40
		%	36.1%	30.4%	41.7%	0.0%	20.0%	40.0%	33.3%	0.0%	15.4%	30.5%
	I cannot remember	Responses	0	1	0	0	0	0	1	1	1	4
		%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	33.3%	33.3%	7.7%	3.1%
Was a one way system in place?	No	Responses	27	6	4	2	2	1	2	1	6	51
		%	44.3%	26.1%	33.3%	33.3%	40.0%	20.0%	66.7%	33.3%	46.2%	38.9%
	Yes	Responses	33	15	7	4	3	4	1	2	6	75
		%	54.1%	65.2%	58.3%	66.7%	60.0%	80.0%	33.3%	66.7%	46.2%	57.3%
	I cannot remember	Responses	1	2	1	0	0	0	0	0	1	5
		%	1.6%	8.7%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	3.8%
Were there any restrictions on handling products whilst browsing?	No	Responses	56	20	7	2	3	3	2	2	8	103
		%	91.8%	87.0%	58.3%	33.3%	60.0%	60.0%	66.7%	66.7%	61.5%	78.6%
	Yes	Responses	2	0	2	4	1	1	1	0	4	15
		%	3.3%	0.0%	16.7%	66.7%	20.0%	20.0%	33.3%	0.0%	30.8%	11.5%
	I cannot remember	Responses	3	3	3	0	1	1	0	1	1	13
		%	4.9%	13.0%	25.0%	0.0%	20.0%	20.0%	0.0%	33.3%	7.7%	9.9%
	No	Responses	8	0	7	0	0	0	1	0	1	17

Question	Answer	Measure										
If applicable, were customer fitting rooms open?		%	13.1%	0.0%	58.3%	0.0%	0.0%	0.0%	33.3%	0.0%	7.7%	13.0%
	Yes	Responses	0	0	1	0	0	0	0	0	0	1
		%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
	I cannot remember	Responses	10	1	3	0	0	0	1	0	0	15
		%	16.4%	4.3%	25.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	11.5%
	Not applicable	Responses	43	22	1	6	5	5	1	3	12	98
		%	70.5%	95.7%	8.3%	100.0%	100.0%	100.0%	33.3%	100.0%	92.3%	74.8%
Did you see a designated area for customers to return goods without coming in to contact with staff?	No	Responses	7	5	3	1	0	1	0	1	1	19
		%	11.5%	21.7%	25.0%	16.7%	0.0%	20.0%	0.0%	33.3%	7.7%	14.5%
	Yes	Responses	0	0	4	0	0	0	0	0	3	7
		%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	23.1%	5.3%
	I cannot remember	Responses	2	1	1	0	0	0	0	0	0	4
		%	3.3%	4.3%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%
	I didn't see any notices about returning goods	Responses	38	10	3	3	2	1	3	0	2	62
		%	62.3%	43.5%	25.0%	50.0%	40.0%	20.0%	100.0%	0.0%	15.4%	47.3%
	Not applicable	Responses	14	7	1	2	3	3	0	2	7	39
		%	23.0%	30.4%	8.3%	33.3%	60.0%	60.0%	0.0%	66.7%	53.8%	29.8%
Was there any indication that contactless payment was preferred?	No	Responses	17	7	0	1	2	1	0	0	4	32
		%	27.9%	30.4%	0.0%	16.7%	40.0%	20.0%	0.0%	0.0%	30.8%	24.4%
	Yes	Responses	30	11	8	5	2	3	1	3	9	72
		%	49.2%	47.8%	66.7%	83.3%	40.0%	60.0%	33.3%	100.0%	69.2%	55.0%
	I cannot remember	Responses	14	5	4	0	1	1	2	0	0	27
		%	23.0%	21.7%	33.3%	0.0%	20.0%	20.0%	66.7%	0.0%	0.0%	20.6%
Was there an option to click and collect or telephone your order in advance?	No	Responses	18	16	5	0	2	3	1	2	6	53
		%	29.5%	69.6%	41.7%	0.0%	40.0%	60.0%	33.3%	66.7%	46.2%	40.5%
	Yes	Responses	26	3	1	4	2	0	0	0	5	41
		%	42.6%	13.0%	8.3%	66.7%	40.0%	0.0%	0.0%	0.0%	38.5%	31.3%
	I am not sure	Responses	17	4	6	2	1	2	2	1	2	37
		%	27.9%	17.4%	50.0%	33.3%	20.0%	40.0%	66.7%	33.3%	15.4%	28.2%
Was there a transparent barrier at the till between you and staff or other customers?	No	Responses	4	1	2	0	1	0	1	0	4	13
		%	6.6%	4.3%	16.7%	0.0%	20.0%	0.0%	33.3%	0.0%	30.8%	9.9%
	Yes	Responses	56	22	9	6	4	5	2	3	8	115
		%	91.8%	95.7%	75.0%	100.0%	80.0%	100.0%	66.7%	100.0%	61.5%	87.8%
	I cannot remember	Responses	1	0	1	0	0	0	0	0	1	3
		%	1.6%	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	2.3%

Table 5: Correlation between how shops were organised and feeling of safety

	Correlation Coefficient*	p-value
Was there a limit on the number of people allowed in the store?	0.11	0.21
Was a one way system in place?	0.30	<0.001
Were there any restrictions on handling products whilst browsing?	0.44	<0.001
If applicable, were customer fitting rooms open?	0.35	0.15
Did you see a designated area for customers to return goods without coming in to contact with staff?	0.23	0.26
Was there any indication that contactless payment was preferred?	0.4	<0.001
Was there an option to click and collect or telephone your order in advance?	0.25	0.02
Was there a transparent barrier at the till between you and staff or other customers?	0.19	0.03

*Coefficient 0.0-0.19=very weak correlation; 0.20-0.39=weak correlation; 0.40-0.59=moderate correlation; 0.60-0.79=strong correlation; 0.80-1.0=very strong correlation

Provision of Information

Most shops provided floor markings to aid social distancing (78.6%), signs to remind people about social distancing (90.1%) and guidance for customers on hygiene (76.3%) (Table 6). Significant moderate correlations were observed between the provision of floor markings, guidance on social distancing and hygiene with feelings of safety (Table 7).

Table 6: How information was provided to customers by shops

			Type of Shop									Total
			Supermarket	Local Convenience Store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Cafe/ Ice cream	Other	
Were there clear floor markings to aid social distancing (arrows, yellow tape etc.)?	No	Responses	8	3	2	0	1	1	0	0	3	18
		%	13.1%	13.0%	16.7%	0.0%	20.0%	20.0%	0.0%	0.0%	23.1%	13.7%
	Yes	Responses	50	19	9	5	3	4	2	3	8	103
		%	82.0%	82.6%	75.0%	83.3%	60.0%	80.0%	66.7%	100.0%	61.5%	78.6%
	I cannot remember	Responses	3	1	1	1	1	0	1	0	2	10
		%	4.9%	4.3%	8.3%	16.7%	20.0%	0.0%	33.3%	0.0%	15.4%	7.6%
Was there clear guidance (e.g. signs) on social distancing for people on arrival?	No	Responses	4	4	0	1	1	0	0	0	0	10
		%	6.6%	17.4%	0.0%	16.7%	20.0%	0.0%	0.0%	0.0%	0.0%	7.6%
	Yes	Responses	55	19	12	5	4	5	2	3	13	118
		%	90.2%	82.6%	100.0%	83.3%	80.0%	100.0%	66.7%	100.0%	100.0%	90.1%
	I cannot remember	Responses	2	0	0	0	0	0	1	0	0	3
		%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	2.3%
Was there clear guidance (e.g. signs) on hygiene for people on arrival?	No	Responses	8	5	0	1	1	0	1	1	3	20
		%	13.1%	21.7%	0.0%	16.7%	20.0%	0.0%	33.3%	33.3%	23.1%	15.3%
	Yes	Responses	50	16	12	4	2	5	1	2	8	100
		%	82.0%	69.6%	100.0%	66.7%	40.0%	100.0%	33.3%	66.7%	61.5%	76.3%
	I cannot remember	Responses	3	2	0	1	2	0	1	0	2	11
		%	4.9%	8.7%	0.0%	16.7%	40.0%	0.0%	33.3%	0.0%	15.4%	8.4%

Table 7: Correlation between provision of information and feeling of safety

	Correlation Coefficient	p-value
Were there clear floor markings to aid social distancing (arrows, yellow tape etc.)?	0.31	<0.001
Was there clear guidance (e.g. signs) on social distancing for people on arrival?	0.34	<0.001
Was there clear guidance (e.g. signs) on hygiene for people on arrival?	0.4	<0.001

Cleaning & Hygiene

Shopping trolleys and baskets are a potential source of infection when shared among many people. Overall, 76.3% of shops were offering trolleys or baskets for their customers to use (Table 8). For the most part, customers were responsible for cleaning their own trolley or basket (39.7%). However, nearly 1 in 5 shops that provided trolleys or baskets did not appear to clean the trolleys/baskets or have any method available to for customers to clean them. Unsurprisingly, all supermarkets offered trolleys, but again 1 in 5 were did not appear to be cleaned by a member of staff or provided an opportunity to clean your own trolley. No significant correlations were observed between the provision or cleaning of trolleys or baskets with feelings of safety (Table 9).

Table 8: Provision and cleaning of trolleys and shopping baskets

			Type of Shop									Total
			Supermarket	Local Convenience Store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Cafe/ Ice cream	Other	
Were shopping trolleys/baskets available?	No	Responses	0	2	3	5	3	0	1	2	5	21
		%	0.0%	8.7%	25.0%	83.3%	60.0%	0.0%	33.3%	66.7%	38.5%	16.0%
	Yes	Responses	61	18	7	1	1	5	1	0	6	100
		%	100.0%	78.3%	58.3%	16.7%	20.0%	100.0%	33.3%	0.0%	46.2%	76.3%
	I cannot remember	Responses	0	3	2	0	1	0	1	1	2	10
		%	0.0%	13.0%	16.7%	0.0%	20.0%	0.0%	33.3%	33.3%	15.4%	7.6%
Were the handles of the shopping trolleys/basket cleaned?	Self-cleaned (where collected)	Responses	20	6	1	0	0	2	0	0	1	30
		%	32.8%	26.1%	8.3%	0.0%	0.0%	40.0%	0.0%	0.0%	7.7%	22.9%
	Self-cleaned (at the entrance)	Responses	17	2	2	0	0	0	0	0	1	22
		%	27.9%	8.7%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	16.8%
	Cleaned by a member of staff	Responses	12	3	3	0	0	2	0	0	2	22
		%	19.7%	13.0%	25.0%	0.0%	0.0%	40.0%	0.0%	0.0%	15.4%	16.8%
	Not cleaned	Responses	12	7	1	1	1	1	1	0	2	26
		%	19.7%	30.4%	8.3%	16.7%	20.0%	20.0%	33.3%	0.0%	15.4%	19.8%
	I cannot remember	Responses	0	5	5	5	4	0	2	3	7	31
		%	0.0%	21.7%	41.7%	83.3%	80.0%	0.0%	66.7%	100.0%	53.8%	23.7%

Table 9: Correlation between provision of trolleys and shopping baskets and feeling of safety

	Correlation Coefficient	p-value
Were shopping trolleys/baskets available?	-0.18	0.05
Were the handles of the shopping trolleys/basket cleaned?	-0.12	0.22

Most shops (77.9%) provide hand sanitiser to customers (Table 10). In general, there is very low usage of face coverings, both by customers and by staff (Table 10). In 67.2% of shops, "some" customers wore a face covering, but we had no recorded instances where all customers in a shop wore face coverings and in just under a third of shops, no customers wore face masks at all. The majority of staff (83.2%) in shops were also not wearing face coverings. Highest face covering usage by staff occurred in pharmacies where staff in 4 out of 5 (80%) pharmacies were wearing them compared to staff in 2 out of 61 (3.3%) supermarkets. Significant weak correlations were observed between the provision of hand sanitiser and staff wearing face coverings with feelings of safety.

Table 10: Hand sanitiser and face coverings in shops

			Type of Shop									Total
			Supermarket	Local Convenience store	Department or Clothes store	Butcher	Pharmacy	Petrol station	Sports shop	Cafe/ Ice cream	Other	
Was hand sanitiser available at the entrance?	No	Responses	7	6	1	0	3	0	1	2	3	23
		%	11.5%	26.1%	8.3%	0.0%	60.0%	0.0%	33.3%	66.7%	23.1%	17.6%
	Yes	Responses	52	16	11	5	2	5	1	1	9	102
		%	85.2%	69.6%	91.7%	83.3%	40.0%	100.0%	33.3%	33.3%	69.2%	77.9%
	I cannot remember	Responses	2	1	0	1	0	0	1	0	1	6
		%	3.3%	4.3%	0.0%	16.7%	0.0%	0.0%	33.3%	0.0%	7.7%	4.6%
Were staff wearing face coverings?	No	Responses	57	21	10	4	1	4	2	1	9	109
		%	93.4%	91.3%	83.3%	66.7%	20.0%	80.0%	66.7%	33.3%	69.2%	83.2%
	Yes	Responses	2	1	2	2	4	1	1	2	3	18
		%	3.3%	4.3%	16.7%	33.3%	80.0%	20.0%	33.3%	66.7%	23.1%	13.7%
	I cannot remember	Responses	2	1	0	0	0	0	0	0	1	4
		%	3.3%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	3.1%
Were other customers wearing face coverings?	None	Responses	11	11	2	5	3	2	2	2	5	43
		%	18.0%	47.8%	16.7%	83.3%	60.0%	40.0%	66.7%	66.7%	38.5%	32.8%
	Some	Responses	50	12	10	1	2	3	1	1	8	88
		%	82.0%	52.2%	83.3%	16.7%	40.0%	60.0%	33.3%	33.3%	61.5%	67.2%

Table 11: Correlation between the provision of hand sanitiser and use of face coverings with feelings of safety

	Correlation Coefficient	p-value
Was hand sanitiser available at the entrance?	0.21	0.02
Were staff wearing face coverings?	0.28	<0.001
Were other customers wearing face coverings?	0.01	0.89

Additional Feedback from Respondents

We also asked respondents to note any other protective measures that were observed. We received 67 free text responses to this.

Social Distancing

Thirty comments were received regarding the lack of social distancing of either fellow customers or shop staff. These were mainly received from people shopping in larger supermarkets, which are busier. Despite the structural measures in place, most reported other shoppers coming close to them as they shopped.

For example, respondents noted:

"The problem isn't the restrictions/measures put in place by the shops (any shop I've been to). The problem is other shoppers. Social distancing is adhered to when entering but once inside people act like it's a free for all and many push past or stretch over or push into whatever section I am at. At some points this is touching me, brushing past or just too close for comfort. I have a very sick parent who has terminal cancer and shopping makes me worried about what I could bring home to them."

"Despite having a queuing system before going into the shop once inside it was a free for all. No one way system in place, no adherence to social distancing by staff or customers."

"Despite all the notices and arrows both staff and other shoppers did not observe social distancing."

One respondent suggested that staff may set the social norms around social distancing:

"Staff weren't adhering to any social distancing measures so majority of shoppers weren't. Too many in store for safe distancing, and some customers unhappy at being told by other shoppers to wait or step back. The lack of one way and safe practices from staff is a problem- they just walk up to where you are."

Two respondents noted that they would shop in smaller local stores to avoid this

"Staff doing their best they could but other customers frequently broke social distancing guidance. I will not go back to a supermarket for a long time. I will take the hit of being charged more for shopping locally."

"I visit [local convenience store] more often for daily essentials (e.g. milk & bread) as I don't go to the supermarket as often now. Shop doesn't tend to be very busy so I do feel it is safer"

Structures Help with Social Distancing

Some respondents noted that the structures that were in place to promote social distancing, such as announcements on the tannoy, one way systems, displays that make it easier to distance when selecting products and no entry signs, may help. However, customers don't always follow them, and they are difficult to enforce.

"Yes, regardless of tannoy, 1-way floor markings and no entry signs to alert people of the 1 way system, many people ignored it. People I believe, simply didn't care or were totally ignorant. [Supermarket name] have a hard time getting people to adhere."

However, one respondent noted that these measures are being relaxed:

"At height of lockdown, staff member monitored customers entering store and people queued outside, but this no longer happens at all"

Use of Face Coverings

In keeping with the data above that showed not many staff or customers were wearing face coverings, we received a number of comments highlighting this.

"I feel that the staff need to wear masks as many of them walk too closely past customers"

"I wore a mask but only about three other people did"

"Some staff wore masks, not all"

"I shopped during dedicated NHS shopping hour (7am-8am) and was surprised I was one of only 2 people I saw wearing facemasks"

It should be noted however that one of the respondents did not intend to wear a face covering in shops:

"I don't intend on wearing a face mask"

Additional Hygiene Measures

We received some suggestions for ways of improving hygiene. These included cleaning the coin insertion point of trolleys when staff are cleaning them, having a disinfection station at exit as well as the entrance, placing hand sanitiser beside the shopping baskets and restrictions on customers lifting items and placing them down again.

Though some respondents reported bringing their own hand sanitiser, a number suggested that having a staff member at the door to remind customers to use it was a good feature. They could also act as an information point, and appear to provide reassurance to shoppers.

"Staff member at door squirted hand sanitiser when entering and explained procedure (1 way etc.)"

"The man at the door was shouting after people to ensure they sanitised before entering the shop and as abrupt as that sounded it showed the store took measures very seriously"

Facilitating the Needs of Certain Groups

Two main areas were suggested that have helped or might help certain groups. The extended shopping hours for shielding adults of NHS was greatly appreciated. In addition, bathroom facilities are often closed, but are essential for certain groups to be able to go shopping. This will need to be addressed by stores as a matter of urgency.

"It is absolutely vital that shops/larger stores reopen or keep open their bathroom facilities, especially for people with unseen disabilities who would be unable to participate in shopping if such facilities are closed"

Positive Feedback on Staff

We received a number of comments praising shops for the measures they have introduced, and shop owners and staff should be congratulated for their efforts in protecting the public.

"[Store name] seemed to be one of the earliest shops to introduce safety measures-these were enhanced over time. The staff were/are fantastic, working hard to keep their customers safe. I have continued to shop there, more regularly than I would previously have done"

"I felt staff were making an effort to ensure health advice was being encouraged and followed. In this regard they were polite and clear"

"Small family run business, every effort being made to ensure health guidance is being followed. Staff go out of their way to support customers and to create a confidence in shopping safely"

"Staff are always courteous and friendly on any of my visits to the supermarket"

"The signage used in this centre is excellent. It's bright, stands out. Clearly marks how many should be in each store and how many should queue outside. I found this centre to be well ahead at the start of COVID. They were doing things before the authorities were issuing advice. Full marks"

Conclusion

From our survey of 131 different shops in Northern Ireland, we have observed that most have introduced the appropriate range of measures to prevent the spread of transmission of COVID-19. However, a number of respondents commented that not all customers adhere to the behaviours that these measures were introduced to support, such as social distancing. The importance of role modelling by shop staff was noted. Wearing face coverings was also not universally adapted by either customers or shop staff, which may help promote feelings of safety in shoppers.

This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:

Members of the HSC Research and Development Division Behaviour Change Group
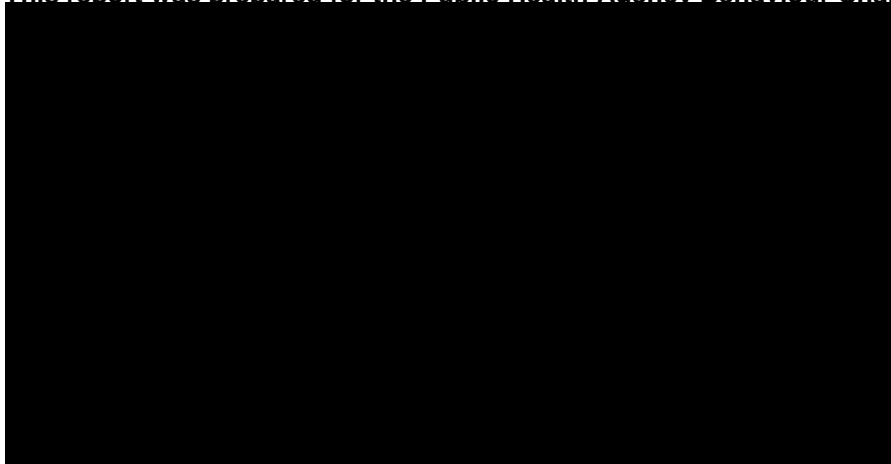
Name	Position	Organisation

HSC R&D Behaviour Change Group

Exploring the facilitators and barriers to following COVID-19 guidelines on social distancing among young people in Northern Ireland and Republic of Ireland

Report No: 2

COVID-19 Behaviour Change Cell
Date: 23.9.2020
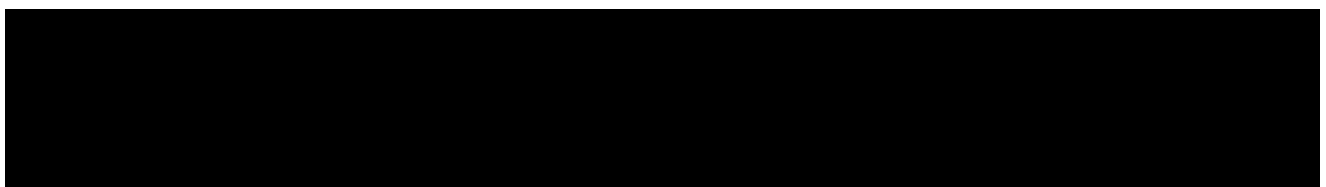
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Executive Summary

This report explores social distancing behaviour among young people aged 16-25 from Northern Ireland and the Republic of Ireland during the summer of 2020 (prior to School, College, and University restarts). The results presented in this report are part of a survey-based research study that explores young people's experiences of social distancing and the psychological, social, and physical/environmental barriers to social distancing behaviour. The aim of this report is to present initial descriptive findings which provide a greater insight into how young people are experiencing social distancing guidelines and what helps or hinders social distancing. Further analysis of the factors that most strongly predict social distancing behaviour will follow in a future report. Further qualitative analysis of open text responses exploring factors which help or hinder social distancing is also underway.

Key findings

- In general, young people have a good understanding of what social distancing means and how it should be practised.
- Many young people play an active role in reducing transmission through social distancing
- Most young people believe that the actions they take can help control COVID-19 transmission.
- Most young people are willing to wear a face mask when social distancing is difficult.
- 9 in 10 young people are worried about a family member contracting COVID-19.
- Young people report that achieving distance from family/friends outside the household is *possible* but can be difficult *for other reasons.*
- Peers influence social distancing behaviour to a large extent
- Young people often find it hard to remember to distance while with friends/family/others outside their household.
- Social distancing can make young people feel restricted, lonely, and weird

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Cite as:

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Introduction

COVID-19 has rapidly changed people's lifestyles worldwide, and one of the most dramatic effects has been the need to physically distance from others; including those we are close with such as family and friends. Young people may be particularly affected by the social distancing guidance because of their developmental stage and lifestyles which are typically centred on peers and relationship building (Orben, Tomova, & Blakemore, 2020). Research suggests that adolescents and young adults may experience social isolation as result of the physical distance from others, which can impact their psychological wellbeing (Orben et al., 2020). A recent large-scale local survey suggests that boredom, loneliness, uncertainty are common experiences among young people during this time (Northern Ireland Youth Forum, 2020). Moreover, young people are especially influenced by peers, and thus it is more challenging to resist social norms: in a scenario where majority of young people in a social group are not social distancing, it is likely that this will permeate to the entire group (Andrews, Foulkes, & Blakemore, 2020).

It is therefore understandable that young people may be finding it more challenging to accept the social distancing guidelines Nonetheless, the need to maintain social distancing behaviours is essential to support the safe reopening of social interactions and activities. There have been media reports of meetings of crowds of young people who were not following social distancing advice. This is problematic because close contact risks increased viral transmission, which could result in exponential growth of COVID-19 cases. Young people are less likely than older people to have symptoms of COVID-19 infection, and they may therefore not know when they are infectious to others (Oosterhoff & Palmer, 2020).

Given the recent increase of young people socialising after public health restrictions have been eased, we need to better understand the factors influencing social distancing behaviour to help engage this population. A US based study showed that 30.5% of young people refrained from coming into close contact with peers outside their household during the peak 'lockdown' period of non-pharmaceutical interventions (Oosterhoff et al., 2020), so it is plausible that social distancing adherence will more rapidly deteriorate over the next coming months. This study aims to explore the facilitators (*enabling/motivating factors*) and barriers (*personal and environmental/social obstacles*) to young people adhering to the COVID-19 social distancing guidance.

This report explores the following research questions:

1. To what extent do young people understand and act on social distancing guidelines?

2. What influences social distancing among young people?
3. What do young people think and feel about social distancing?

Methods

Data for this survey-based study was collected using Qualtrics software. Young people aged 16-25 years from Northern Ireland (NI) and the Republic of Ireland (ROI) were recruited on social media and through educational and youth-orientated organisations between July and August 2020. The survey closed on August 24th prior to School/College/University restarts. The survey (containing closed and open-text questions) was developed in collaboration with members of the Public Health Agency behaviour change cell (details at the end of this report) and survey items were reviewed by a representative group of young people to inform further adaptions to support relevance and understanding. The survey items were guided by the COM-B model (Michie, van Stralen, & West, 2011) and Theoretical Domains framework (Cane, O'Conor, & Michie, 2012), as a theoretical structure for this exploratory investigation. The survey was divided into four sections:

1) COVID-19 knowledge and behaviour;
2) Me, my friends, and COVID-19;
3) My thoughts and feelings about distancing & Exploring your views and experiences (open text responses);
4) About you (demographics). Data underwent a process of cleaning and descriptive data exploration.

Results

Survey responses from individuals who did not provide explicit consent to use their data, were not aged 16-25 years and those who reported living outside of NI or ROI were excluded from the analysis. Therefore, 477 valid responses were included.

Descriptive results are presented across six subsections:

1. Participant demographics (including COVID-19 exposure)
2. Exposure to COVID-19
3. Social distancing knowledge and capability
4. Social distancing behaviour
5. Social distancing and the social/physical environment (influence of friends/family/others and the environment)
6. Thoughts/feelings about social distancing.

1. Participant demographics

Demographics of respondents are captured by the series of graphs below and all (apart from age) are expressed as percentages of the total number of survey respondents. The age of respondents ranged between 16 and 25 years, and the majority of respondents were aged 19-22 (Figure 1).
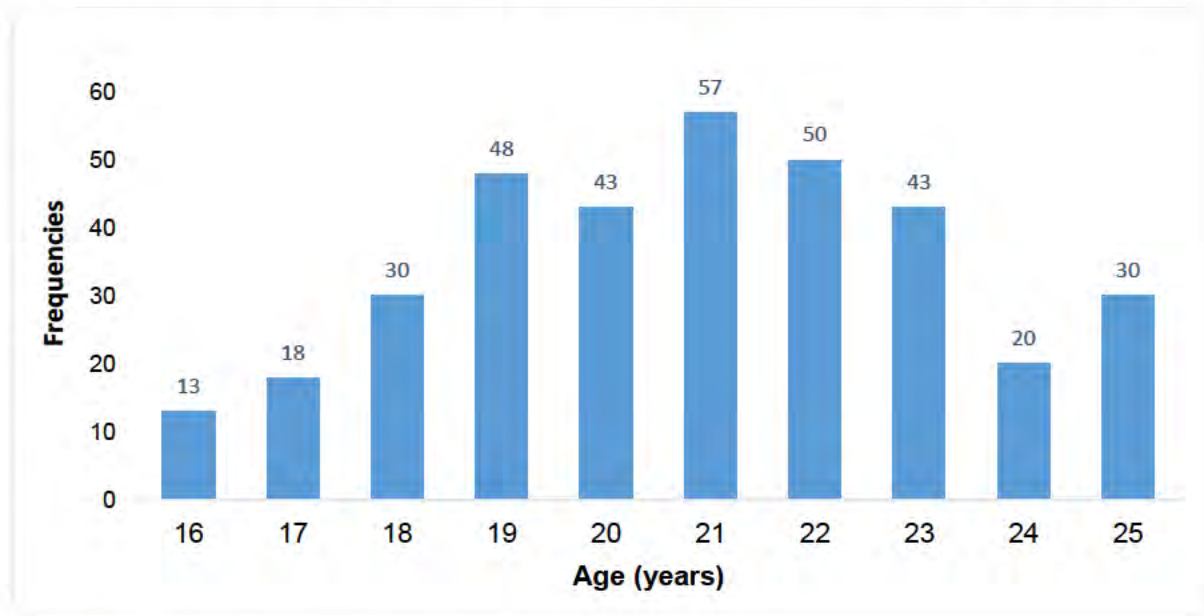
Figure 1. Age of respondents expressed as frequencies

The majority (96%) of young people who responded to the survey were from Northern Ireland (Figure 2). Most respondents were female (73%) (Figure 3).
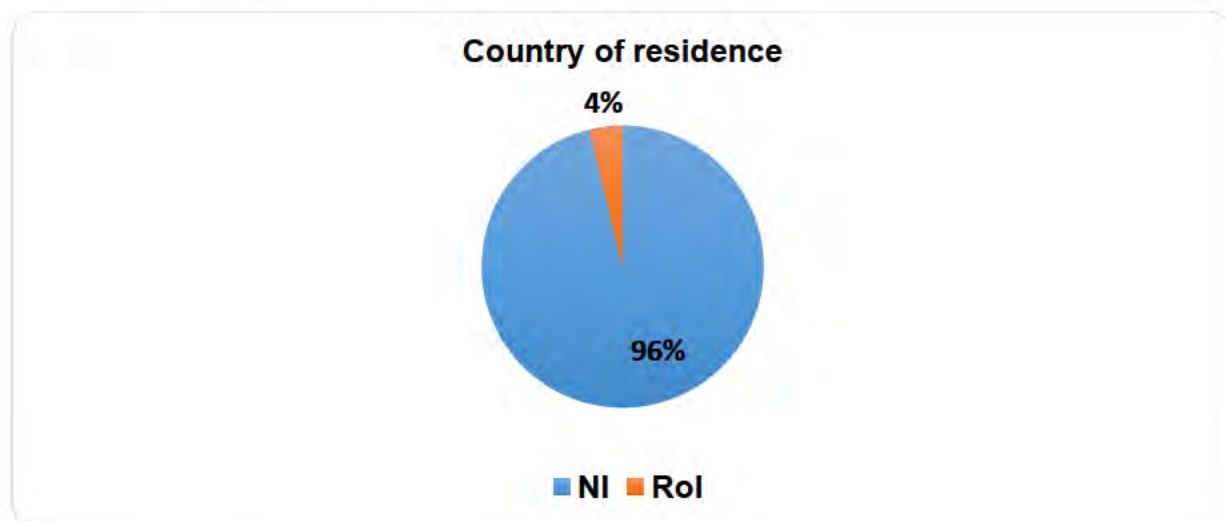
Figure 2. Country of residence of respondents (NI vs. ROI) (%)

Sex
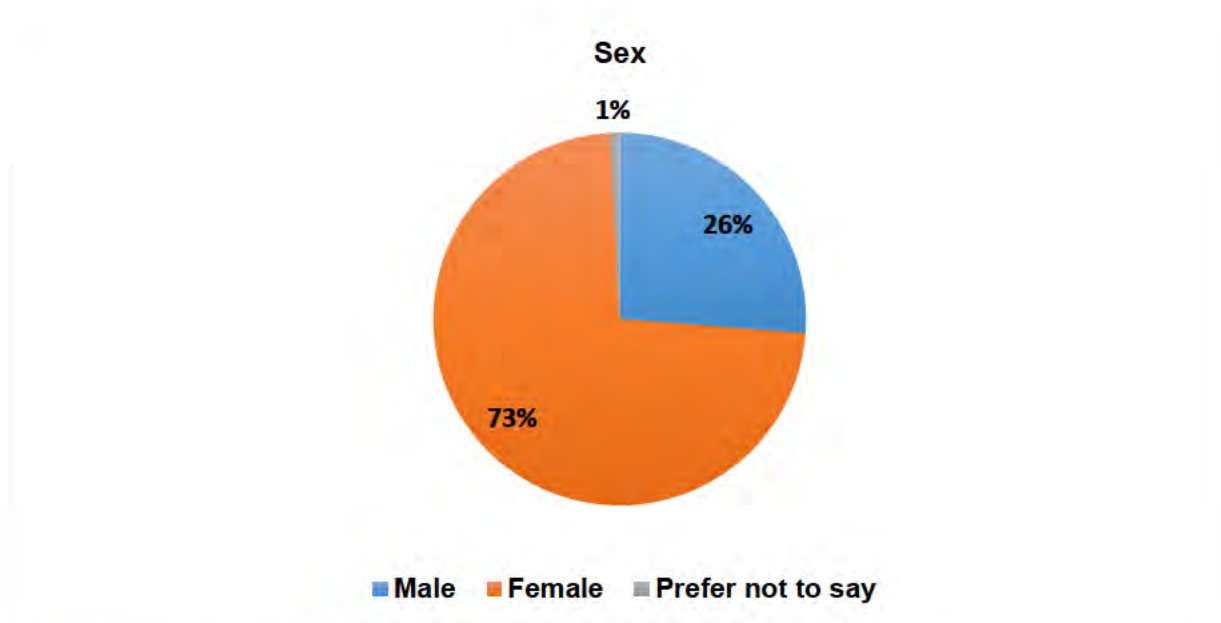
Figure 3. Sex of respondents (%)

The majority (81%) of young people who responded to the survey reported living at their family or parental home at the time the survey was conducted (Figure 4). As shown in Figure 5, most respondents (73%) shared a household with 3-5 people (including themselves).
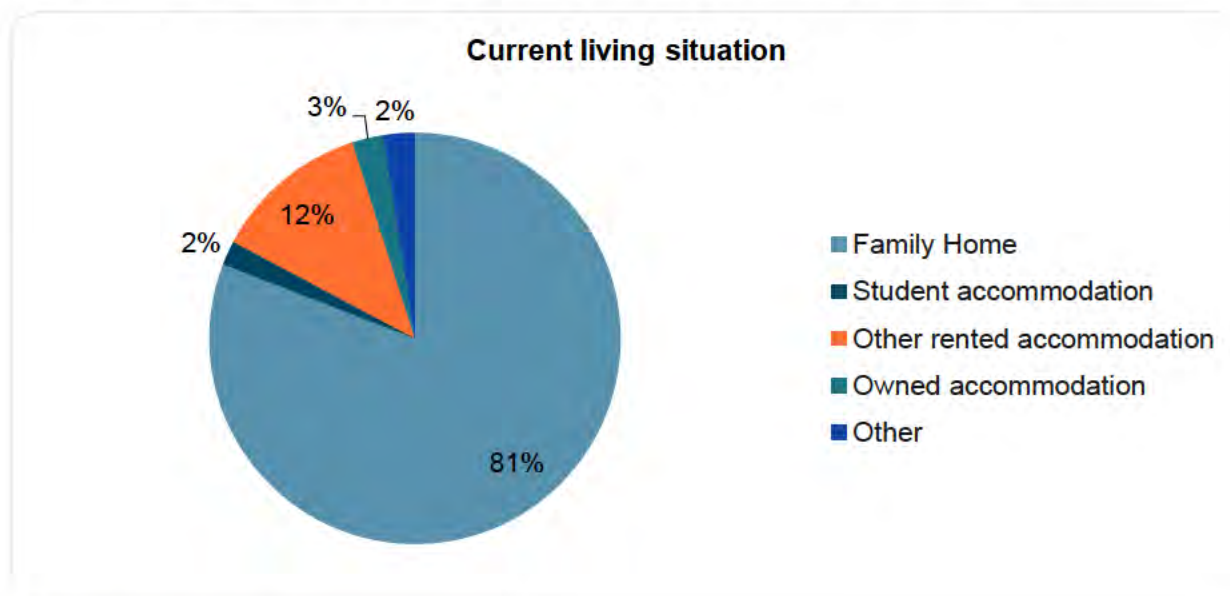
Figure 4. Respondents' current living situation (%)
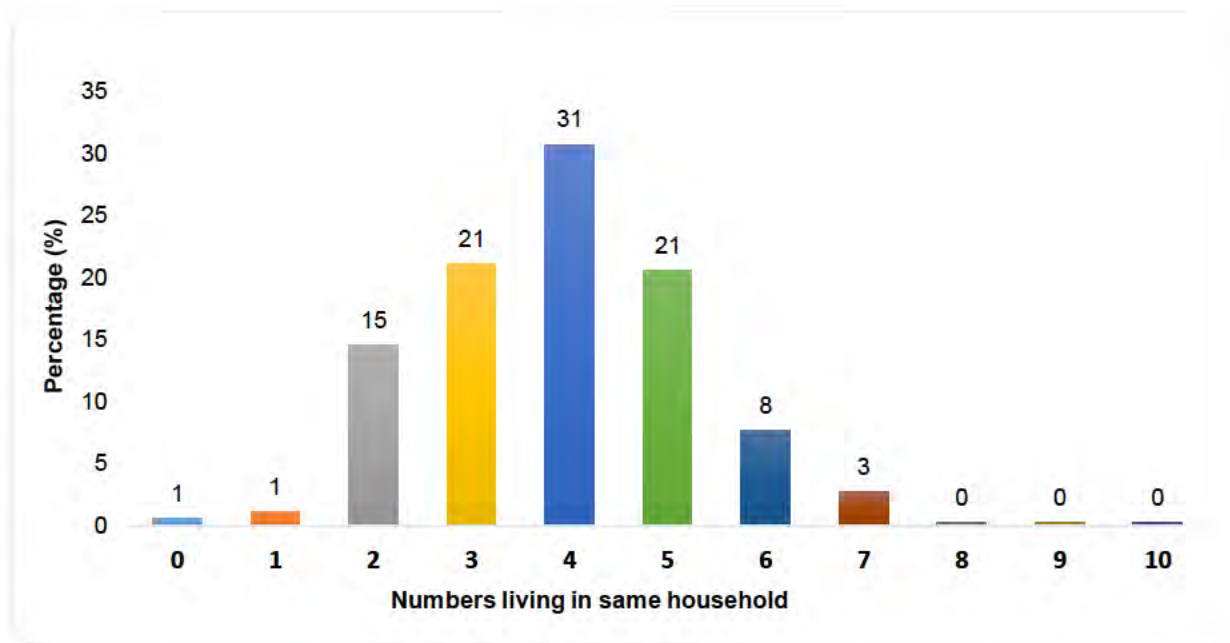
Figure 5. Number of people living in the same household as respondents (%)

As shown in Figure 6, before lockdown, almost half of the young people who responded to the survey were students and were also working, while one third were studying only. At the time of data collection, findings were similar, however there was a marginal decrease in the number of respondents who were working as well as studying and a marginal increase in those only studying. Almost 1 in 6 young people reported living with a chronic health condition (Figure 7).
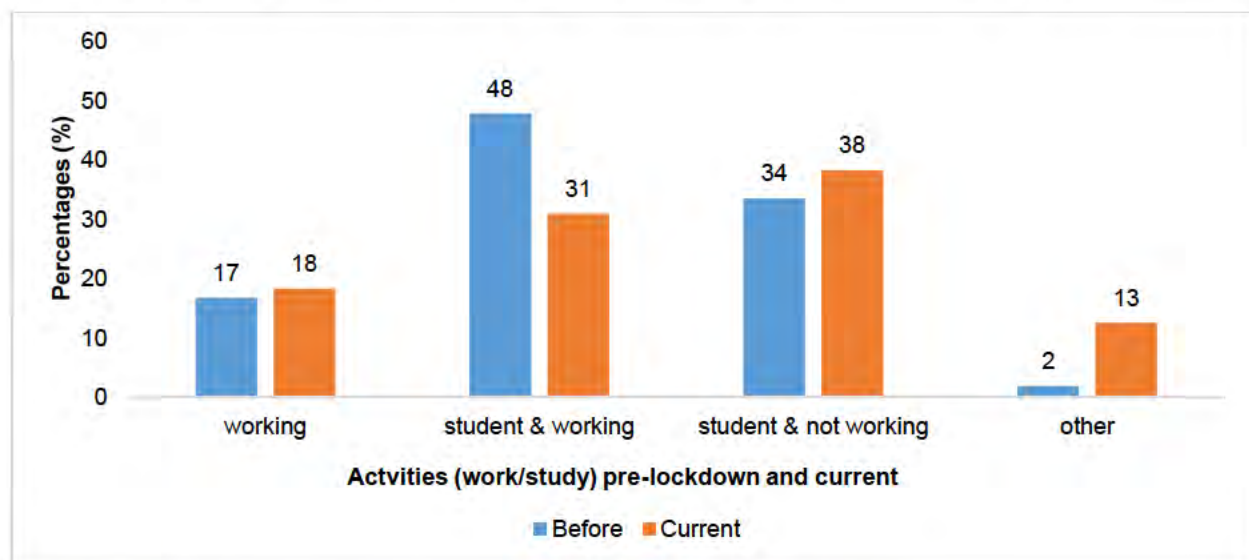
Figure 6. Activities of respondents' pre-lockdown and at the time of data collection (%)

Living with a Chronic Health Condition

16%

84%

■ Yes ■ No
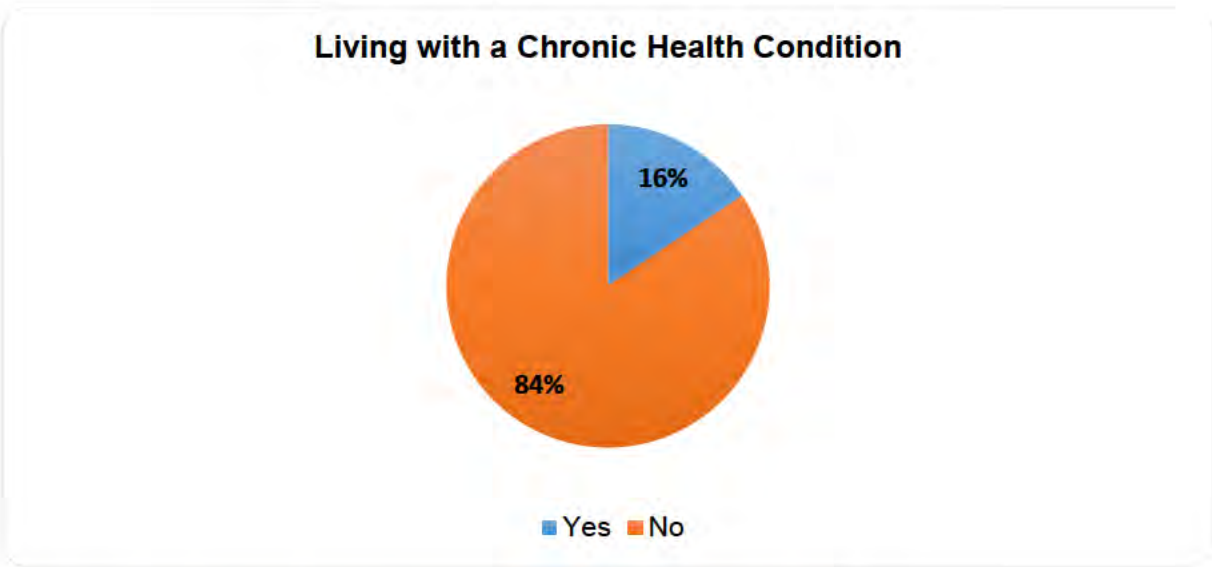
Figure 7. Respondents living with a chronic physical or mental health condition (%)

As Figure 8 shows, most young people were not shielding themselves or others. However, of those young people who reported that they were shielding, the majority were shielding someone else in their household (18%).
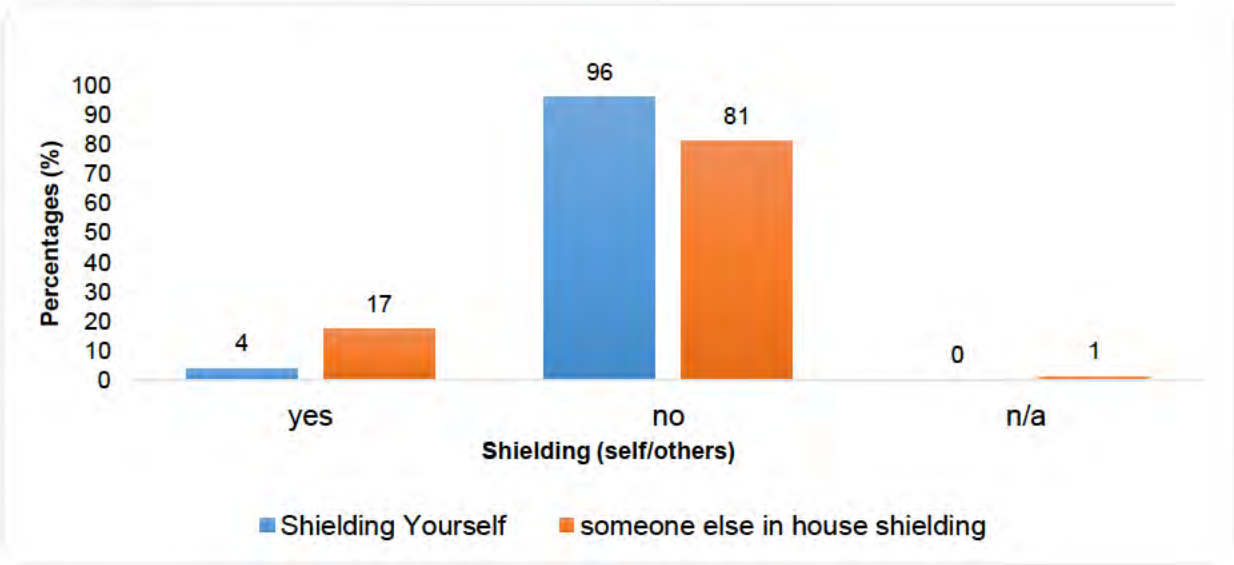
Figure 8. Young people shielding themselves and/or others (%)
Note. n/a= not applicable

A minority of respondents reported that they had been diagnosed with COVID-19 (Figure 9). One in ten believed they had symptoms of COVID-19 or were uncertain about whether or not they

have or have had symptoms. Rates of reported symptoms or COVID-19 diagnoses in others that respondents live with was marginally greater. Almost one third of respondents reported that their friends have/have had symptoms and two in ten reported that friends had been diagnosed with COVID-19 (Figure 9).
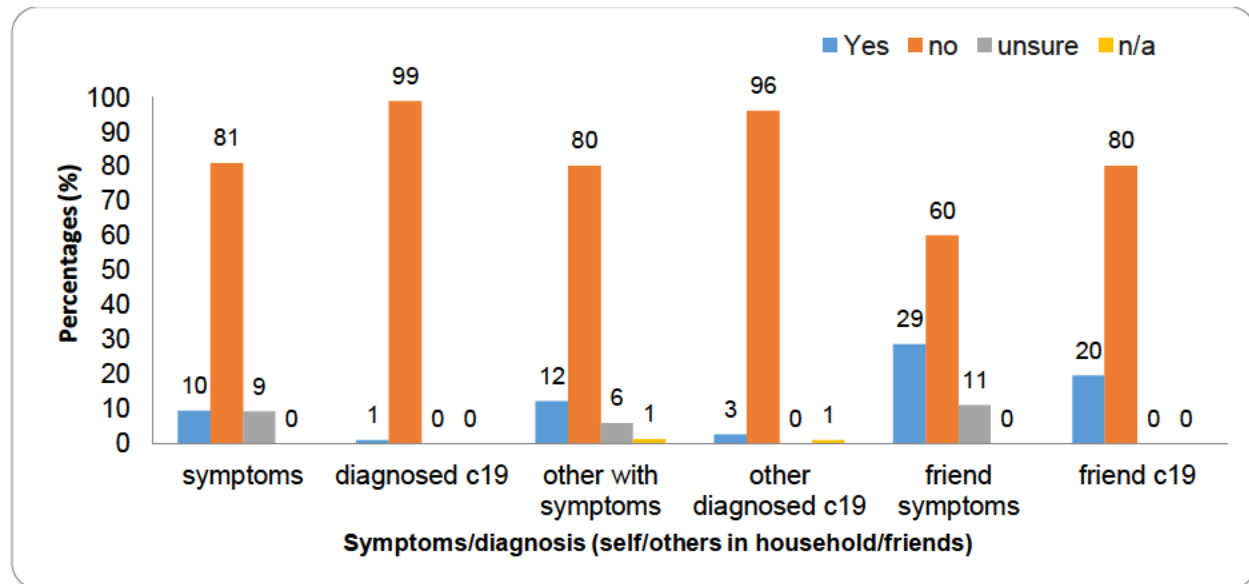
Figure 9. Self-reported exposure to COVID-19 (%).
Note. n/a= not applicable

2. Social distancing knowledge and capabilities

Respondents were assessed on their knowledge of COVID-19 guidelines around social distancing within a series of scenarios (Figure 10). Over 85% of respondents thought it was appropriate for a group of four friends to talk at a distance and for two people to walk together at a distance. More than 97% of respondents knew it was not recommended for a large group of friends to hang out in close contact with one another or to stand in a shop queue close behind someone else. Respondents were slightly less confident about whether it was recommended to sit at a bench at a distance from each other, but generally reported that this was appropriate.

As shown in Figure 11, most respondents (76%) reported that they knew how to distance and the majority (93%) knew that they should distance from people outside household.

As Figure 12 suggests, the majority of respondents (<80%) feel they can physically keep distance between themselves and people they know (outside the household) and people they don't know.

However, over 70% of respondents agreed that they still find it hard to keep distance between themselves and friends when they meet.
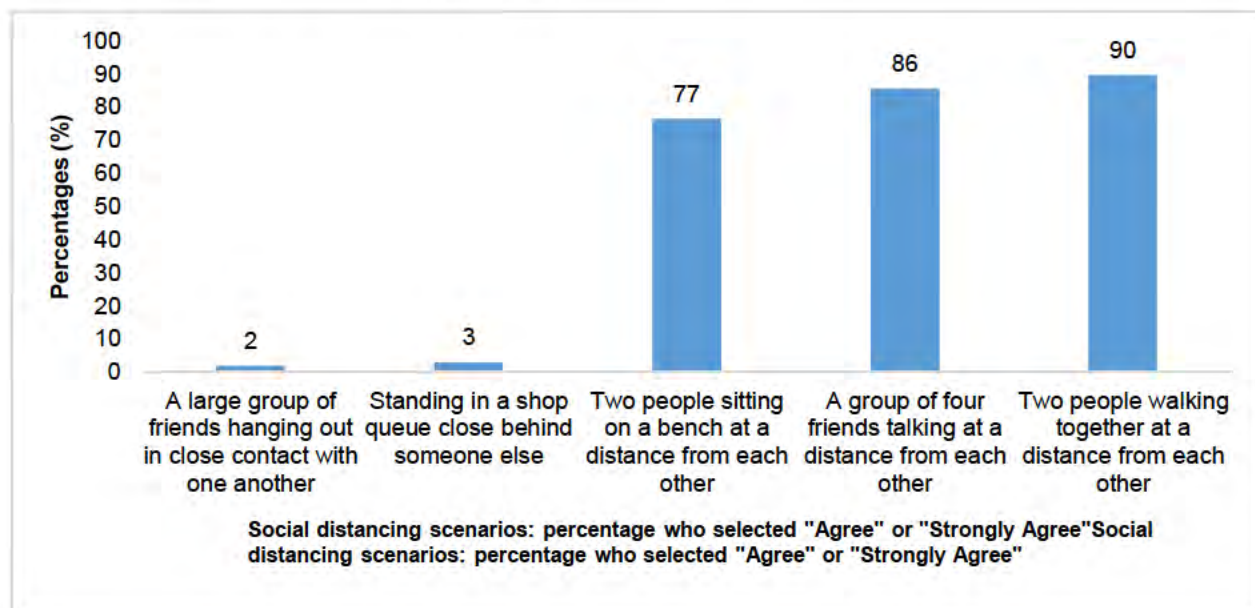
Figure 10. Young peoples' knowledge about COVID-19 social distancing guidelines based on responses to a series of social distancing scenarios (%)
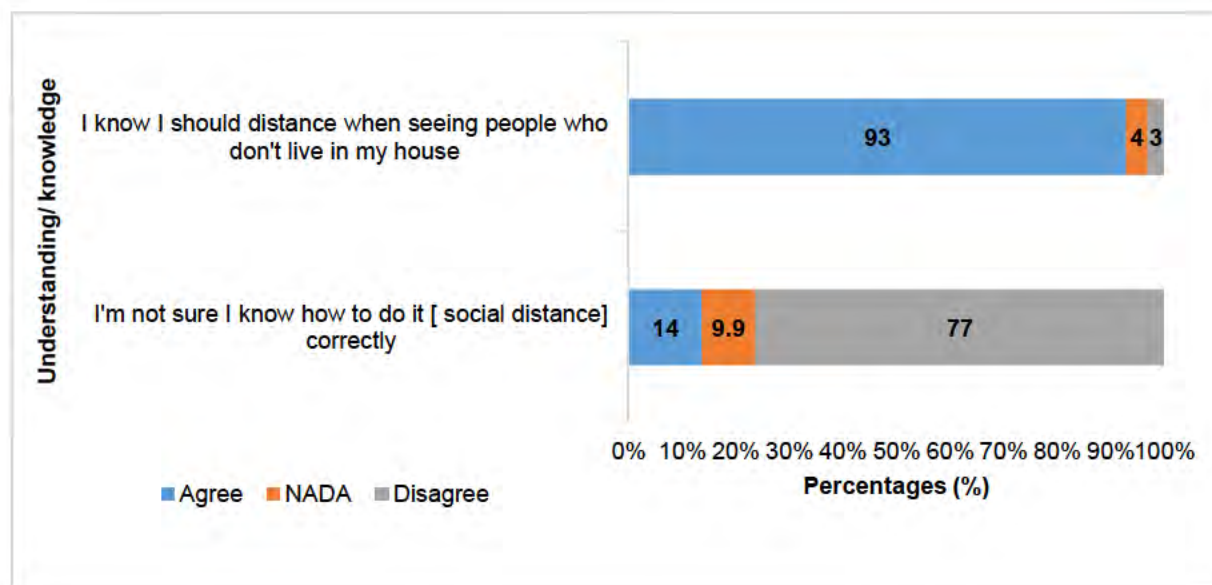
Figure 11. Respondents' perceived ability to socially distance based on their current understanding/knowledge (%)
Note. NADA= neither agree nor disagree
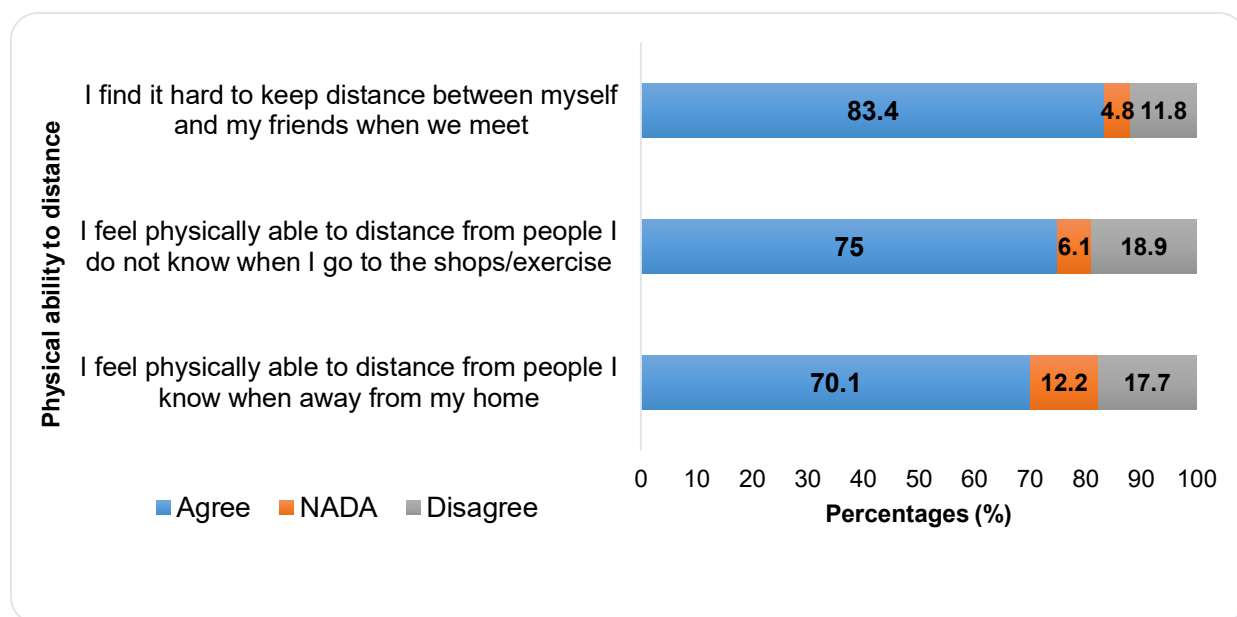
Figure 12. Respondents' physical ability to socially distance (%)

3. Social distancing behaviour

When asked about how often they socially distance from friends and family who they do not share a household with, just over half said always/mostly (the majority of which said 'most of the time'). However, 1 in 5 said they 'sometimes' socially distance from family and friends who they do not share a household with (Figure 13).
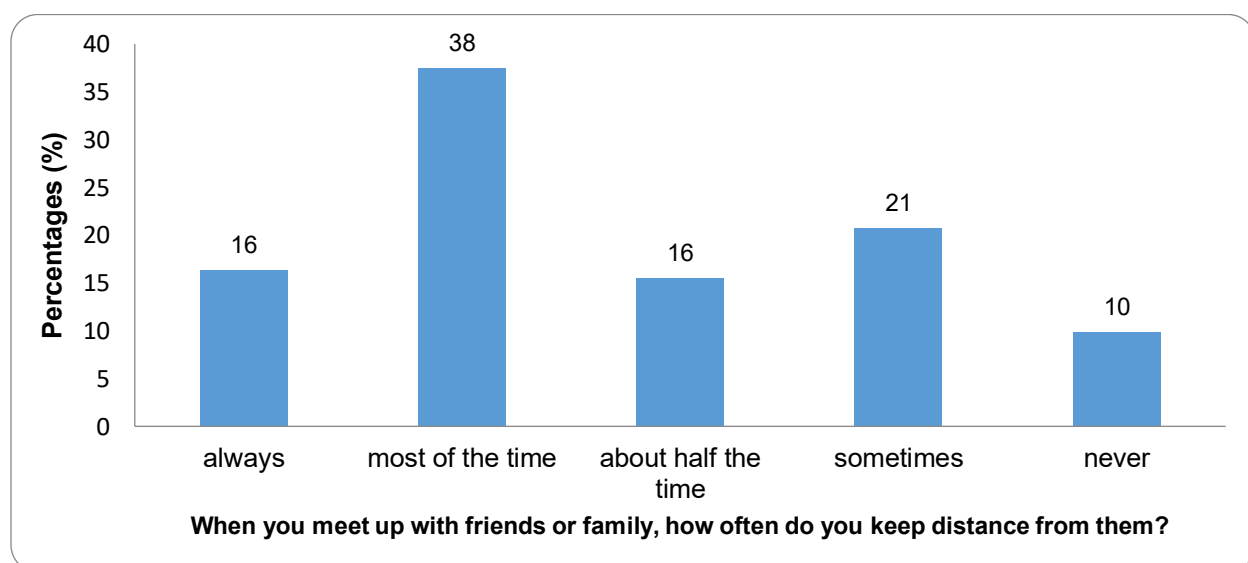
Figure 13. Social distancing behaviour among respondents (%)

4. Social distancing and the social/physical environment

When asked about their perspectives toward different social and environmental influences on social distancing behaviour, approximately half of respondents felt that being restricted in places to go and activities to engage in influences social distancing behavior (Figure 14). Over half of respondents said that they keep a distance from friends even when their friends do not. Contrastingly, over 60% of respondents say that their social distancing behavior depends on their friends' thoughts and behavior i.e. respondents said that if their friends think it is important to distance, they will engage in distancing, but if their friends feel that distancing is not important, respondents say that they do not distance. Many respondents also felt it was hard to remember to social distance (<60%) (Figure 14). When asked about whether presence of parents influenced social distancing behaviour, most respondents (63%) felt that that parental presence did not influence their behavior (Figure 15).
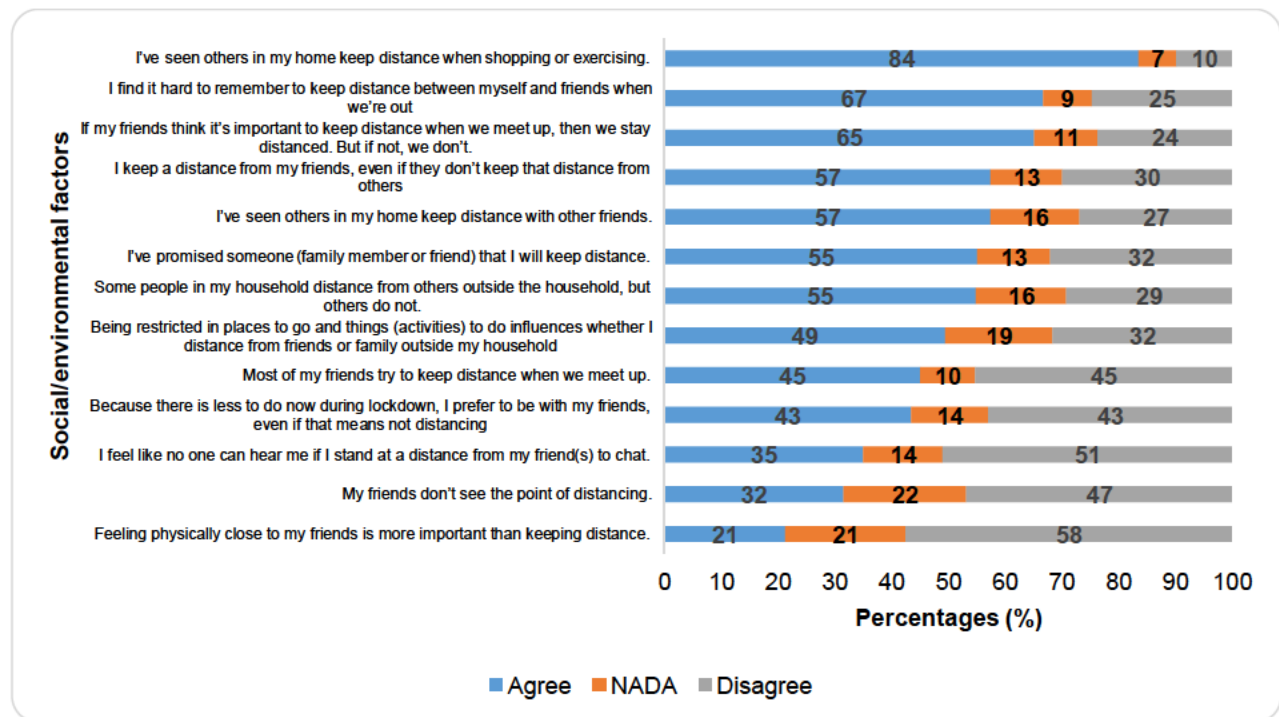
Figure 14. Social and environment factors and social distancing behaviour (%)
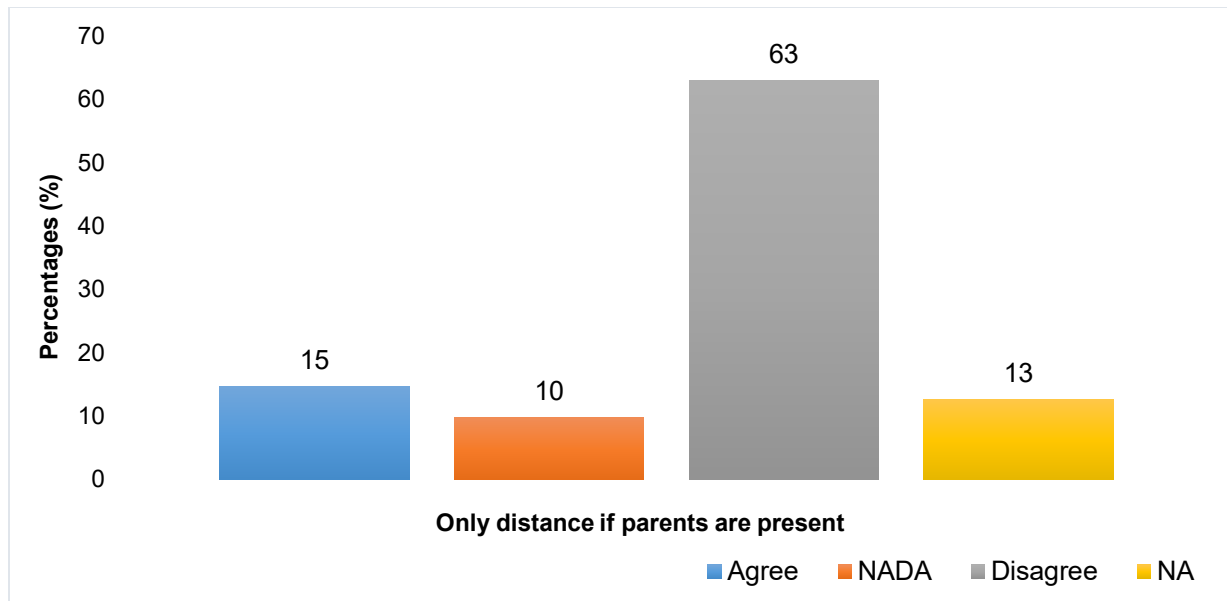
Figure 15. Influence of parents on social distancing behaviour.

5. Thoughts/feelings about social distancing

Nine out of ten of the young people who responded to the survey are worried about a family member catching COVID-19 (Figure 16). Around 80% of young people are also aware of risks to both themselves and others in contexts when there is no social distancing and over half are worried about catching COVID (but one in three are not). Most respondents believe that they have some control over catching COVID-19, but one in ten do not think there is anything they can do (Figure 16). Over 90% reported a willingness to wear a facemask on public transport or public places were social distancing is not possible. Supplementing the results in Figure 13, the majority of respondents feel they do stick to guidelines but 1/3 do not (Figure 16). When asked about how social distancing affected them emotionally, half of the young people who responded to the survey reported feeling restricted, however half also believed they are doing the 'right thing' by social distancing. One third of respondents reported that social distancing made them feel lonely and weird, and a 1 in 4 said that social distancing measures made them feel worried (Figure 17).
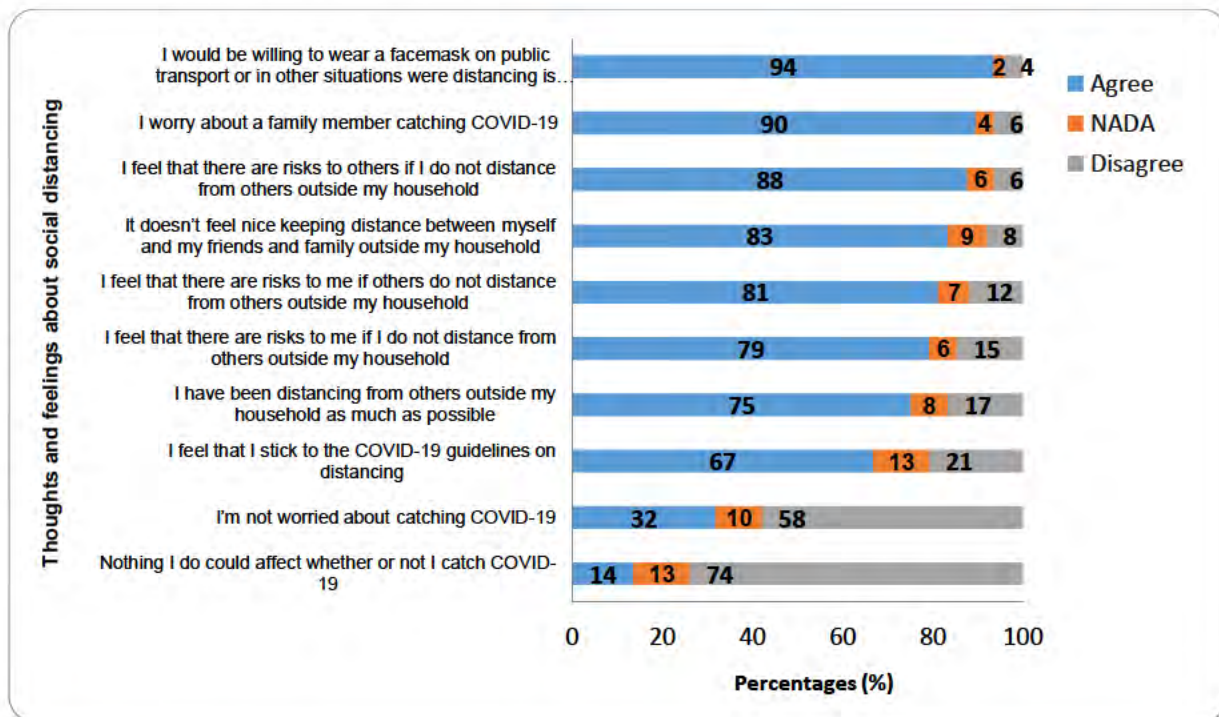
Figure 16. Thoughts and feelings about social distancing (risks, perceived control, and associated behaviours e.g. mask wearing) (%)
Note. NADA= neither agree nor disagree
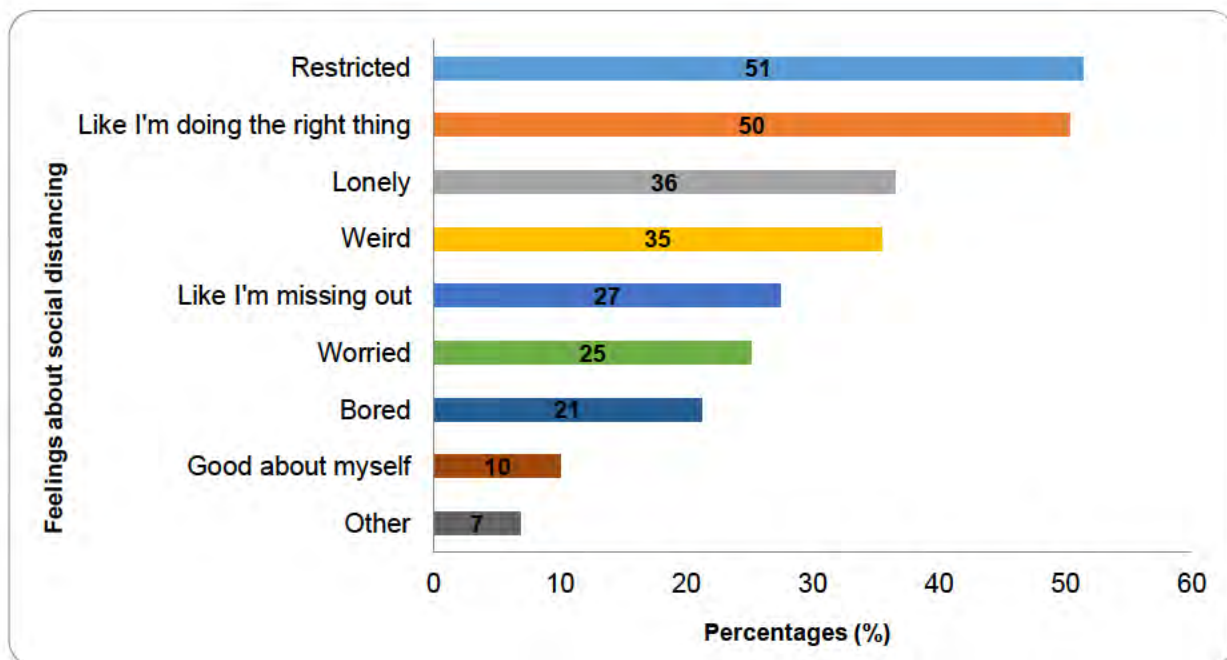
Figure 17. Feelings resulting from social distancing behaviour (%)

Conclusion

This survey explores knowledge of social distancing guidelines, thoughts and feelings towards social distancing, and self-reported social distancing behaviour among young people aged living in Northern Ireland and the Republic of Ireland. Most respondents were aged between 19-22 years. The majority of young people resided in Northern Ireland, in their family home, and the majority were students (with or without other part/full time work) at the point of data collection. A small number of young people reported living a chronic health condition (most commonly asthma) and a small proportion reported shielding themselves or, more commonly, another member of their household. Generally, level of direct experience of COVID-19 (as captured by self-reported diagnosis/symptoms in respondents or members of their shared household) appeared low in this sample of young people. However up to 2 in 10 reported that friends have or have had symptoms or have been diagnosed with COVID-19.

Knowledge, ability to distance, and social distancing behaviour

To a large extent, young people demonstrated a good understanding of the general guidelines on social distancing and were aware of situations when social distancing was necessary and how to distance in different scenarios. Young people felt that while with family/friends outside their household, it was physically feasible to distance appropriately, but they still reported that this behaviour was *difficult*. The findings demonstrate that while many young people engage in social distancing behaviour most of the time (approximately half of respondents), a significant proportion engage in social distancing half the time or less. Rates of social distancing are comparable to the findings of a recent survey based in the US in a subgroup of 18-24 year olds, however this US study also revealed that social distancing behaviours (which included distance maintained between others and situations/places of exposure) was similar across young and middle aged adults (18-55 years) (Masters et al., 2020). This conflicts media coverage suggesting that young people are social distancing less than middle age adults; projecting a universally negative image of young peoples' attitudes and actions (Masters et al., 2020). An international report by the Life with Corona Network (2020) reveals that young people are comparatively as active in preventing transmission (by practicing 'counter-corona behaviours') as older people. Moreover, young people are more willing to relinquish their income than older individuals (Life with Corona Network, 2020). This is further evidence that the portrayal of young people in the media is not representative of the majority of young people across the globe.

Social and environmental influences on social distancing

Many of the young people felt that being restricted in places to go and things to do made social distancing more difficult. While the majority reported that they would distance even when friends did not distance, a large proportion reported being influenced by peers. Parents and guardians had minimal influence on social distancing behaviour in this cohort of young people, which may be reflective of the age group.

Thoughts & feelings about social distancing

Nine in ten young people reported feeling worried about a loved one contracting COVID-19 and the majority also were aware of the risks to them and others where social distancing is not practised. Most young people expressed a willingness to wear a face mask when social distancing is not possible, e.g. in public transport. To a large extent, young people believe that there are ways to control COVID-19 transmission and most report that they follow guidelines; however, a smaller, but significant proportion feel they do not follow guidelines. But whether or not guidelines are clear to young people less understood, and ongoing qualitative analysis of open text responses collected as part of this study suggests that the clarity and consistency of guidelines has a substantial influence on social distancing behaviour.

Young people commonly reported feeling lonely, restricted, weird, and worried because of social distancing measures; however, a substantial proportion of young people still feel that it is a behaviour that they *ought* to be engaging in; which may relate to perception of personal risk and worries about family/close others' contracting COVID-19. A study in Germany showed that young people with more family/close others who are elderly have more positive attitudes towards social distancing, suggesting that sense of risk may influence the acceptability of distancing (Rieger, 2020). The emotional response of young people observed also compares with international findings; that young people feel more stressed and more anxious about COVID-19 than older people (Life with Corona Network, 2020).

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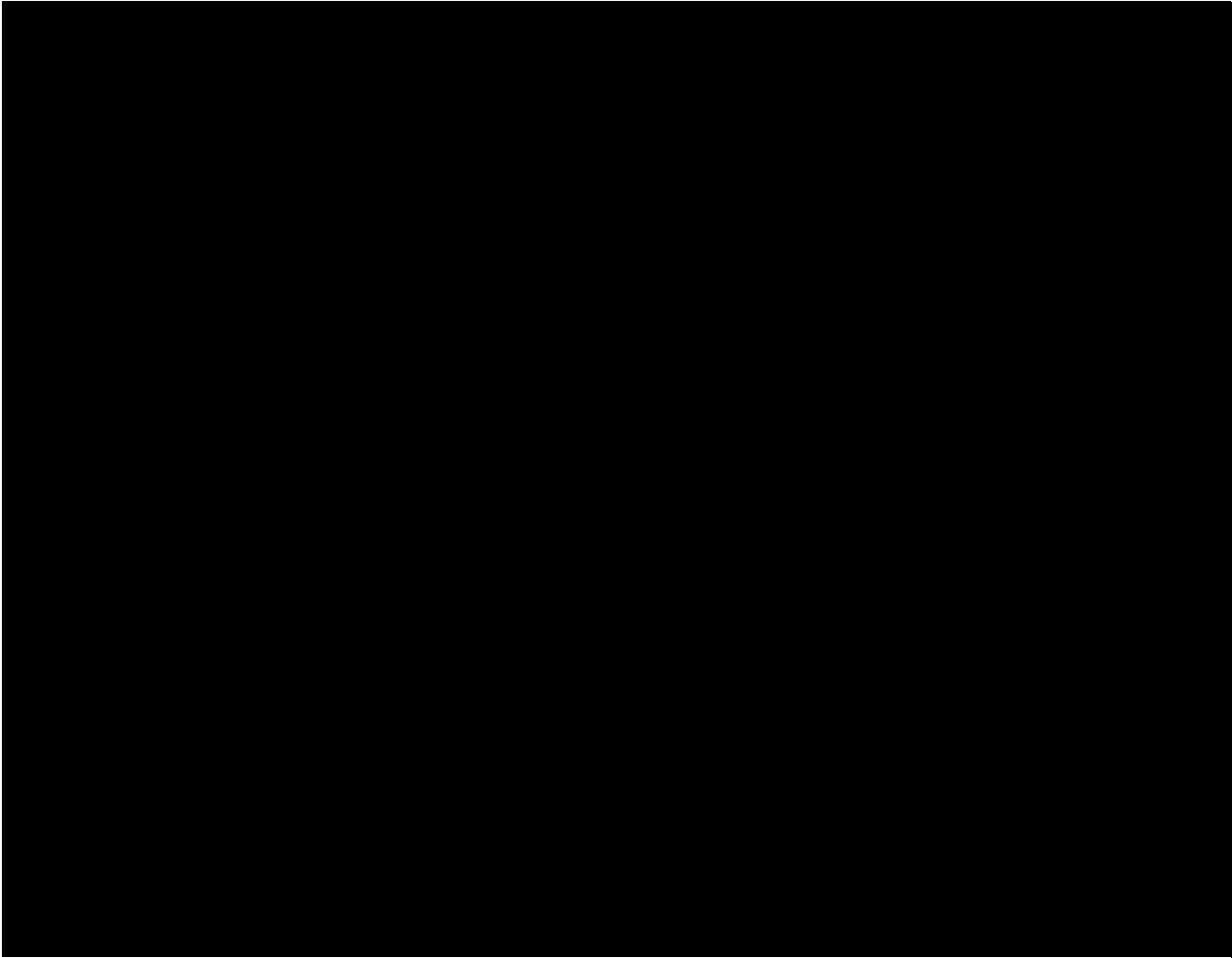
Table of Figures

This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:

Members of the HSC Research and Development Division Behaviour Change Group

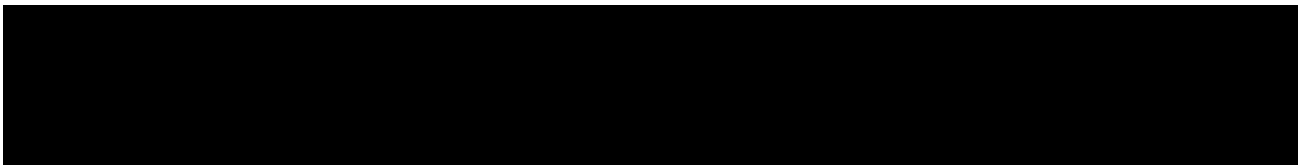| Name	Position	Organisation

HSC R&D Behaviour Change Group

Have Shops Changed What They Are Doing to Prevent the Spread of Coronavirus?

# Report No: 3, COVID-19 Behaviour Change Cell
Date: 03 November 2020

Introduction
Shops have introduced a range of measures to limit the spread of COVID-19. Earlier this year (20th June and 2nd July 2020) we audited these measures using an anonymous survey in 131 shops. In October 2020 we revisited 52 of these shops to ascertain if the measures were still in place. Of these 52 shops, the majority (n=23; 44.2%) of these were large supermarkets or local convenience stores (n=9; 17.3%). Responses are presented as the frequency and percentage.

Shopping Experience
Respondents rated how safe they felt in shops on a scale of 1 (very unsafe) to 5 (very safe). Overall, there was a small, but statistically significant, increase in feelings of safety. The average safety rating increased from 3.8 out of 5 to 4.2 out of 5. (p=0.46) (Figure 1).

Figure 1: How safe did you feel shopping?
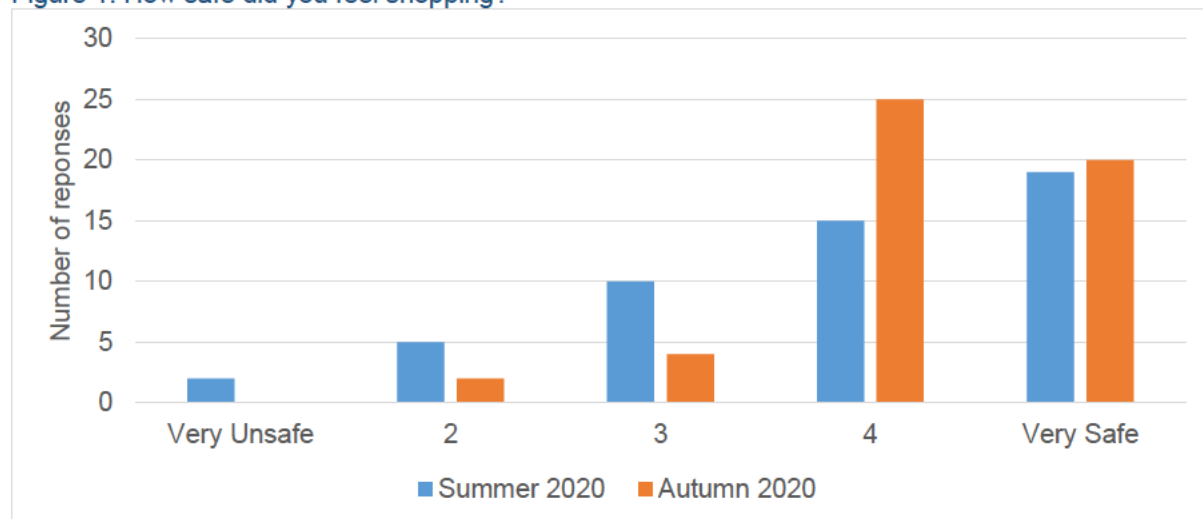
Of the 52 shops, 25 (49%) required customers to queue outside in order to limit the number of customers in the store in the summer audit. This reduced to 9 (17.6%) in the autumn audit. Consequently, there was a statistically significant reduction in the time spent queuing from summer (3.7 minutes) to autumn 1 minute (p=0.001).

Changes to the Shopping Environment
A number of relaxations in transmission prevention measures were observed. Fewer shops limited the number of customers in the store (49% vs 39%), or were still using a one-way system in the store (54.9% vs 35.3%).

		Summer 2020		Autumn 2020	
		Responses	%	Responses	%
Was there a limit on the number of people allowed in the store?	No	9	17.6	18	35.3
	Yes	25	49.0	20	39.2
	Other	17	33.4	13	25.5
Was a one way system in place?	No	22	43.1	33	64.7
	Yes	28	54.9	18	35.3
	I cannot remember	1	2.0	0	0.0
Was there any indication that contactless payment was preferred?	No	11	21.6	14	27.5
	Yes	34	66.7	26	51.0
	I cannot remember	6	11.8	11	21.6
Was there a transparent barrier at the till between you and staff or other customers?	No	3	5.9	2	3.9
	Yes	48	94.1	48	94.1
	I cannot remember	0	0.0	1	2.0

Provision of Information

Most shops provided floor markings and signs to promote social distancing and hygiene. This provision has increased for social distancing and hand hygiene between the summer to the autumn audits.

		Summer 2020		Autumn 2020	
		Responses	%	Responses	%
Were there clear floor markings to aid social distancing (arrows, yellow tape etc.)?	No	7	13.7	10	19.6
	Yes	41	80.4	39	76.5
	I cannot remember	3	5.9	2	3.9
Was there clear guidance (e.g. signs) on social distancing for people on arrival?	No	6	11.8	2	3.9
	Yes	44	86.3	49	96.1
	I cannot remember	1	2	0	0.0
Was there clear guidance (e.g. signs) on hygiene for people on arrival?	No	10	19.6	4	7.8
	Yes	38	74.5	47	92.2
	I cannot remember	3	5.9	0	0.0

Hand Sanitiser and Face Coverings

In August 2020, legislation was introduced to mandate the wearing of face coverings in shops. All shops were providing hand sanitiser at the entrance in the autumn audit (78.4% vs 100%). The proportion of shops in which staff were observed wearing face coverings increased in response to legislation from 13.7% in the summer to 94.1% in the autumn. Similarly, the proportion of shops in which all customers were wearing face coverings increased from 0% in the summer to 68.6% in the autumn.

|		Summer 2020		Autumn 2020	
		Responses	%	Responses	
Was hand sanitiser available at the entrance?	No	10	19.6	0	0
	Yes	40	78.4	52	100
	I cannot remember	1	2	0	0
Were staff wearing face coverings?	No	43	84.3	3	5.9
	Yes	7	13.7	48	94.1
	I cannot remember	1	2	0	0
Were other customers wearing face coverings?	None	20	39.2	0	0
	Some	31	60.8	16	31.4
	All	0	0	35	68.6

Additional Comments

We also asked respondents to note any other protective measures that were observed. Observers reported one shop were making tannoy announcements to remind customers to maintain social distancing, a traffic light system at the door to limit the number of customers in the store, staff directing customers at entrance, provision of self-checkout, pre-packed fresh bakery goods to avoid the need for customers to handle food and vertical protective screens separating customers at tills.

They also commented that in three shops, one-way marking was not adhered to, and in three stores some, but not all staff were wearing face coverings. One observer also noted that home delivery slots from supermarkets were getting harder to get, meaning they had to come to the store.

Conclusion

Notable improvements have been observed in compliance with the wearing of face coverings by staff and customers. However, measures, such as limiting the number of customers in stores have been reduced. After the current lockdown, and in preparation for Christmas, we expect a rapid increase in the number of people shopping. Limiting the number of customers in shops and reintroducing structures such as queues and one-way systems should be considered to manage this demand.

This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:
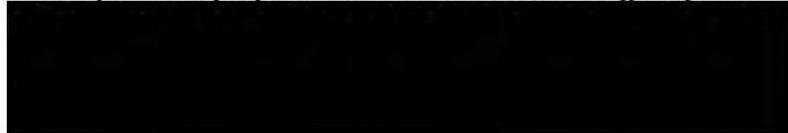
Members of the HSC Research and Development Division Behaviour Change Group

Name	Position	Organisation

HSC R&D Behaviour Change Group

COVID-19 Vaccine Uptake and Hesitancy Survey in Northern Ireland and the Republic of Ireland: Applying the Theory of Planned Behaviour

Report No: 4
COVID-19 Behaviour Change Cell
Date: 24/03/2021

Contents
(Click the text to jump to the topic)

Executive Summary

The global COVID-19 pandemic first appeared in Wuhan, China in late 2019 (World Health Organisation, 2020) and since then has caused unprecedented economic and social disruption as well as presenting a major challenge to public health (World Health Organisation, 2020).

On the 8th December 2020 the first person in the UK received a Coronavirus vaccination, since then efforts to roll out the vaccine have been encouraging. As of March 15th, 2021, 24, 453,221 individuals have received their first vaccine dose, while 1,610,280 have received a second dose. In Northern Ireland 629, 461 received a first dose and 54,636 received a second dose (Public Health England 2021).

Despite the mass progress in the public health distribution of vaccinations, there are individuals who will perceive vaccination as unsafe and/or unnecessary. Vaccine hesitancy also known as anti-vaccination or anti-vax is when there is a delay in acceptance or refusal of a vaccine by an individual despite their availability to the public.

The overall aims of the survey were to assess COVID-19 vaccine uptake and hesitancy in Northern Ireland and the Republic of Ireland, and to offer evidence-based guidance on promoting uptake and reducing hesitancy.

Key findings:

- 66.7% of the sample intended to get a vaccination as soon as possible
- 27.15% reported that they will get their vaccine when others get theirs and when it is clear there are no side effects.
- 6.15% of the sample have no intention of getting a vaccine
- There is a high mean intention (M=6.12) to get a COVID-19 vaccine (TPB)
- There is a high level of confidence to get a COVID-19 vaccine (VCS)
- There was low vaccine hesitancy (score (M=2.49) as measured by the VAX scale
- There is uncertainty and mistrust of side effects for children, this may because there is no vaccine currently available for children, or parents being apprehensive about children receiving a safe vaccine in the future.

The report includes a detailed breakdown of the survey questions, and recommendations. A summary powerpoint presentation of the report is also available. Follow up interviews are currently underway with a subsample of those surveyed who were hesitant to receive a vaccine.

Cite as:

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ on behalf of the Public Health Agency Behaviour Change Group. _COVID-19 Vaccine Uptake and Hesitancy Survey in Northern Ireland and the Republic of Ireland: Applying the Theory of Planned Behaviour title_, Report No: #. Public Health Agency: Belfast; March 2021.

Introduction

The global COVID-19 pandemic first appeared in Wuhan, China in late 2019 (World Health Organisation, 2020) and since then has caused unprecedented economic and social disruption as well as presenting a major challenge to public health (World Health Organisation, 2020). As of March 12th, 2021, the disease has infected more than 118, 707, 983 people with 2, 631,385 deaths worldwide. In Europe there has been 38, 947, 362 confirmed cases and 881,973 reported deaths (Dong & Gardner, 2021). In the United Kingdom 4.26 million (England=3.73m; Scotland =210K; Wales = 207K; Northern Ireland =115K) cases of coronavirus and 126,000 (England= 111K; Scotland =7,510; Wales = 5,454; Northern Ireland =2099) deaths are reported (Dong & Gardner, 2021), while in the Republic of Ireland 227K confirmed cases and 4,534 deaths were reported.

Due to the initial lack of a vaccine governments worldwide introduced extreme lockdown and quarantine measures, social distancing, and restrictions in face to face education, workplace and commercially available shopping services all to protect the vulnerable and restrict demand on health care services. The impact on these lockdowns has seen an increase in unemployment rates, employees being furloughed, business disruption and school and university closure, with children being home schooled by parents/family, and university teaching being delivered online.

COVID-19 Vaccine

The development of an effective vaccine against coronavirus to avoid further human and social, and economic loss was required. Vaccinations are an important method of public health disease prevention involving the administration of a microorganism in a live, killed or weakened state to stimulate immunity against disease (Centers for Disease Control and Prevention, 2018).The development of a vaccine was expedited by the United Kingdom (UK) Government Vaccine Taskforce (VTF) with several Covid-19 vaccine trials undertaken to identify which vaccines are both safe and effective, so that vaccination programmes can start as early as possible.

On the 8th December 2020 the first person in the UK received a Coronavirus vaccination, since then efforts to roll out the vaccine have been encouraging. As of March 15th, 2021, 24, 453,221 individuals have received their first vaccine dose, while 1,610,280 have received a second dose. In Northern Ireland 629, 461 received a first dose and 54,636 received a second dose of a vaccine (Public Health England 2021). Vaccine distribution is different between NI and Republic of Ireland. In the Republic of Ireland as of the 13th March 2021 451,589 individuals received a first vaccine dose while 164,345 had received a second dose (Government of Ireland, Health Executive Service, 2021).

Encouragingly, 79% of 140,000 people surveyed in 140 countries indicated vaccines are safe and 73% reported that they trusted a doctor or nurse more than any other source of health advice (The Wellcome Trust, 2019). From the same survey of UK respondents (n=1000) 75% felt that vaccines were safe, and 95% of those with children have had their children vaccinated. These figures are similar to those in the Republic of Ireland, where 73% of participants felt vaccines were safe, and 93% have had their children vaccinated.
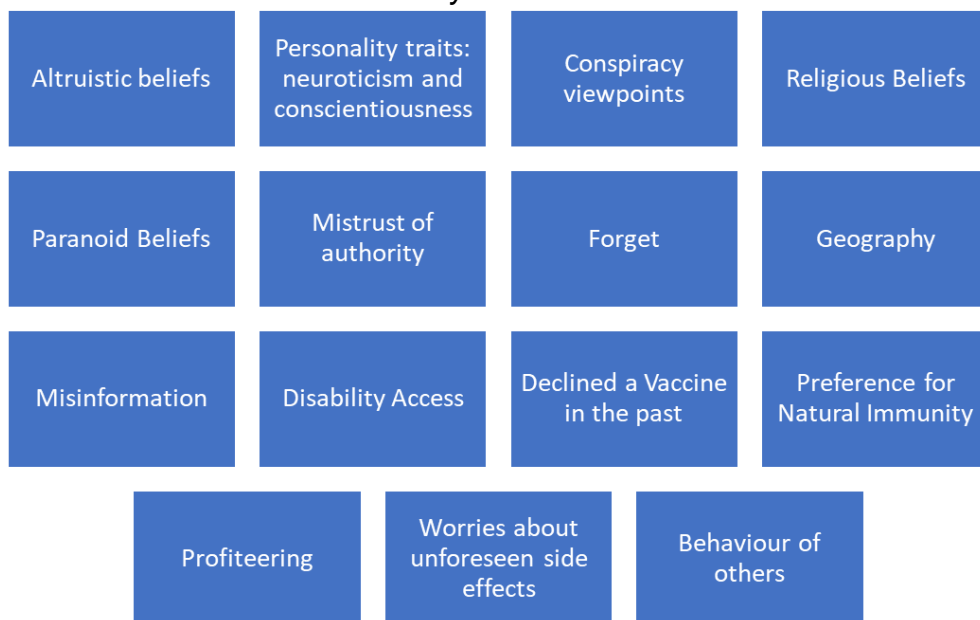
Vaccine Hesitancy

Despite the mass progress in the public health distribution of the vaccinations, there are individuals who will perceive vaccination as unsafe and/or unnecessary (Dubé et al., 2013). Vaccine hesitancy (also known as anti-vaccination or anti-vax) is defined as the delay in acceptance or refusal of a vaccine despite their availability to the public (Butler & MacDonald, 2018). Pre COVID-19, vaccine hesitancy was listed as one of the top ten threats to global public health, as a result it was recommended that countries incorporate plans to measure and address vaccine hesitancy into their public health programmes (WHO, 2018).

There are several explanations for vaccine hesitancy, some of which are medical and ethical concerns that have been in existence since the emergence of vaccines in the 1700's (Schwartz, 2012, Hussain et al., 2018). Recently, in 2019 the WHO identified complacency and inconvenience in accessing vaccines as some of the key reasons underlying vaccine hesitancy. Several psychological have also been proposed. These include: confidence to get a vaccine, altruistic beliefs about who is being protected; personality traits such as neuroticism and conscientiousness, conspiracy, religious beliefs, paranoid beliefs, mistrust of authority and the attitudes and behaviour of others (family, friends and health professionals) towards vaccines (Murphy et al, 2021).

Factors found to increase hesitancy include: forgetting to register for a vaccine, location of the vaccine centre, misinformation, lack of disabled access, previously declining a vaccine, a preference for natural immunity and worries about unforeseen future side effects of receiving a vaccine. A list of factors are shown in Figure 1.

Figure 1: Reasons for Vaccine Hesitancy

Vaccine Hesitancy and children

Vaccine hesitancy does not appear to be the same across the population. Over a decade ago hesitancy was reported to be on the rise amongst parents (Gowda & Dempsey, 2013) with concerns and a distrust about the potential side effects vaccines can have on children in the immediate and short-term. This distrust in vaccines for children may be in part due to a discredited case series in the Lancet (1997) that suggested measles, mumps and rubella (MMR) vaccine predisposed children to behavioural regression and pervasive developmental disorder (Rao & Andrade, 2011). The Lancet publication led to a plethora of studies, refuting the link between autism and vaccination (Taylor et al., 1999, Dales et al., 2001), although damage to parental confidence, and public opinion on vaccine certainty for children may have already occurred, evident in a measles outbreaks in the UK, USA and Canada in 2008/2009 due in part to parental hesitancy and children not being vaccinated (Eggertson, 2010). This finding would then suggest that public health authorities and effective communication to the public plays an important role in ensuring scientific guidance and information on vaccines is not misleading, and that anti-immunisation rhetoric or fashionable conspiracy theories are downplayed. According to Keelan et al., (2007) online anti-immunisation videos have gained a large viewing by the public, and social media support. The effects of anti-vaccine media has been shown to influence public attitudes, beliefs, and perceived social norms as predictors of vaccine uptake (Britt & Englebert, 2018). Vaccine Hesitancy and COVID-19.

Unfortunately, Covid-19 vaccine hesitancy research is limited in Northern Ireland and the Republic of Ireland making public health decisions regarding communicating effectively with the public more difficult. A study by Murphy et al (2021) examined the factors that influence vaccine hesitancy and uptake, they showed 35% of those in Republic of Ireland and 48.9% in Northern Ireland (Murphy, et al., 2021) were hesitant. The survey was conducted during the first COVID-19 national lockdown when a vaccine hadn't been developed, hence views of the public on a vaccine could be very different, furthermore a small sample size from NI (n=46) took part. To date, no studies have included a psychological behaviour change theory to predict COVID-19 vaccine uptake in NI that would provide a further level of detail when advising the public health authorities.

Psychological Behaviour Change

Several psychological behaviour change theories have their origins in social, and cognitive sciences, and explain, how and why individuals engage in intentional health behaviours (Craig et al., 2013; Hagger & Chatzisarantis, 2014). By integrating psychological behaviour change theory such as the Theory of Planned Behaviour into survey design of health intention and behaviours, the psychological mechanisms of behaviour change can be better understood, then operationalized when making recommendations on public health messaging (National Institute for Health & Care Excellence, 2018).

The Theory of Planned Behaviour (TPB, Ajzen, 1991) states that an individual's attitudes/beliefs, subjective norms and perceived behavioural control predict intentions and subsequent behaviours. The TPB, has been used previously to explain vaccine uptake, although the current study is the first where TPB will be applied to COVID-19 vaccine uptake and hesitancy in NI. As

already described in the introduction there are many factors that can predict hesitancy and uptake, so in addition to TPB factors, other factors will be included as predictors. These other factors include: Participant Demographics (Age, Gender, Employment, Educational Level, Ethnicity), Previous Experience of COVID-19 (i.e., having had a positive test for COVID-19, having had to self-isolation, knowing someone who has had COVID-19, knowing someone who has had a vaccine or being at an increased risk of COVID-19). Finally, as mistrust and confidence in the effectiveness of vaccines has been a reported issue for parents consenting to children receiving vaccines, parental mistrust and confidence in children being vaccinated will be included.

Aims of the Study
1.   To assess COVID-19 vaccine uptake and hesitancy in Northern Ireland and the Republic of Ireland.
2.   To assess Attitudes, Subjective Norms and Perceived Behavioural Control as predictors of intentions to vaccinate against COVID-19.
3.   To consider Demographic factors, Confidence in getting a vaccine and Previous experiences of COVID-19 on intention to vaccinate.
4.   To consider confidence in giving the COVID-19 vaccine to children
5.   To offer some suggestions for promoting uptake and reducing hesitancy.

Method

Research Design and Recruitment

Participants were recruited via social media platforms, Twitter and Facebook. Data was collected via a Qualtrics cross sectional survey between 29/01/2021 – 23/02/2021 (i.e. seven weeks after the first COVID-19 Vaccination, and during a national lockdown in NI and ROI).

Measures included in the Survey

Previous Experience of COVID-19

All participants reported either yes or no to: having had a positive test for COVID-19; are they at an increased risk of COVID-19; have they had to self-isolate; did they know someone with COVID-19; and did they know someone who had received a COVID-19 vaccination.

Vaccine Confidence Scale (Gilkey et al., 2014)

Consists of eight items assessing three factors: benefits of vaccination (Benefits), the harms of vaccination (Harms), and trust in health care providers (Trust). Each item used an 11-point response scale ranging from 0 (strongly disagree) to 10 (strongly agree). The scale is valid and reliable across many diverse populations (Gilkey et al., 2014: Gilkey et al., 2016).

Vaccine Attitudes Examination Scale (VAX) (Martin & Petrie, 2017)

Consists of 12 items assessing four factors (Vaccine Mistrust, future worries, profiteering, and preference for natural immunity). Items were presented in the form of statements, with

responses on a 6-point Likert-type scale ranging from "strongly agree" to "strongly disagree." Higher scores reflect stronger antivaccination attitudes.

Adapted version of Theory of Planned Behaviour Vaccine Questionnaire (Ajzen, 2013) Consists of 19 items that assess Attitudes, Subjective Norm, Perceived Behavioural Control and Intentions to receive a COVID-19 vaccination. Items were presented in a 7-point Likert Scale ranging from "strongly disagree" to "strongly agree". In the absence of a COVID-19 questionnaire, the original scale was adapted to include the word COVID-19 in items when referring to vaccination to make the scale specific to assessment of COVID-19.

Ethical Approval

Ethical approval was granted by Ulster University. All participants provided informed consent and were free to withdraw at any time. No personal identifying data was collected to ensure confidentiality. Participants on completion of the survey were invited to follow a separate online weblink to take part in interviews to discuss vaccine hesitancy, the interviews are ongoing and will be reported separately.

Data Handling

The mean or sum of participants' responses were calculated as per the scoring criteria for each measure. Analysis was conducted using Statistical Package for the Social Sciences 26 (copyright IBM corp., NY, USA) with the alpha level set to $p < .05$. Pearson's correlations were considered weak, moderate and strong when $r = .20$, $.50$ and $.80$ respectively. Given the sample size was n= 386, central limit theorem inferred the data was normally distributed. Levene's tests confirmed homogeneity of variances for all statistical tests henceforth. Pearson's bivariate correlations were conducted to assess whether relationships existed between TPB factors, VAX, VCS. Independent samples t-tests assessed whether there was a significant difference in gender or country. Linear Regression analysis was calculated to establish a best fit model for predicting vaccine intentions using the Theory of Planned Behaviour Factors (Attitudes, Subjective Norms, Perceived Competence, Intentions, gender and previous experience of COVID-19).

Results

Participant Demographics
A total of 439 participants took part with 386 (Mean Age = 42.23; SD = 12.16; Range = 19-81; 83% = female, 17% = male) completing all questions.
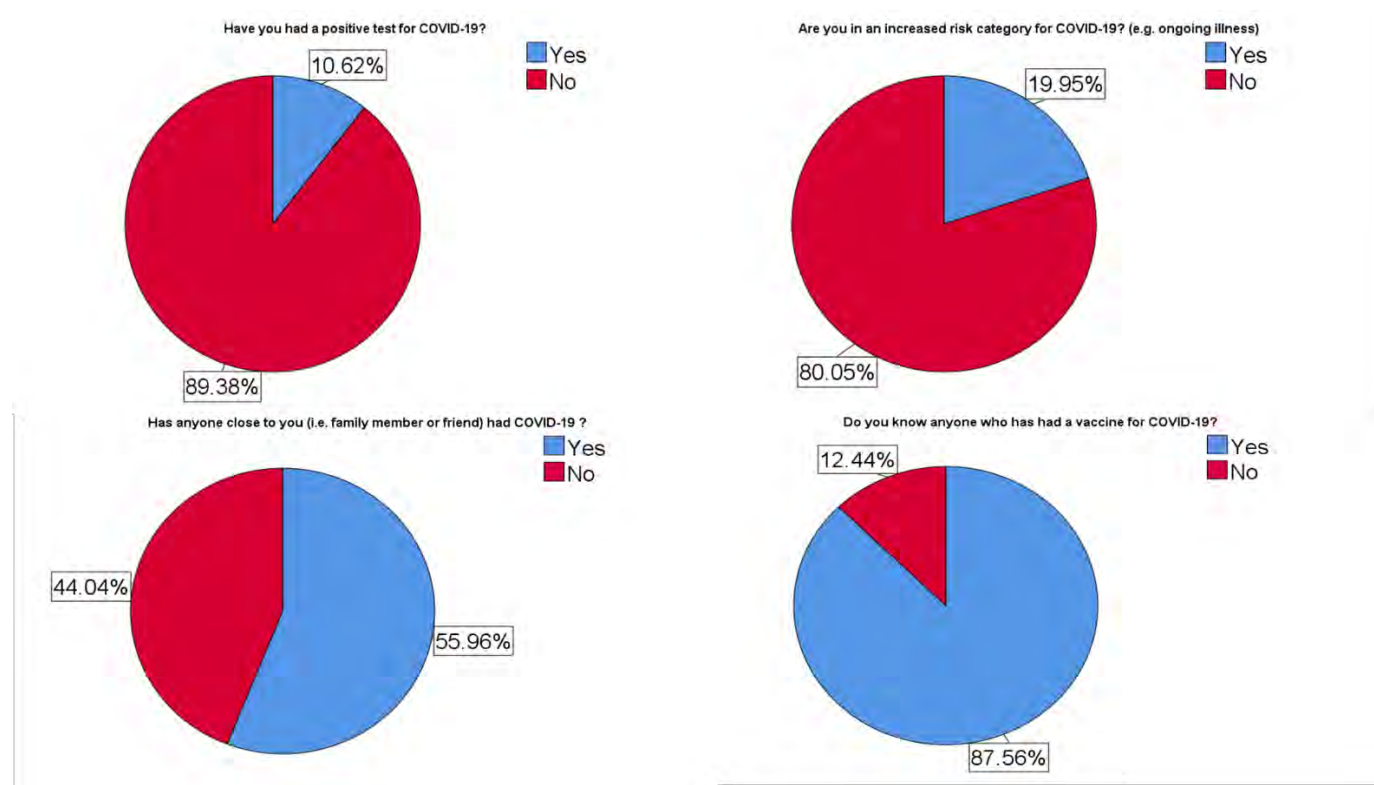
53% were from Northern Ireland, 43% Republic of Ireland, 5% from Germany, England, or USA.
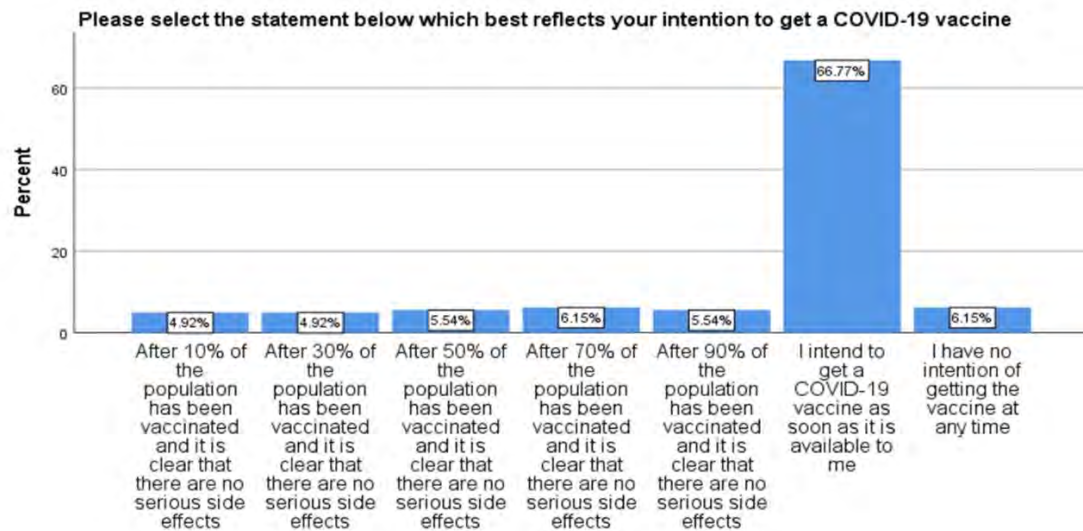
The majority of the sample were white 99%, .3% were Hispanic Latino, .3% Black, and .3% Mixed Race.

Educational achievement included University Bachelor Degree =7.3%, Master's Degree = 13.2%, PhD or higher =11.7%, Trade/school 39.1%, and 28.8% preferred not to say.

Most of the sample were in full time employment =53.4%, employed part time =19.2%, retired =9.6%, Unemployed/furloughed as a result of Covid-19 =6.7%, Unemployed seeking employment = 5.3%, and 6% preferred not to say.

Experience of COVID-19 and Views on Vaccination Uptake

Do you expect to get a vaccine of any kind in the coming year?

Yes: 84.81%
No: 15.19%

Do you expect your child(ren) to receive a vaccine of any kind in the coming year?

Yes: 72.09%
No: 27.91%

Please select the statement below which best reflects your intention to get a COVID-19 vaccine

After 10% of the population has been vaccinated and it is clear that there are no serious side effects: 4.92%

After 30% of the population has been vaccinated and it is clear that there are no serious side effects: 4.92%

After 50% of the population has been vaccinated and it is clear that there are no serious side effects: 5.54%

After 70% of the population has been vaccinated and it is clear that there are no serious side effects: 6.15%

After 90% of the population has been vaccinated and it is clear that there are no serious side effects: 5.54%

I intend to get a COVID-19 vaccine as soon as it is available to me: 66.77%

I have no intention of getting the vaccine at any time: 6.15%

Do you feel your perception of the COVID vaccines are any different to your perception of other vaccines?

Table 1: Mean scores, standard deviation, range and possible range for the: Vaccine Confidence Scale; Vaccine Attitudes Examination (VAX) Scale; and Theory of Planned Behaviour subscales (Attitudes, Subjective Norms, Perceived Behavioural Control and Intention to get a vaccine).

	M	SD	Range	Possible Range
Vaccine Confidence Scale	7.98	1.79	1 − 10	1–10
Vaccine Attitudes Examination (VAX) Scale	2.49	.77	1 − 5	1-5
TPB Attitudes scale	2.34	1.38	1-7	1-7
TPB Subjective Norm scale	5.64	1.34	1-7	1-7
TPB Perceived behavioural control	4.35	.84	1-6	1-7
TPB Intention to get a vaccine	6.12	1.5	1 − 7	1–7

There was a high level of confidence (7.98) in getting the COVID-19 vaccine as indicated in the VCS scale. There was also a high mean intention score (6.12) to get a COVID-19 vaccine. There was a low mean score (2.49) on the VAX scale indicating low vaccine hesitancy in the sample. Subjective Norm and PBC scores were high. No gender effects were found for any of the scales. The mean scores for the sub factors of the VAX scale include: Worry about unforeseen future events as a result of the vaccine was the highest (M=3.32, SD=.82), followed by views of natural immunity (M=2.44, SD =.9), pharmaceutical company profiteering (M=2.17, SD=.98) and mistrust of vaccine benefit (M=1.97, SD=.89).

A linear multiple regression was calculated to determine what were the predictors of intention to vaccinate. Theory of Planned Behaviour factors that predicted Intentions to vaccinate included Attitudes, Subjective Norms, and the VAX Mistrust Factor. Other potential factors for vaccine uptake as listed on Table 2 did not predict intentions to vaccinate.

*Table 2: Linear Regression Model Predicting Vaccine Intentions*

Regression Coefficients[a]

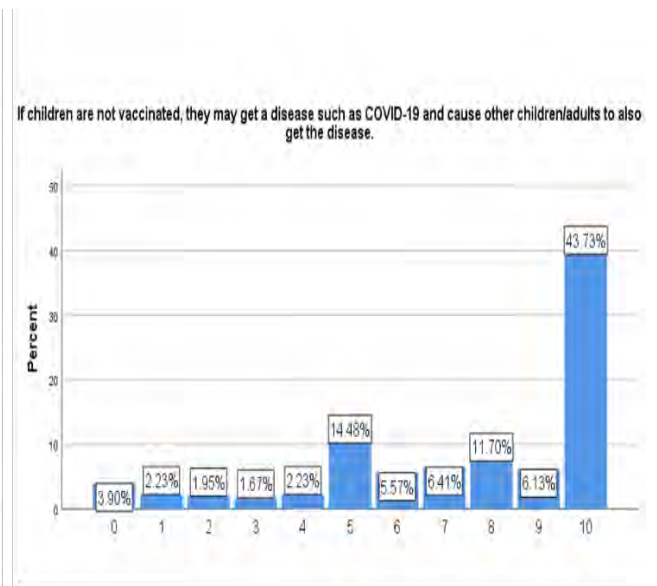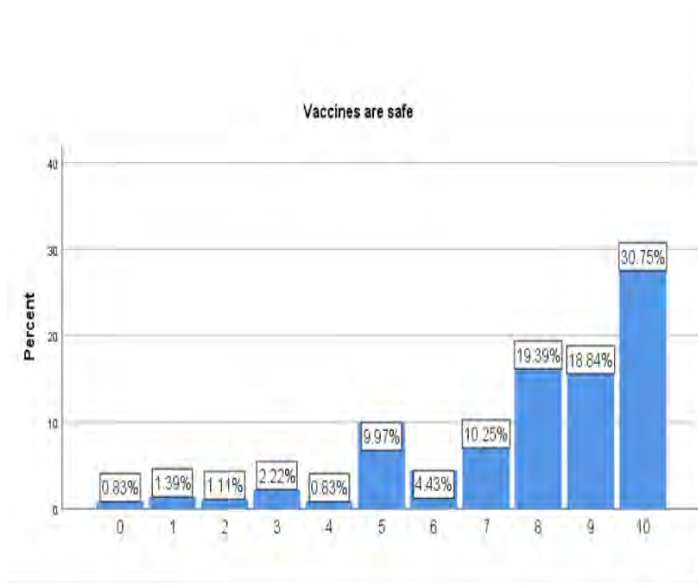| Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.244	.882		7.082	.000
	Gender	.043	.122	.011	.354	.723
	Have you had a positive test for COVID-19?	.159	.162	.033	.984	.326
	Have you had to self-isolate at any point during the COVID-19 pandemic?	.123	.101	.041	1.216	.225
	Are you in an increased risk category for COVID-19? (e.g. ongoing illness)	-.124	.114	-.033	-1.085	.279
	Has anyone close to you (i.e.family member or friend) had COVID-19?	.010	.096	.003	.108	.914
	Do you know anyone who has had a vaccine for COVID-19?	.147	.149	.031	.990	.323
	Perceived Beh Control	.058	.058	.032	.998	.319
	Subjective Norms	.109	.052	.097	2.105	.036
	Attitudes Mean for all questions	-.586	.065	-.538	-9.073	.000
	VAX mistrust factor	-.197	.091	-.114	-2.165	.031
	VAX worry factor	.006	.076	.003	.080	.937
	VAX profit factor	-.149	.079	-.095	-1.883	.061
	VAX immunity factor	.000	.076	.000	-.004	.996
	VCS Mean for all questions	.067	.047	.077	1.415	.158

a. Dependent Variable: Intentions Mean for all questions

Participant responses to the individual questions included in the Vaccine Confidence Scale and the VAX scale are presented below.
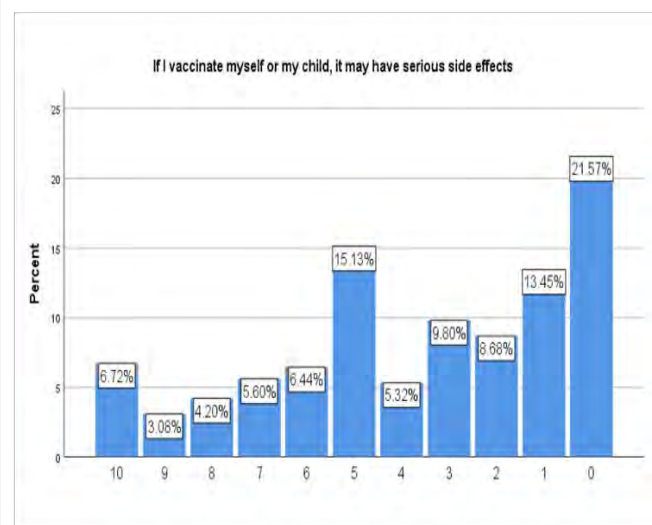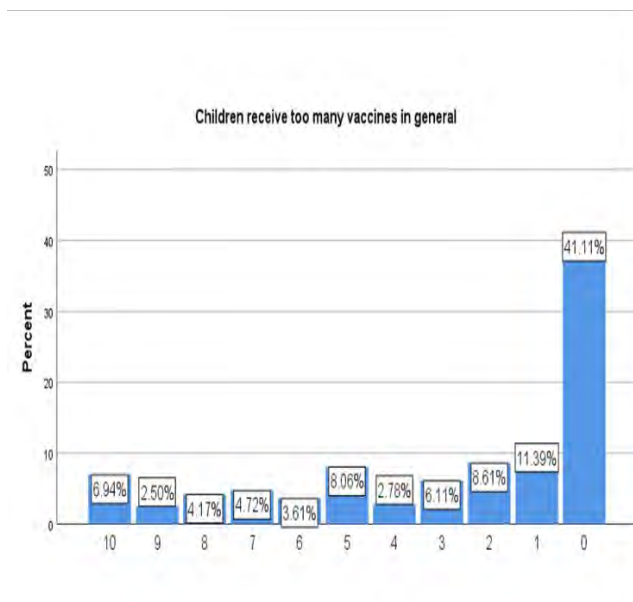
Vaccine Confidence Scale - Vaccine Benefit (4 items)
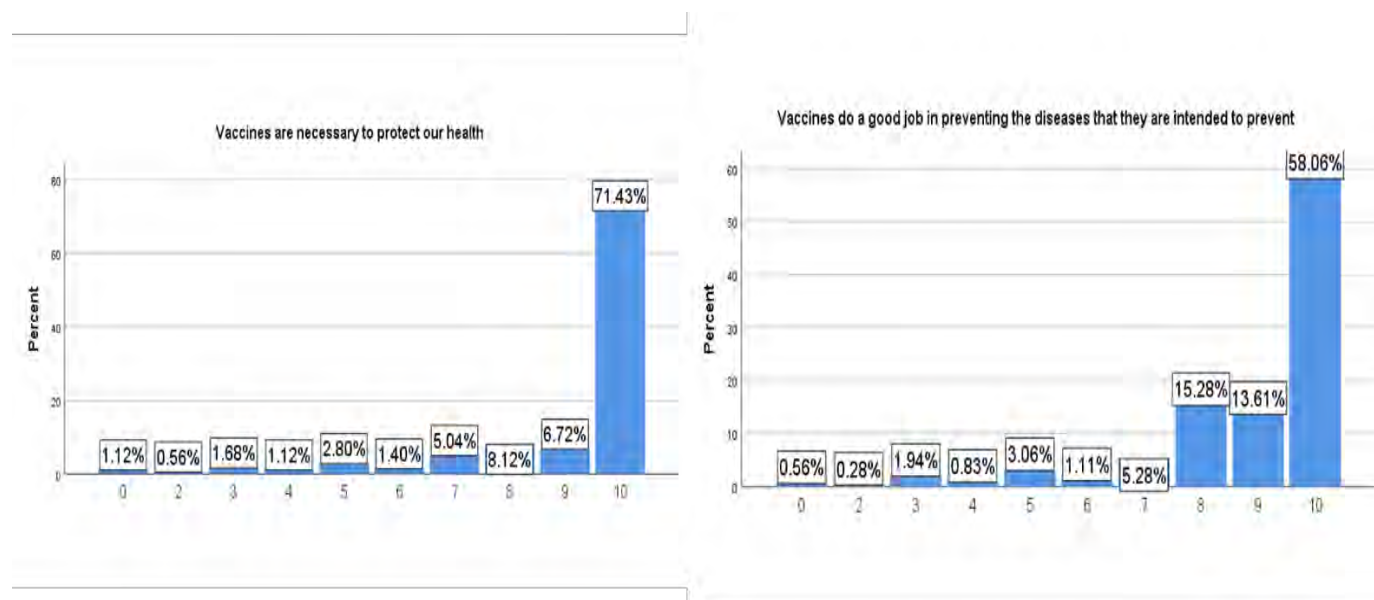
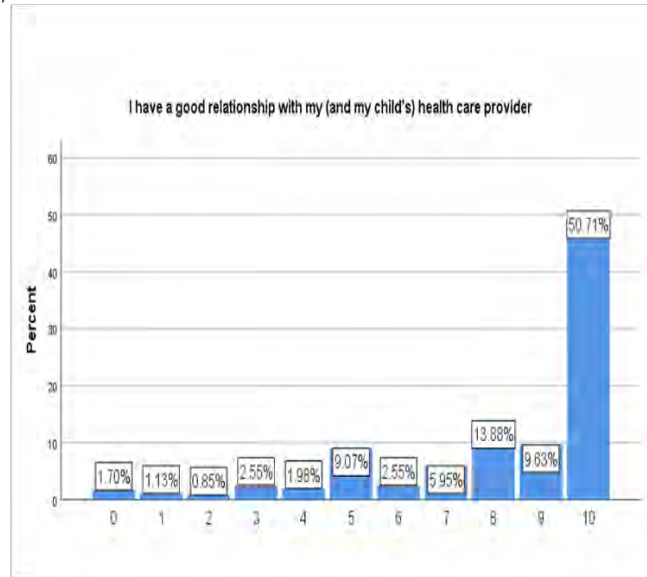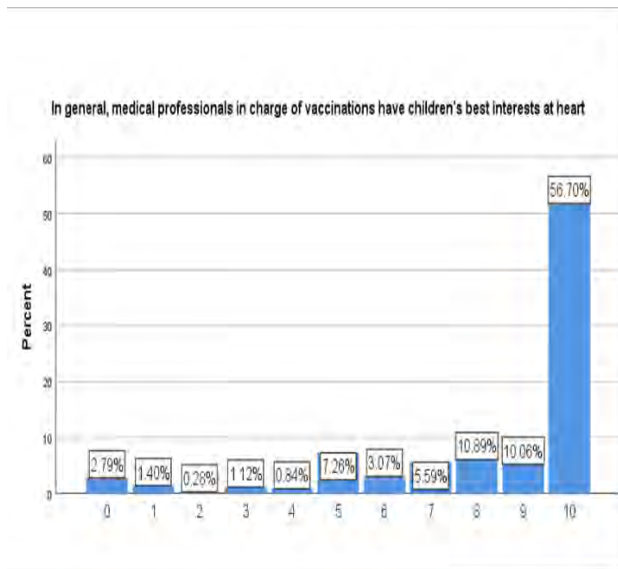Please indicate 0 being "Strongly Disagree" and 10 being "Strongly Agree"

Vaccines are safe

0 — 0.83%
1 — 1.39%
2 — 1.11%
3 — 2.22%
4 — 0.83%
5 — 9.97%
6 — 4.43%
7 — 10.25%
8 — 19.39%
9 — 18.84%
10 — 30.75%

If children are not vaccinated, they may get a disease such as COVID-19 and cause other children/adults to also get the disease.

0 — 3.90%
1 — 2.23%
2 — 1.95%
3 — 1.67%
4 — 2.23%
5 — 14.48%
6 — 5.57%
7 — 6.41%
8 — 11.70%
9 — 6.13%
10 — 43.73%

Please indicate 0 being "Strongly Disagree" and 10 being "Strongly Agree"

Vaccine Confidence Scale - Vaccine Harm (2 items- Reverse Scored)

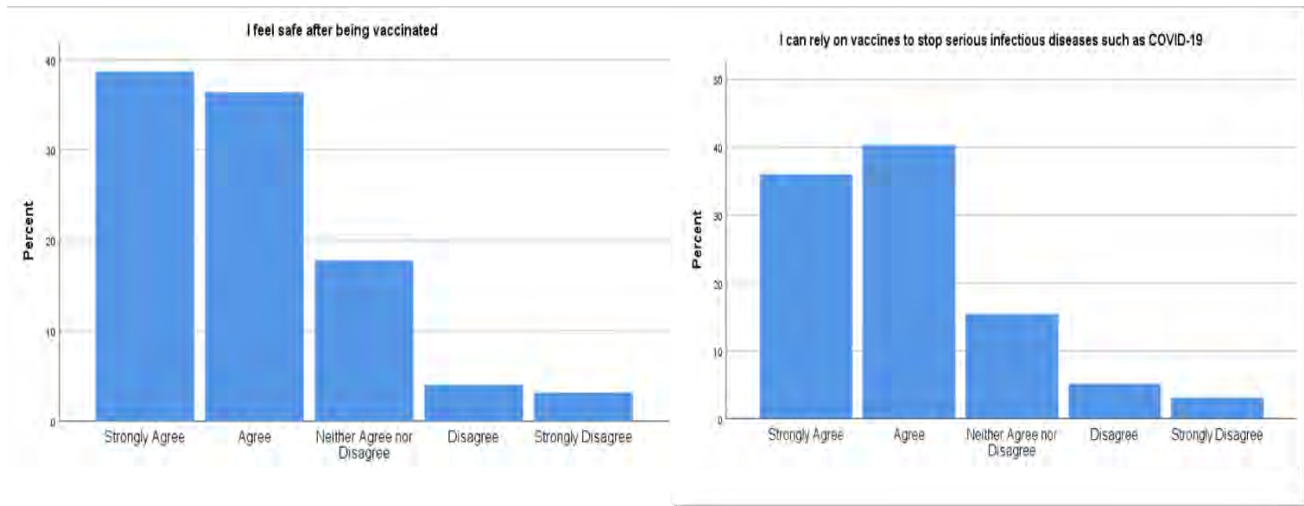Children receive too many vaccines in general

10 — 6.94%
9 — 2.50%
8 — 4.17%
7 — 4.72%
6 — 3.61%
5 — 8.06%
4 — 2.78%
3 — 6.11%
2 — 8.61%
1 — 11.39%
0 — 41.11%

If I vaccinate myself or my child, it may have serious side effects

10 — 6.72%
9 — 3.08%
8 — 4.20%
7 — 5.60%
6 — 6.44%
5 — 15.13%
4 — 5.32%
3 — 9.80%
2 — 8.68%
1 — 13.45%
0 — 21.57%

Vaccine Confidence Scale - Trust in Medical/Health Providers (2 items)

In general, medical professionals in charge of vaccinations have children's best interests at heart

- 0: 2.79%
- 1: 1.40%
- 2: 0.28%
- 3: 1.12%
- 4: 0.84%
- 5: 7.26%
- 6: 3.07%
- 7: 5.59%
- 8: 10.89%
- 9: 10.06%
- 10: 56.70%

I have a good relationship with my (and my child's) health care provider

- 0: 1.70%
- 1: 1.13%
- 2: 0.85%
- 3: 2.55%
- 4: 1.98%
- 5: 9.07%
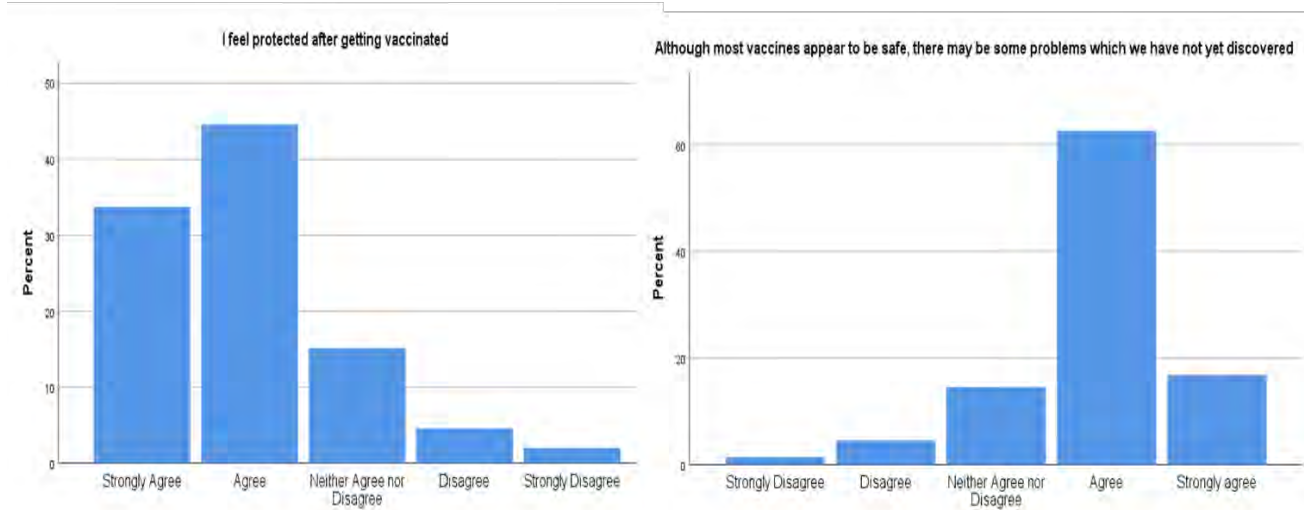- 6: 2.55%
- 7: 5.95%
- 8: 13.88%
- 9: 9.63%
- 10: 50.71%

Please indicate 0 being "Strongly Disagree" and 10 being "Strongly Agree"

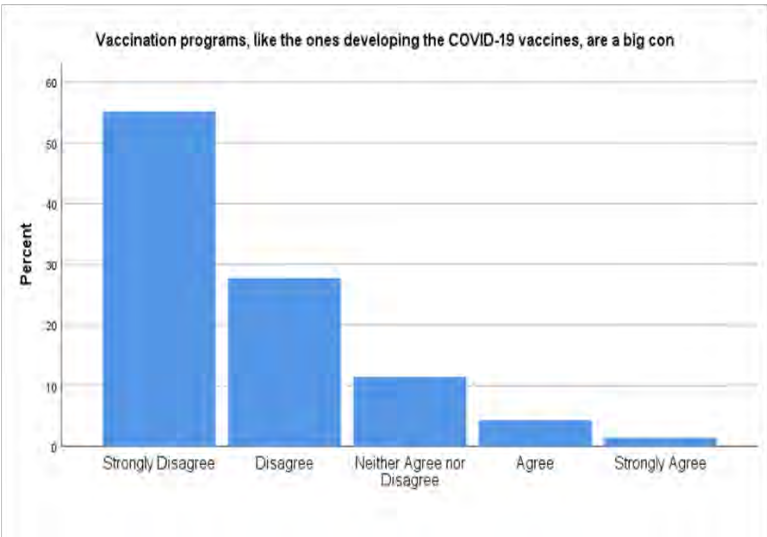Vaccine Attitudes Examination (VAX) Scale – Mistrust of Vaccine Benefit (4 items)

I feel safe after being vaccinated

I can rely on vaccines to stop serious infectious diseases such as COVID-19

Vaccine Attitudes Examination (VAX) Scale – Mistrust of Vaccine benefit (4 items)

I feel protected after getting vaccinated

Although most vaccines appear to be safe, there may be some problems which we have not yet discovered

Vaccine Attitudes Examination (VAX) Scale – Worries about unforeseen future events (2 items)
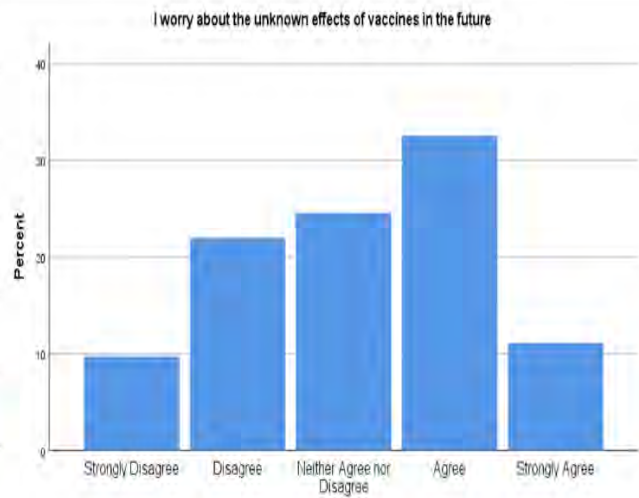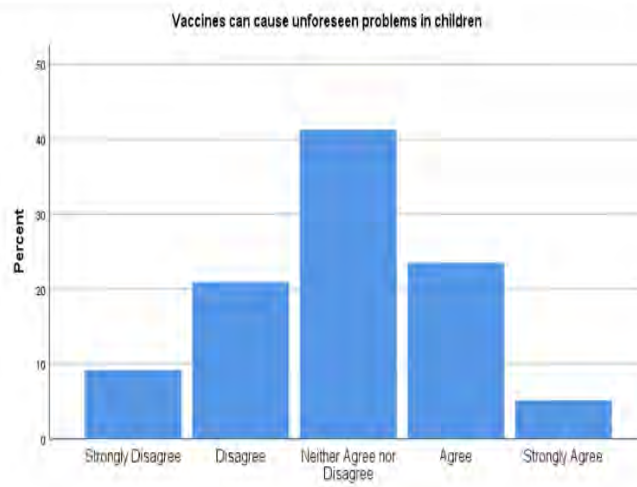
Vaccines can cause unforeseen problems in children

I worry about the unknown effects of vaccines in the future

Vaccine Attitudes Examination (VAX) Scale – Concerns about future profiteering (3 items)

Vaccination programs, like the ones developing the COVID-19 vaccines, are a big con
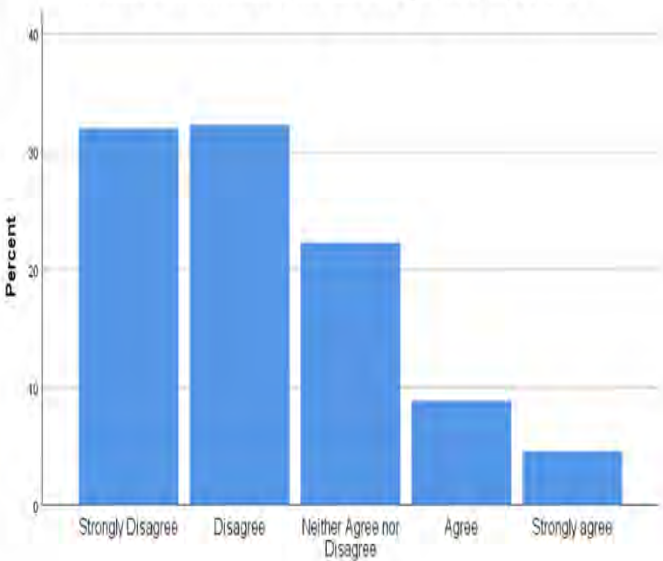
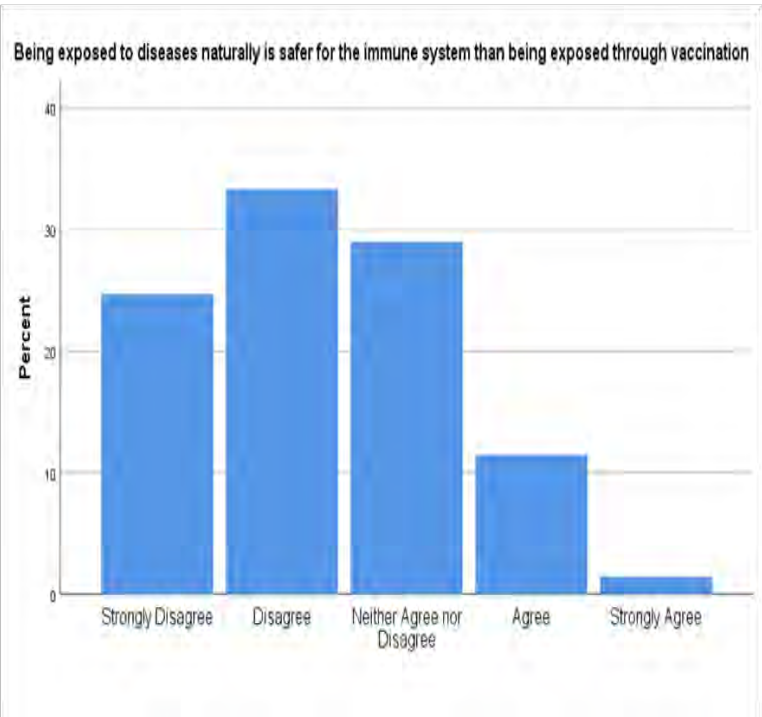Vaccine Attitudes Examination (VAX) Scale – Concerns about future profiteering (3 items)

Vaccines make a lot of money for pharmaceutical companies, but do not do much for regular people like me
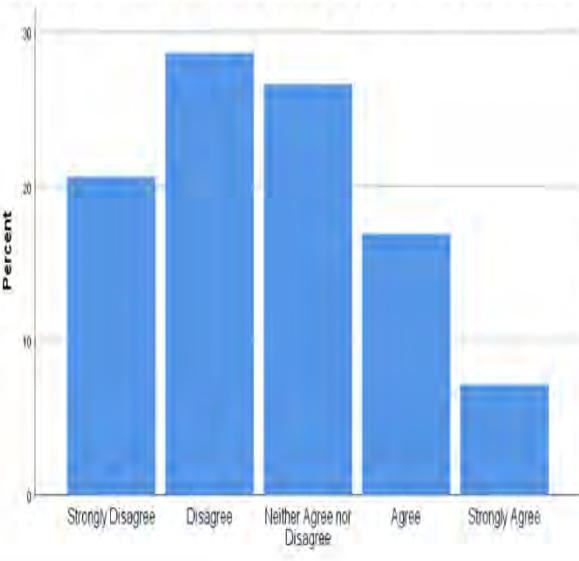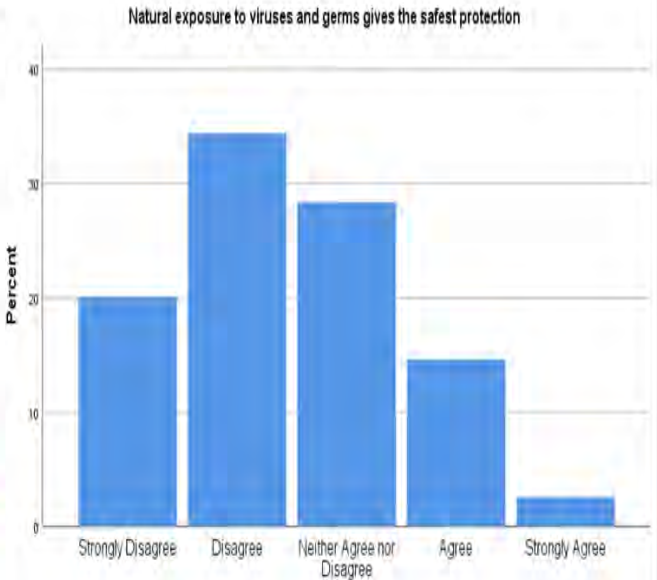

Authorities promote vaccination for their own financial gain, not for people's health

Vaccine Attitudes Examination (VAX) Scale – Preference for Natural Immunity (3 items)

Being exposed to diseases naturally is safer for the immune system than being exposed through vaccination

Vaccine Attitudes Examination (VAX) Scale – Preference for Natural Immunity (3 items)

Natural immunity lasts longer than a vaccination

Natural exposure to viruses and germs gives the safest protection
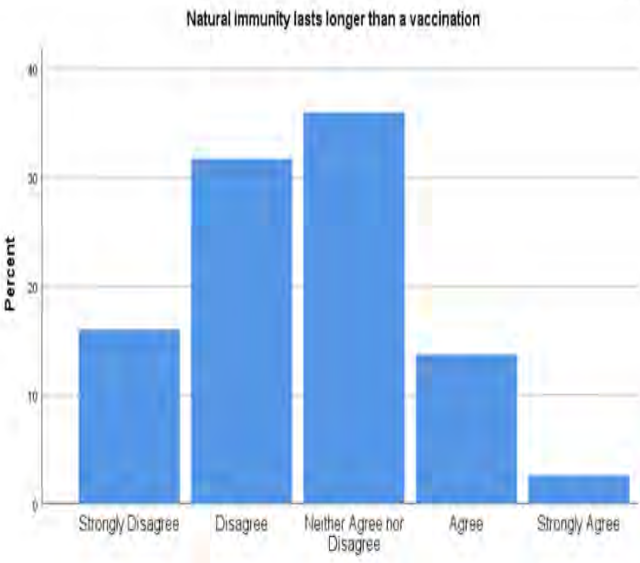
Conclusion

- Theory of Planned Behaviour factors predicted intention to vaccinate. In particular, attitudes towards COVID-19 vaccines, subjective norms and mistrust are the main factors that predict vaccine intention in Northern Ireland and the Republic of Ireland.
- 66.7% intend to get a vaccination as soon as possible
- 27.15% will get their vaccine when others get theirs and when it is clear there are no side effects.
- 6.15% of the sample have no intention of getting a vaccine
- There is a high mean intention (M=6.12) to get a COVID-19 vaccine (TPB)
- There is a high level of confidence to get a COVID-19 vaccine (VCS)
- There is a Low vaccine hesitancy (score (M=2.49) as measured by the VAX scale.
- Given the recent Astra Zenaca blood clotting reporting, mistrust maybe higher that reported

Recommendations:

- Encourage positive attitudes towards getting the vaccine.
- Target hesitant population to change attitudes through targeting subjective norms- campaigns that allow people to see and hear about others receiving the vaccine.
- Reduce mistrust and worry of the side effects of the vaccine
- There is uncertainty and mistrust of side effects for children, this may because there is no vaccine currently available for children, or parents being apprehensive about children receiving a safe vaccine in the future.
- Repeat a shorter version of the survey to monitor changes in attitudes, particularly mistrust and worry, be more targeted to parents, and those in the community who are likely more hesitant.
- Qualitative interviews are currently underway to understand those who were identified as hesitant. Considering targeting parents, or those in professions that are more likely to be hesitant is advised.
-

Limitations:

The study had several limitations that should be considered when interpreting the report.

- 83% of the sample were female
- Mean average age was 42 years
- Survey was completed 29th January- 23rd February, 7 weeks since the first vaccine was administered in Northern Ireland. Views of the public can change.

This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:
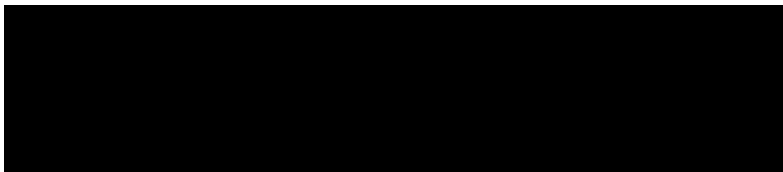
Members of the HSC Research and Development Division Behaviour Change Group

Name	Position	Organisation

**HSC R&D Division
Northern Ireland**
improving health and social care through research

HSC **Public Health
Agency**
Research and Development
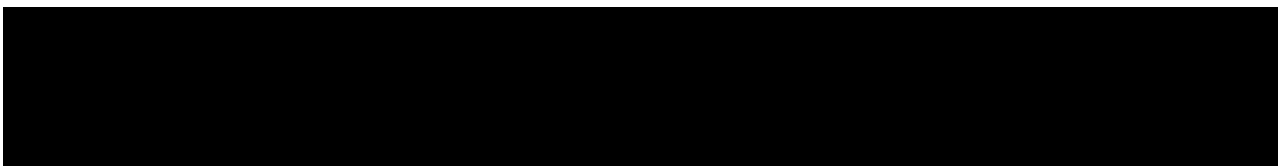
HSC R&D Behaviour Change Group

Encouraging reporting of results from LFD asymptomatic home testing

Report No: 5
COVID-19 Behaviour Change Cell
Date: 12/05/2021

Background
- Lateral flow tests are used for asymptomatic testing (https://www.gov.uk/guidance/covid-19-self-test-help). Currently they are offered to school staff & pupils in years 12-14, university staff and students, hauliers and to workplaces of more than 10 people.
- Asymptomatic home testing has been rolled out in England. Anyone who does not have symptoms can now get regular rapid lateral flow tests to check for COVID-19 from NHS.uk and encouraged to test themselves twice per week, every 3 or 4 days.
- The result is given within 30 minutes on the test kit. The individual is then required to log the result on the website, if test is positive, need to book a confirmatory PCR

Problem
- For home testing, if an individual gets a positive test, they may be reluctant to report a positive result and book a confirmatory PCR

Cause/Contributing Factors

Potential practical barriers
- Ordering kits and uploading results relies primarily on a web-based system. It is possible to phone to book test kits and to report a result, but more difficult to identify how to do this. This may mean some individuals find it more difficult to get test kits and report results.
- To avail of home testing via NHS website, there are three different weblinks involved for each step: (1) order of kits; (2) upload of results; and (3) follow up booking a confirmatory PCR test. Multiple steps on different websites may be a potential barrier.
- Undertaking the test requires understanding of how to use test kit. Videos are provided, but they may be hard for some to follow.
- The implications of a positive test are that an individual may need to self-isolate if they test positive. It is important to ensure that financial and practical support for self-isolating is easy to identify on the website.

Psychological Barriers
- There have been a number of media reports on diagnostic accuracy of the test. Individuals may be booking the test to confirm they are COVID free. If they get a positive result, they may choose to dismiss this, possible blaming test error. May need to address cognitive dissonance. It needs to be clear in the comms that goes with the roll out that this test is not a 'green light' to return to social activities, but a 'red light' to prevent spread. It will be important to harmonise messages across comms relating to the promotion of the scheme and the testing site. One way to do this could be to promote the scheme as a tool for surveillance as part of the re-opening.
- The intention–behaviour gap describes a disconnect between the intended action and subsequent behaviour. If an individual has ordered a test, you could assume they intended to report the result. However, if an individual does not subsequently report their result, according to the Theory of Planned Behaviour, this may be influenced by their *perceived behaviour control* (e.g. ease of undertaking the behaviour), their *subjective norms* (e.g. are others are doing it & expect them to do it too) and their *attitudes* (e.g. their expectations around the outcome of performing the behaviour).
- There is no immediately apparent incentive to log a positive finding, just punishment in the form of self-isolating. Pro-social messages may help with this by emphasising the incentives in terms of preventing further waves or for as many as possible to keep getting checked until we get out of the pandemic. Could also help identify and suppress variants before they spread.

Could also consider financial incentives (e.g. 'prize draw') as a novel way of incentivising uploading results.

- Positive shaping: Gratitude evolves from positive psychology that focuses on the role positivity plays in everyday life, it is linked to behaviour, persistence and wellbeing. It can be achieved by recognising that one has obtained a positive outcome. It can also be achieved through experience of either giving or receiving gifts. Gratitude is a deep emotion and when present a sense of gratitude can be viewed as a reward that is likely to encourage future similar behaviour. Based on this: gratitude and positive mood response could be the reward built into messages during testing and uploading results. There will be a level of creativity required in the content of positive messages to make them encourage noticing, acknowledgment of benefit to themselves and to others.

Recommendations from BCG Group
1. Harmonise the messaging across various platforms, emphasising the incentive to get tested and report positive tests address cognitive dissonance
2. Clear communication about: (1) purposes of the test; different drivers for uptake of test and reporting of test result; and (2) the support available if have to self-isolate to address their perceived behaviour control. Simplifying the purpose message (next wave, variants, benefits)
3. Emphasise the social norms around uptake of tests and subsequently uploading the positive result, to demonstrate that others expect you to upload a test result and are doing it themselves. Also, may highlight the benefits to others around you as an incentive.
4. Emphasis on the importance of convenience and practical barriers; ease of tests, reporting. Clear information on time limit of uploading results after test.
5. Longer term, targeting habit formation through repeating the behaviour in the same context (place, & time) may be desirable. One way to do this is to cue the behaviour using the same time each week that is easy to remember (e.g. testing Tuesday) and regular reminders for next test (e.g. text messages), countdown of tests within a kit, gamification of the test countdown as rewards/incentives (e.g. if part of an app, could accumulate 'badges' for completing set number of tests, like other behavioural apps use).
6. Using theories of gratitude and positive shaping of the behaviour. Especially as this behaviour of testing has more demands.

Members of the HSC Research and Development Division Behaviour Change Group

Name	Position	Organisation

HSC R&D Division
Northern Ireland
improving health and social care through research

HSC Public Health Agency
Research and Development

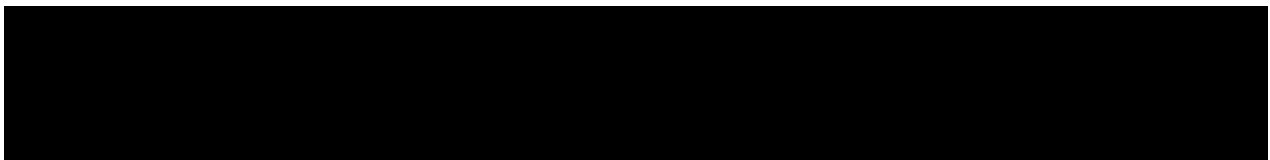# HSC R&D Behaviour Change Group

Have Shops Changed What They Are Doing to Prevent the Spread of Coronavirus: Wave 3?

Report No: 6, COVID-19 Behaviour Change Cell
# Date: 28 May 2021

Introduction

Over the course of the COVID-19 pandemic, the retail sector has introduced a range of measures to limit the transmission of COVID-19. In summer and autumn 2020 we audited these measures using an anonymous survey to ascertain the level of compliance. Following the re-opening of shops in May 2021, a convenience sample of 56 different shops were surveyed. Responses are presented as the frequency and percentage.

Shopping Experience

Respondents rated how safe they felt in shops on a scale of 1 (very unsafe) to 5 (very safe). Overall, 77% said they felt safe or very safe when shopping. (Figure 1).

Figure 1: How safe did you feel shopping?
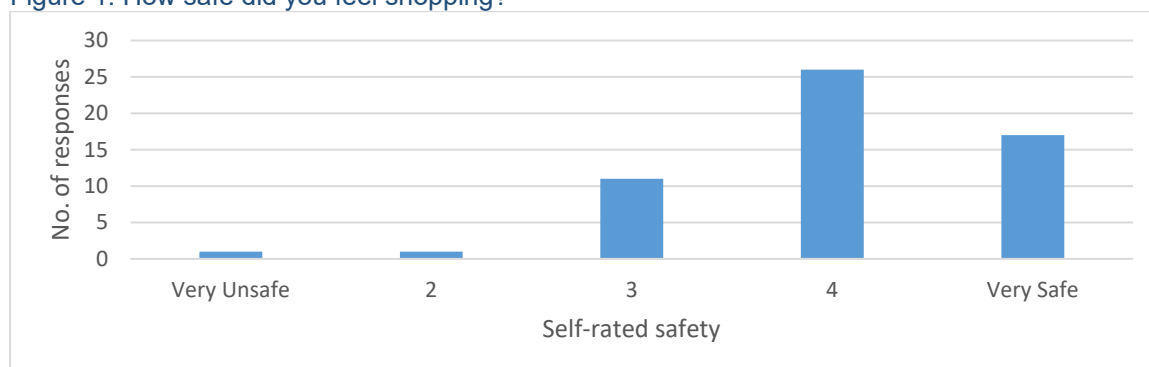
In contrast to our previous surveys, most shops (51/56, 91%) did not require customers to queue outside in order to limit the number of customers in the store. In Autumn 2021, 18% of stores required customers to queue.

Changes to the Shopping Environment

As noted in the Autumn 2020 survey, there have been some apparent relaxations in transmission prevention measures. A smaller percentage of shops surveyed in Spring 2021 limited the number of customers in the store (27%), were still using a one-way system in the store (25%) or indicated that they preferred contactless payment.

		Autumn 2020		Spring 2021	
		Responses	%	Responses	%
Was there a limit on the number of people allowed in the store?	No	18	35.3	31	55.4
	Yes	20	39.2	15	26.8
	Other	13	25.5	10	17.9
Was a one way system in place?	No	33	64.7	40	71.4
	Yes	18	35.3	14	25.0
	I cannot remember	0	0.0	2	3.6
Was there any indication that contactless payment was preferred?	No	14	27.5	32	57.1
	Yes	26	51.0	10	17.9
	I cannot remember	11	21.6	14	25.0
Was there a transparent barrier at the till between you and staff or other customers?	No	2	3.9	4	7.1
	Yes	48	94.1	49	87.5
	I cannot remember	1	2.0	3	5.4

Provision of Information

The use of floor markings and signs to promote social distancing and hygiene appear to be less frequently used than in Autumn 2020.

		Autumn 2020		Spring 2021	
		Responses	%	Responses	%
Were there clear floor markings to aid social distancing (arrows, yellow tape etc.)?	No	10	19.6	22	39.3
	Yes	39	76.5	31	55.4
	I cannot remember	2	3.9	3	5.4
Was there clear guidance (e.g. signs) on social distancing for people on arrival?	No	2	3.9	9	16.1
	Yes	49	96.1	45	80.4
	I cannot remember	0	0.0	2	3.6
Was there clear guidance (e.g. signs) on hygiene for people on arrival?	No	4	7.8	11	19.6
	Yes	47	92.2	44	78.6
	I cannot remember	0	0.0	1	1.8

Hand Sanitiser and Face Coverings

Almost all shops provide hand sanitiser at the entrance. Most staff and customers in shops continue to comply with wearing face coverings. We asked an additional question in Spring 2021 about social distancing between customers. There was a mixture of experience, with no social distancing in one in six shops.

|		Autumn 2020		Spring 2021	
		Responses	%	Responses	%
Was hand sanitiser available at the entrance?	No	0	0	2	3.6
	Yes	52	100	52	92.9
	I cannot remember	0	0	2	3.6
Were staff wearing face coverings?	No	3	5.9	3	5.4
	Yes	48	94.1	51	91.1
	I cannot remember	0	0	2	3.6
Were other customers wearing face coverings?	None	0	0	0	0
	Some	16	31.4	20	35.7
	All	35	68.6	36	64.3
Were other customers social distancing from each other in the shop?	None	-	-	9	16.1
	Some	-	-	34	60.7
	All	-	-	13	23.2

Additional Comments

We also asked respondents to note any other protective measures that were observed. Three respondents noted that floor markings to promote social distancing were only at the tills where shoppers queue, and not across the rest of the shop. In two shops, there were no restrictions on handling clothes/stock. In light of this, four comments were made highlighting that hand sanitisation stations throughout the store would be desirable. It was also noted that staff are no longer encouraging people to use hand sanitisers at the store entrance. A number of comments were received noting some staff and customers are still not wearing face coverings correctly.

By contrast, we also received very complementary comments shops who made announcements reminding customers to wear face coverings, providing organising queuing systems and hand sanitiser at the end of each aisle in the store, and limiting the number of customers in very small stores.

Conclusion

Compliance with the wearing face coverings by staff and customers has largely been maintained. We have seen a gradual relaxation in other measures and continue to receive comments that indicate respondents are uncomfortable with the lack of social distancing in some shops.

This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:
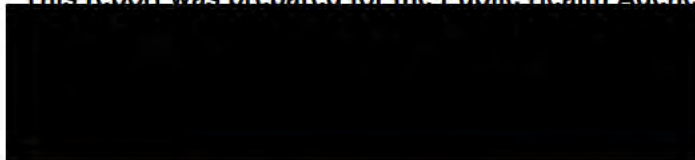
Members of the HSC Research and Development Division Behaviour Change Group

Name	Position	Organisation

HSC R&D Behaviour Change Group
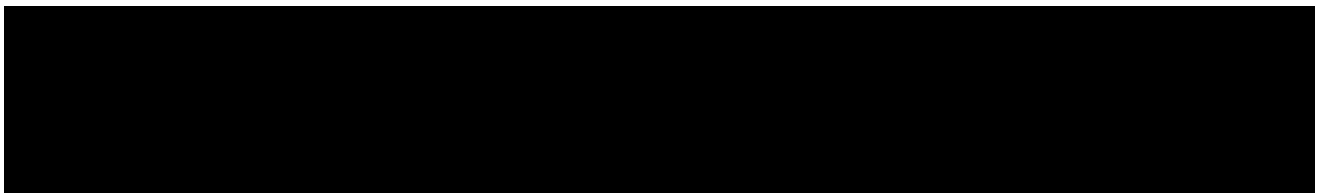
Transmission Prevention Behaviours in Young People from NI/RoI

Report No: 7, COVID-19 Behaviour Change Cell
Date: 24 June 2021

Key findings

- Many young people practise social distancing regularly, however females social distance slightly less often than males
- Young females tend to have occasional to frequent contact with a smaller number of relatives/friends outside their household/support bubble
- Young females tend to meet relatives/friends outside their household/support bubble in an indoor setting such as a house
- Young males appear to have more frequent contact with a greater number of friends outside their household/support bubble
- Young males tend to meet relatives/friends outside their household/support bubble in public places/parks
- Young people generally find it hardest to social distance when the in-person contact is with close family or friends

- Key challenges voiced by young people related to transmission-preventative behaviour include:
  - The unhelpful impact of others not following the guidelines on social distancing/mask-wearing
  - Certain situations where it is difficult to social distance (environments not supportive of social distancing/mask-wearing and when meeting close persons)
  - The physical and psychological impact of long-term social distancing and mask-wearing

Background

The rationale for this research arises from the need to examine current transmission-preventative behaviour (namely social contact) in the context of the vaccine rollout and since the increasing spread of the COVID-19 variants. Moreover, this research explores perceived challenges of maintaining transmission-preventative behaviours in the future, which is important to consider given the predictions of seasonal surges in cases (Baker et al., 2020).

Aim and Methods

This report presents key insights on social contact behaviour and perceived behavioural challenges vocalised by young people/adults from Northern Ireland and Republic of Ireland. Data was collected between 14th April 2021 – 24th May 2021 via a Qualtrics survey disseminated via social media and email. Participants were eligible to take part if they were aged 16-45 years and living in NI or RoI.

Results

A total of 215 people responded to the survey; after data cleaning N=150 were deemed suitable for quantitative analysis, of which N=128/150 provided text responses to the open-ended questions for qualitative analysis. The majority of respondents were female (73%), aged between 21 and 34 years (59%), most were living in Northern Ireland (90%), and most were in employment (non-students) (57.2%) or studying (36.9%). Less than ¼ of respondents (20.7%) lived with a chronic health condition, a small number were shielding themselves (5.1%) or someone else (7.2%), 16.7% reported that they had experienced symptoms of COVID-19, while 9.5% had been diagnosed with COVID-19.

Of the total 150 survey completers, N=105 were aged 18 to 40 years (72% were female). For the purposes of this report, responses within this subsample are presented as the percentage of replies received and broken down by gender.

Social distancing behaviour in young people from NI/RoI

As shown in Table 1, males and females were similar in their social distancing behaviour when meeting up with friends/family members outside their household/support bubble, although female respondents engaged in social distancing slightly less often (21.2% vs. 24%).

Similarly, as demonstrated in Table 2, slightly less females reported that they had been trying to maintain a distance during in-person with people outside their household/support bubble (11.8% vs. 4%). However, males tended to report stronger responses in both directions i.e. *strongly* agree or *strongly* disagree that they have been maintaining a distance during in-person contact with people outside their household/support bubble.

Table 1. Responses to the question "when you meet up with friends or family outside your household/ support bubble, how often do you keep your distance from them?"

	Overall (%)	Male (%)	Female (%)
Always	22.9	24.0	21.1*
Most of the time	36.2	36.0	36.8
About half the time	13.3	12.0	14.5
Sometimes	23.8	24.0	23.7
Never	3.8	4.0	3.9

Note. Asterisk denotes % of interest

Table 2. Responses to the statement "In the last month, I have been keeping my distance from others outside my household/support bubble as much as possible"

	Overall (%)	Male (%)	Female (%)
Strongly agree	38.1	44*	35.5
Agree	39.0	28	43.4
Neither agree nor disagree	9.5	16	7.9
Disagree	9.5	4	11.8*
Strongly disagree	3.8	8*	1.3

Note. Asterisk denotes % of interest

Social contact with relatives outside household/support bubble

The data in Table 3 suggests that a greater number of females met up with at least 2 relatives from outside their household/support bubble on a weekly basis, however these contacts generally do not surpass four unique contacts per week (38.2% vs. 12%). On the other hand, a greater number of males reported one of two extremes i.e. they did not meet up with *any* relatives from outside their household/support bubble on a weekly basis (56% vs 40.8%) or that they met up with *more than five* relatives each week (8% vs 1.3%).

Furthermore, a greater percentage of females than males reported that this contact with relatives outside their household/support bubble changed 'occasionally' and *to a lesser extent* 'frequently' each week (38.1% vs. 25%) (Table 4). As suggested in Table 5, females reported that they most frequently met up with these relatives inside a house (47.9% vs. 29.2%), while a greater number of males more frequently met up with these relatives in a park/public place (29.2% vs. 13.7%).

Table 3. Responses to the statement "How many relatives from outside your household/support bubble do you see "in person" at least once a week?"

	Overall (%)	Male (%)	Female (%)
0	44.8	56*	40.8
1	21.0	24	19.7
2	19.0	4	23.7*
3-4	12.4	8	14.5*
5-8	1.9	4*	1.3
9+	1.0	4*	0

Note. Asterisk denotes % of interest

Table 4. Responses to the statement "Do these in person contacts with relatives typically change from week to week?"

	Overall (%)	Male (%)	Female (%)
Frequently (I see different relative(s) each week)	1.9	0	2.6*
Occasionally (I mostly see the same relative(s) but it sometimes changes)	31.7	25	35.5*

Never (always see the same relative(s))	66.3	75	61.8

Note. Asterisk denotes % of interest

Table 5. Responses to the statement "Where do these "in person" contacts with relatives mostly take place?"

	Overall (%)	Male (%)	Female (%)
Inside a house	17.7	29.2	47.9*
Other indoor locations	2.1	4.2	1.4
In a garden	6.3	12.5	20.5
In a park or other public place	57.3	29.2*	13.7
Other	16.7	25	16.4

Note. Asterisk denotes % of interest

Social contact with friends outside household/support bubble
Similar to the pattern observed with relatives, Table 6 shows that a greater number of females met up with at least 2 friends from outside their household/support bubble on a weekly basis, however these contacts generally do not surpass 4 unique contacts per week (38.1% vs. 20%). Whereas, a greater number of males reported one of two extremes i.e. they did not meet up with *any* friends from outside their household/support bubble on a weekly basis (40% vs 32.9%) or that they met up with *more than five* friends each week (12% vs 3.9%) (Table 6).

Furthermore, a greater percentage of males than females reported that this contact with friends outside their household/support bubble changed 'frequently' (12% vs 8.2%). Whereas more females reported that contact with friends changed occasionally (42.5% vs 36%) (Table 7). Comparable to the pattern seen with relatives, females reported that they most frequently met up with these friends inside a house (20.6% vs 12.5%), while a greater number of males more frequently met up with these friends in a park/public place (52.9% vs 70.8%) (Table 8). In fact, males reported that they seldom met with friends indoors (house or other venue) or private gardens (12.5% vs 32.3%).

Table 6. Responses to the statement "Considering your friends (including those in your neighbourhood), How many of your friends from outside your household/support bubble do you see "in person" at least once a week?"

	Overall (%)	Male (%)	Female (%)
0	35.2	40*	32.9
1	25.7	28	25
2	18.1	16	19.7*
3-4	15.2	4	18.4*
5-8	4.8	8*	3.9
9+	1	4*	0

Note. Asterisk denotes % of interest

Table 7. Responses to the statement "Do these "in person" contacts with friends typically change from week to week?"

	Overall (%)	Male (%)	Female (%)
Frequently (I see different friends each week)	8.8	12*	8.2
Occasionally (mostly I see the same friend(s) but sometimes it changes)	40.2	36	42.5*
Never (always see the same friends)	51	52	49.3

Note. Asterisk denotes % of interest

Table 8. Responses to the statement "Where do these "in person" contacts with friends mostly take place?"

	Overall (%)	Male (%)	Female (%)
Inside a house	17.7	12.5	20.6*
Other indoor locations	2.1	0	2.9
In a garden	6.3	0	8.8
In a park or other public place	57.3	70.8*	52.9
Other	16.7	16.7	14.7

Note. Asterisk denotes % of interest

Perceived challenges of maintaining transmission-preventative behaviour for young people/adults
Table 9 captures circumstances when it is most challenging to maintain a physical distance relatives/friends outside household/support bubble in order of most to least commonly reported. The top two most challenging situations reported were when in person contact is with close family members (22.9%) or close friends (18.4%). Although times when individuals are feeling sad (11.7%) or at the point of leaving (11.7%) were identified as most challenging, however to a lesser extent.

Table 9. Responses to the statement "When do you find it most challenging to keep a distance when meeting family and friends outside your household/support bubble?"

	Overall (%)
when these "in person" contacts are with close family members e.g parents, siblings, kids	22.9
when these "in person" contacts are with close friends	18.4
when I am feeling sad	11.7
when these "in person" contacts are with my partner (girlfriend/boyfriend)	11.7
when I am saying goodbye to these individuals (the point before leaving)	11.7
when I am meeting up with these individual (initial greetings)	9.9
other scenario	8.5
when I am feeling happy	4.0
when those in my company are not keeping a distance from me/others	1.3

Note. Asterisk denotes % of interest

In response to the open-ended question *"From your perspective what are the main challenges of sticking to the guidelines regarding wearing a face covering and physical distancing?"* three themes extracted provide useful insights into perceived behavioural barriers for young people/adults. As captured in Table 10, the most commonly reported concern centred on the challenge of other people not social distancing and/or not wearing a mask or when others lacked acceptance/understanding of the need to maintain such behaviour when appropriate.

Another commonly reported concern was the challenge of maintaining a distance and/or wearing a mask in certain situations. Examples of this include circumstances when there is insufficient space to maintain an appropriate distance, contexts where social norms do not favour these behaviours, and when contact is with close persons e.g. family/friends.

The third most commonly reported concern was the perceived physical and psychological challenge of long-term social distancing and mask-wearing. In particular, respondents discussed the physical impact of long-term mask wearing on skin health and the psychological impact of long-term social distancing on relationships and communication (which masks also further strained).

Table 10. Themes capturing perceived barriers to maintaining transmission-preventative behaviour for young people/adults from NI/RoI

Themes	Subthemes	Sample comments
'Divergent actions/perceptions of others' (52 comments)	Others not following guidelines	*"when other people wear masks or come too close in shops/ work" (P.2)*
	Others not believing in the need to maintain behaviours	*"Turning down hugs/visits from friends and relatives who do not want to respect the guidelines. Making them understand it is because I want to protect my loved ones." (P.7)*
'Maintaining behaviour depends on the context' (49 comments)	Difficult to wear a mask/distance in certain places/situations	*"I currently work in a small area and it's hard to keep my distance from my coworkers. They also don't tend to wear face coverings and will only put it on if I ask them to as I will wear one." (P.66)*
	Keeping a distance can be challenging depending on the company	*"Distancing yourself from those you care most about. Close friends and family is the most difficult to distance from and wear a mask too." (P.53)*
'Physical and psychosocial challenges of maintaining behaviour' (45 comments)	Physical discomfort of masks	*"I do stick to the guidelines but wearing the facemasks for long periods in work has caused a significant amount of acne and scaring, I therefore wear them for as short a period as I can. Also communication issues when wearing masks." (P.61)*
	Social and emotional impact of maintaining behaviour	*"With physical distancing, the challenges mainly come with activities with friends, (eg sport, bowling, swimming, even getting coffee), with empathy, with kids and youth work, with making friends at uni etc. It is difficult to get to know people from a distance." (P.51)*

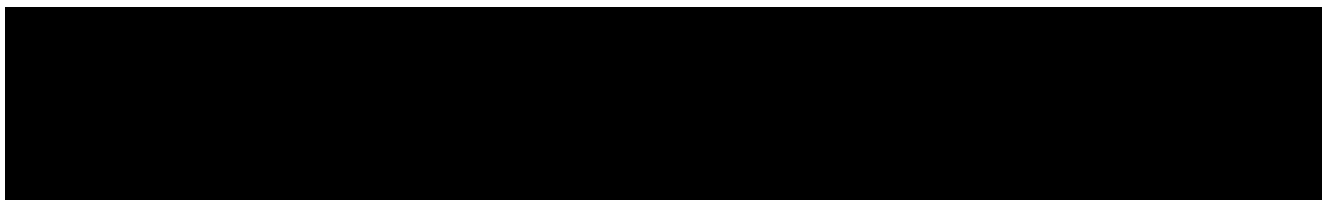**This report was prepared for the Public Health Agency Behaviour Change COVID-19 cell by:**
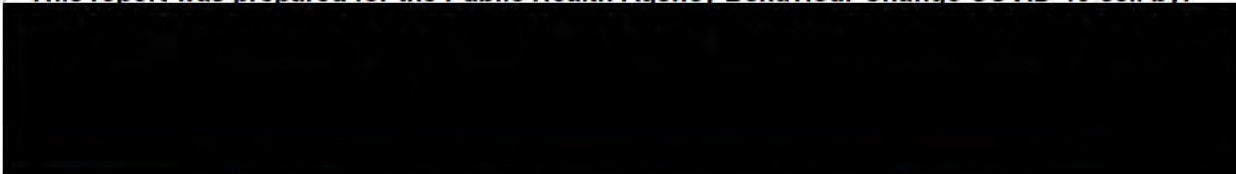
Members of the HSC Research and Development Division Behaviour Change Group

Name	Position	Organisation

HSC R&D Behaviour Change Group

Transmission prevention behaviour (TPB) adherence at business venues

Report No: 8
COVID-19 Behaviour Change Cell
Date: 20/10/2021

Background

There is still some reported concern from some quarters about businesses having variable practice in enforcing transmission prevention behaviours (TPBs). It has been recognised that the events sector has responded very positively in innovative ways in the application of Non-Pharmaceutical interventions (NPIs) and the promotion of such activity in all sectors is welcomed. Behaviours are as important as ever in this period of uncertainty and sustained high circulation rates of the virus. Strategies to encourage and support local businesses that have been supporting the use of TPBs during this phase of COVID were invited from the BCG group members.

Discussion on how to communicate information about transmission prevention behaviour (TPB) adherence at business venues

The group acknowledged that there is likely to be variable practice across the different sectors as we move from legislation to guidance in a range of the transmission prevention behaviours. It was felt that this was what public health would label as a 'wicked' problem – a term used to describe some of the most challenging and complex issues of our time, many of which threaten human health and as such will not present with easy definitive answers due to the complex and interconnected nature of the causes.

Members noted that there is much instability in the system and with the necessary focus for communication teams on vaccination, there has perhaps been some ground lost on the original TPB messages. It was suggested that perhaps it is time to revisit some of those strong messages on the importance and effectiveness of the TPB which were helpful in the earlier phases of the pandemic. Indeed, there has been more scientific evidence recently around the benefits of the use of face coverings for example which has been shared with the TEO Adherence Group which could be exploited in new messaging to support this phase of the pandemic.

It was noted that the guidance around the consumption of food and wearing face coverings does indeed present some challenges at certain venues, such as the cinema, which will not be realistically possible to address.

The BCG members were very supportive of the reported practices of the Environmental Health Officers and PSNI regarding the close relationships that they have built up with businesses over the pandemic and the methods for monitoring and evaluating

adherence to guidance. Members reported the need for more data from the routine processes in order to clearly define what the exact nature of problem with perceived non-compliance is, and specific locations it is seen to be most challenging and causing the highest threat but did acknowledge that it is fraught with issues.
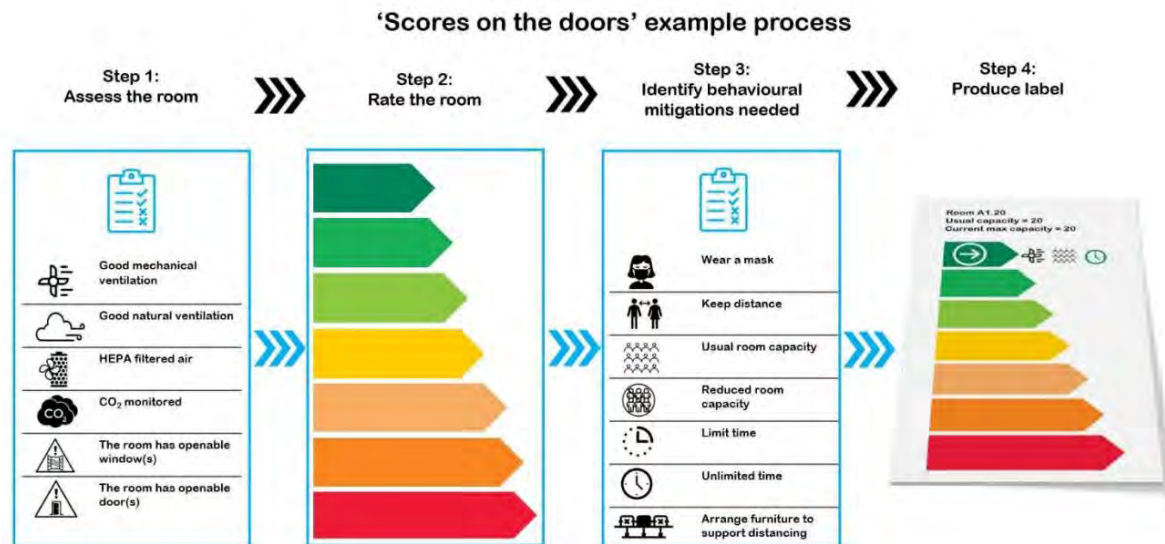
Rating tool

The suggestion of a rating tool was discussed at some length, but there was no obvious solution resulting. The benefits of crowdsourcing information on compliance by having members of the public rate compliance in premises was noted, including ease and engagement of the public in ongoing promotion of TPBs. However, a number of potential unintended consequences of any such rating systems were noted. Ratings could be easily skewed by one or two individuals, where there were small amounts of data, or 'gamed' by the proprietors by having friends/employees etc completing the rating. Also, individuals may positively select to visit locations with noted low adherence of TPBs so that they could avoid having to feel peer pressure to comply with any such requirements or feel that such business owners share their values.

There was a suggestion that the gathering of some end user views may be a useful exercise to ascertain the public's opinions and wishes on the subject.

The BCG did flag that a GP in Wales behind the fresh air initiative (http://www.freshair.wales/) has proposed a system to rate businesses on their compliance with the "mask, ventilate, vaccinate" message. This was further developed by Independent Sage into a traffic light system, similar to that used in energy ratings or food hygiene certificates, displays a summary of the steps a business has taken to support ventilation, face coverings, social distancing etc. Their 'Scores on the Doors' system could be a similar to the food hygiene signage used in Northern Ireland (https://www.independentsage.org/covid-scores-on-the-doors-an-approach-to-ventilation-fresh-air-information-communication-and-certification).

Figure from Independent SAGE Report 51

'Scores on the doors' example process

Ventilation was thought to potentially be an easier part of the equation to give indications for in terms of a rating system option but even this has its complexity as even if CO2 levels were monitored, it is not certain what would indicate a good or optimum value. There would also be significant costs to the introduction of any such measure.

Executive Summary

The hospitality sector was thought to be a more diverse sector to the events sector and the scale of the venues was thought to be an important factor potentially influencing outcome. The profit margins of many small venues were felt to be directly related to the number and throughput of customers and the pandemic has hit them particularly hard for a protracted period of time. In addition, the customer base is probably different, the role of alcohol sales is also different and variable across the sector.

There was also a question of how risk awareness works in this situation and indeed if it works at all for these sectors at this point in the pandemic with the immediacy of reward perhaps overruling any consideration of subtle variations in risk.

In conclusion, a rating system would be costly to implement, if it is to be implemented rigorously; it is likely to cause problems with retailers who are being rated on something that they are not obliged to operate; there is no clear evidence that such a rating system would be beneficial in changing behaviour; and it is not clear what would be rated, given the changing guidance – even if it was clear, the basis for the ratings could change

during the time that the system is in place. Therefore there was no great appetite within the membership to advise that a risk rating approach be pursued at this point in time and that a preference for the reinforcement of the TPBs was the overwhelming view.

Members of the HSC Research and Development Division Behaviour Change Group

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