



The Wellbeing of Older People during the Covid Pandemic in Aotearoa

Findings from the HWR National
Surveys 2020 and 2021

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1 EXECUTIVE SUMMARY



WORK STATUS

There was a 3.2% **decrease** in those working.

Workers were **more likely to report reduction in life satisfaction** than non-workers.



VACCINATION UPTAKE

Just **over three quarters**¹ (of the sample aged **56-93**) have been vaccinated against COVID.

19.2% of respondents have **never had the seasonal flu vaccine**, but **most**² get it every year.



WELLBEING

Changes in all indicators of wellbeing were **small**.

Those with **chronic conditions** and **lower social support** were more likely to report reductions in indicators of wellbeing.



IMPACT OF COVID-19 PANDEMIC

Most people reported that the pandemic had no negative impact on their **physical health** (70.6%) or **economic wellbeing** (61.8%).

Half reported no impact on **mental health** (50.4%).

Only **0.3%** of the sample have had COVID-19.



WELLBEING & LIVING ALONE

Surprisingly, those who **live with others** were more likely to report changes in indicators of **wellbeing**³ than those **who live alone**.

The only significant change for those **living alone** was an **increase in loneliness**, slightly higher than for those living with others⁴.



HEALTH RELATED BEHAVIORS

The percentage of people who were **moderately physically active decreased** by just under 2%

The proportion of **regular smokers decreased** from 7.7% in 2020 to 5.17%

There was a **very small decrease in risky alcohol use**.

¹ 75.7% of the sample have been vaccinated against COVID-19.

² 64.7% of the sample receive the seasonal flu vaccine every year.

³ Physical health (↓0.7), mental health (↓0.8), life satisfaction (↓0.05), and depression (↑0.5).

⁴ ↑ 0.31 for those living alone, ↑ 0.17 for those living with others.

1.1 KEY FINDINGS



SELF REPORTED IMPACTS

Physical health and economic wellbeing: A majority of respondents (aged 56-93) reported that the COVID-19 pandemic had no negative impact on their physical health (70.6%) or economic wellbeing (61.8%). At the time of the survey in 2021, less than 1% of respondents had been told that they have COVID-19 by a health professional or government health agency.

Mental health: 14.4% of respondents reported that the pandemic had a moderate to extreme negative impact on their mental health.

Volunteering activities and ability to provide care: The majority of respondents indicated that the pandemic had no negative impact on their volunteering activities (66.1%) or ability to provide care for health reasons to friends, family or whānau (59.5%).

Wellbeing of whānau: Participants generally reported that the COVID-19 pandemic had a greater impact on the wellbeing of overseas whānau than on NZ-based whānau.



EFFECTS OF THE PANDEMIC ON WELLBEING INDICATORS

On average, changes in all indicators of wellbeing were minimal. There was no significant difference in anxiety and quality of life for these older people between 2020 and 2021. There were very small average decreases in physical health (which are expected as people age), and also very small decreases in mental health and life satisfaction, and similarly small increases in depression and loneliness.

Which groups were affected? There were very few differences in the means across demographic groups. However, there were consistent changes for people with low social support and those reporting chronic health conditions.

Social Support: Those with low social support showed consistently significant reductions in physical health, mental health and life satisfaction between 2020 and 2021, with a corresponding increase in depression and loneliness. There were no significant differences across waves in wellbeing indicators for those with high social support.

Chronic Conditions: Individuals reporting three or more diagnosed chronic health conditions also showed consistent reductions in physical health, mental health and life satisfaction across 2020 and 2021, with increases in depression and loneliness. There were no significant changes in indicators of wellbeing for those with no chronic conditions.



ISOLATION AND LONELINESS

An unexpected finding, because it is contrary to common expectations about the effects of the pandemic on older people, was that those living alone were consistently less likely to report significant changes in most indicators of wellbeing. It was those who lived with others who were more likely to report reductions in physical health, mental health and life satisfaction, and increases in depression, rather than those living alone. The only significant relationship with indicators of wellbeing for those living alone was an increase in loneliness, which was slightly greater than the increase in loneliness for those who live with others.



HEALTH RELATED BEHAVIOURS

There was also very little change in health-related behaviours in expected directions.

Smoking: The proportion of the sample who are regular smokers decreased from 7.7% in 2020 to 5.17% in 2021. For Māori, the proportion of regular smokers decreased by 5.1%.

Alcohol use: There was a very small decrease in risky alcohol use (-0.12).



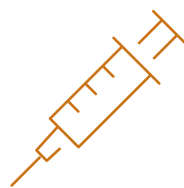
WORK FORCE ENGAGEMENT

Changes in employment rates were the greatest apparent effect of the pandemic on older people in Aotearoa. The proportion of unemployed respondents increased from 52.8% in 2020 to 56% in 2021.

Just over half of respondents were engaged in paid employment since the declaration of the pandemic (53%). Some had a reduction in their hourly wage or salary (9.4%), reduction in their hours (12.3%), or lost or left their job over this period (9.9%).

Most respondents reported that COVID-19 played no factor in their retirement or decision to retire (88.3%).

COVID-19 hardship assistance: Some type of hardship assistance because of COVID-19 (including government assistance to support their business or welfare benefits, material assistance from non-government organisations, assistance from lenders and Kiwisaver hardship withdrawal) was received by 27% of respondents.



VACCINATION UPTAKE

Reasons for not getting vaccinated included but were not limited to: belief that it is too soon to see whether the vaccine will provide long term protection; concern about vaccine implications for health; concern about known and unknown side effects; and insufficient information regarding safety, side effects and efficacy.

Seasonal flu vaccine: The majority of respondents get their seasonal flu vaccine every year (64.7%), but just under one in five respondents have never had a seasonal flu vaccine (19.2%).

COVID-19 vaccination uptake: Just over three quarters of respondents had been vaccinated against COVID-19 (75.7%). The majority of unvaccinated intended to either probably (11.3%) or definitely (63.5%) get vaccinated.

2 METHOD

The New Zealand Health, Work & Retirement (HWR) longitudinal biennial survey aims to track and describe factors associated with health and wellbeing in the older New Zealand population. HWR participant cohorts have been drawn from random samples of those aged over 55 years listed on the New Zealand electoral roll. In 2006 (and in additional refresh samples in 2018, and 2020) the population sample included an over-sampling of people of Māori descent, to adequately represent the indigenous people of Aotearoa.

In July/August 2021, HWR participants (those who had participated previously in the survey between 2006-2020) received an additional 16-page postal survey to assess their experiences and responses to the COVID pandemic at that time. A total of 4075 (77.2%) survey responses to the 2021 survey were received. Ages ranged from 56 to 93. There was little difference in the response rate for men (n = 1757, 76.1%) and women (n = 2317, 78.1%).

The questionnaires included standardised measures of general physical health, general mental health, depression, anxiety, life satisfaction, quality of life, loneliness, social support, physical activity, smoking, alcohol use, caregiving commitments, volunteering, housing situation, household composition, work situation, and financial wellbeing.

In 2021, additional items asked about chronic diagnosed health conditions, COVID diagnosis, COVID and flu vaccine uptake and any reasons for vaccination resistance.

Participants were also asked about their perceptions of the impact of COVID-19 on their health, their whanau/family's health, their volunteering activities, or their caring obligations. They were also asked about their perceptions of information received from official sources and their receipt of government support.

Details of standardised measures and their sources are described in Appendix 2. A copy of the items in the 2021 questionnaire is provided in Appendix 3.

For analysis, physical health, mental health, depression, anxiety, life satisfaction, quality of life, loneliness, and health related behaviours (physical activity, smoking, and alcohol use) were

considered as outcome variables. Changes in these variables, i.e., the possible effects of the first year of the pandemic, were examined across the two years (2020 – 2021). Pearson's chi-squared test (for categorical variables) and t-tests (for continuous variables) were used to test the significance of any differences between the scores in 2020 and 2021.

Several variables were considered as potential moderators of these differences, i.e., the outcomes would vary depending on levels of potential vulnerability.

Those measured in 2020 were, levels of gender, ethnicity (Māori or non-Māori), economic living standards, number of chronic conditions, current work status, housing tenure, housing satisfaction, neighbourhood social cohesion, and neighbourhood satisfaction.

In 2021, the possible effects of different levels of caregiving commitments, social support, household composition and current work status were considered.

Survey weights, accounting for sample design (i.e., over-sampling of persons of Māori descent and cohort size) and response characteristics associated with age, gender, area-level deprivation, and ethnicity relative to the original random samples, were applied to all analyses.

In this report we include a description of key findings and results that showed consistent patterns of change or moderation. Results of the analyses of all data used for this report are provided in Appendix 1.

3 DESCRIPTIVE FINDINGS

3.1 COVID-19 DIAGNOSIS

At the time of survey, almost all of the sample had never received a diagnosis of COVID-19 (99.7%).

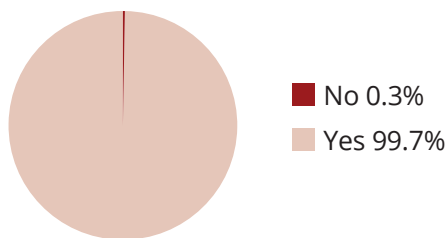


Figure 1: Proportion of respondents diagnosed with COVID-19.

3.2 SELF-REPORTED NEGATIVE IMPACTS AND EFFECTS OF THE COVID-19 PANDEMIC

Physical Health: The majority of the sample felt that COVID-19 had no negative impact on their physical health (70.6%); while 10.2% reported that the COVID-19 pandemic had a moderate to extreme negative impact on their physical health.

Mental Health: Just over half the sample reported that the COVID-19 pandemic had no negative impact on their mental health (50.4%), with just over a third reporting some negative impact on mental health (35.2%). Another 14.4% of respondents reported that the pandemic had a moderate to extreme negative impact on their mental health.

Economic Wellbeing: A majority of respondents reported that the COVID-19 pandemic had no negative impact on their economic wellbeing (61.8%), with 23.4% reporting some negative impact. A further 15% reported that the negative impact of the pandemic on their economic wellbeing was moderate to great.

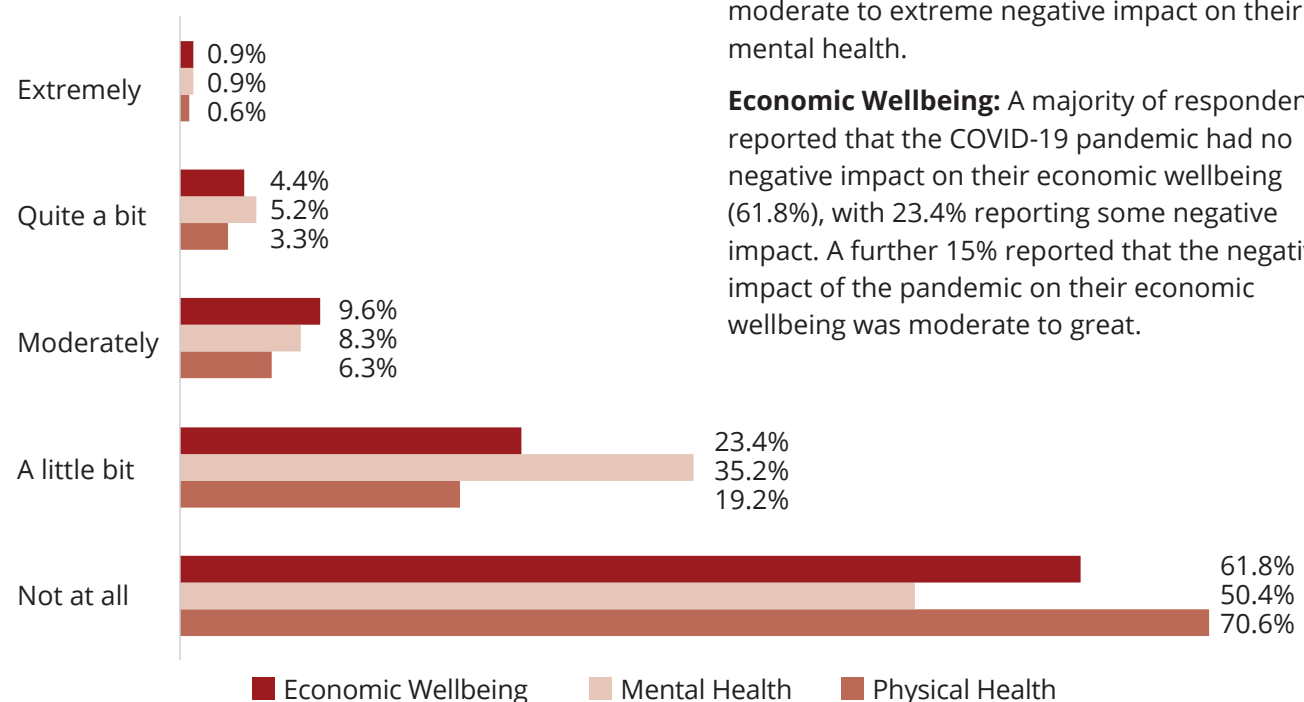


Figure 2: Self-reported negative impacts of the pandemic on economic wellbeing, mental health and physical health.

Ability to Provide Care: The majority of respondents who provided informal care for friends, family or whānau due to health reasons reported that the COVID-19 pandemic had no negative effect on these activities (59.5%). However, over 10% reported moderate negative effects and almost 11% said that COVID-19 had affected their ability to care a great deal.

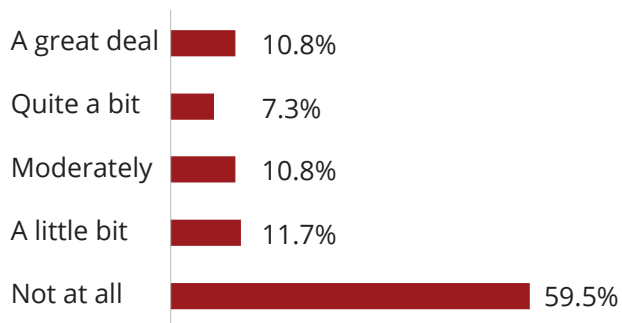


Figure 3: Self-reported negative effect of pandemic on ability to provide care.

Volunteering Activities: A majority of respondents reported that the COVID_19 pandemic had no negative effect on their volunteering activities (66%). Nearly one quarter (24%) of respondents reported that COVID-19 had a moderate to strong effect on volunteering activities.

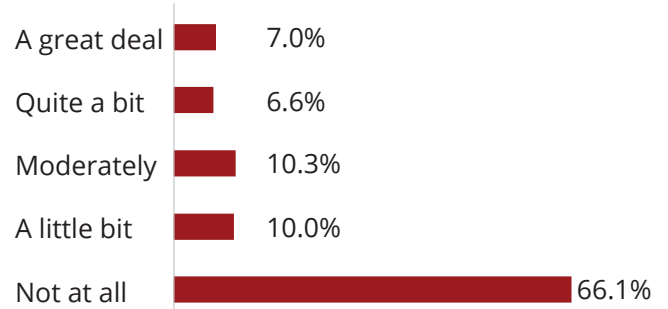


Figure 4: Self-reported negative effect of pandemic on volunteering activities.

3.3 EFFECT OF COVID-19 PANDEMIC ON WELLBEING OF NZ AND OVERSEAS WHĀNAU

Participants generally reported that the COVID-19 pandemic had a greater impact on the wellbeing of overseas whānau than NZ whānau. Only 3.3% of participants reported an extreme impact on wellbeing of NZ whānau, compared to 11.3% for

overseas whānau. Whereas, 62.6% reported that the COVID-19 pandemic had no affect on the wellbeing of their NZ whānau, compared to 50% for overseas whānau.

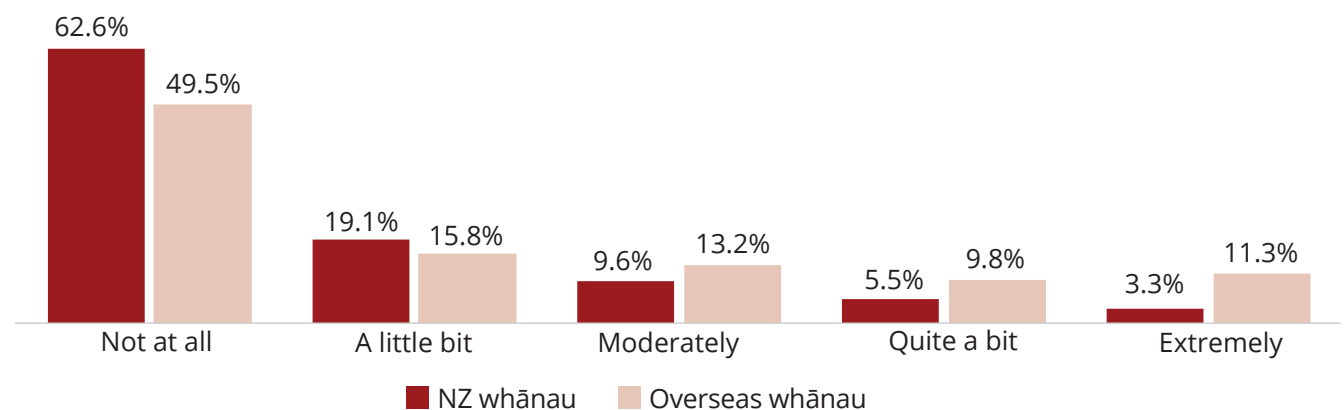


Figure 5: Self-reported impact of pandemic on wellbeing of New Zealand-based and overseas whānau.

3.4 VACCINATIONS: SEASONAL FLU AND COVID-19

Seasonal flu vaccine: A majority of respondents reported receiving their seasonal flu vaccine every year (64.7%) while altogether, 73.3% of respondents have had a flu vaccine within the past 5 years, and 5.4% have not had a flu vaccine in the past 5 years. Almost one fifth of the sample reported that they had never had the seasonal flu vaccine (19.2%).

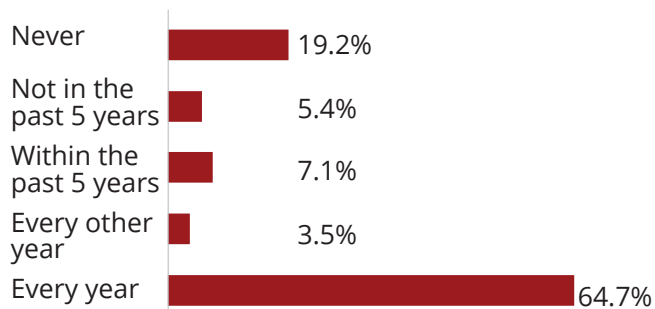


Figure 6: Self-reported frequency of seasonal flu vaccine.

COVID-19 vaccine: Just over three quarters of the sample reported that they have been vaccinated against COVID-19 (75.7%).

Of those who were currently unvaccinated against COVID-19, most reported that they definitely intended to become vaccinated (63.5%), with a further 11.3% reporting that they would probably get vaccinated. The remaining 25.2% of those

currently unvaccinated reported that they would either probably not or definitely not get vaccinated.

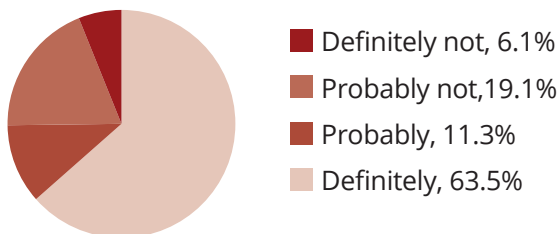


Figure 7: Intention to get COVID-19 vaccine.

The most common reasons for not having yet received the COVID-19 vaccine were:

1. Belief that it is too soon to see whether the vaccine will provide protection from COVID-19 in the long term (n=241)
2. Concern about known (n=213) and unknown (n=236) side effects of the vaccine
3. Concern about other effects on health and worsening of health from the vaccine (n=214)
4. Not having enough information on the safety, side effects and efficacy of the vaccine (n=207).

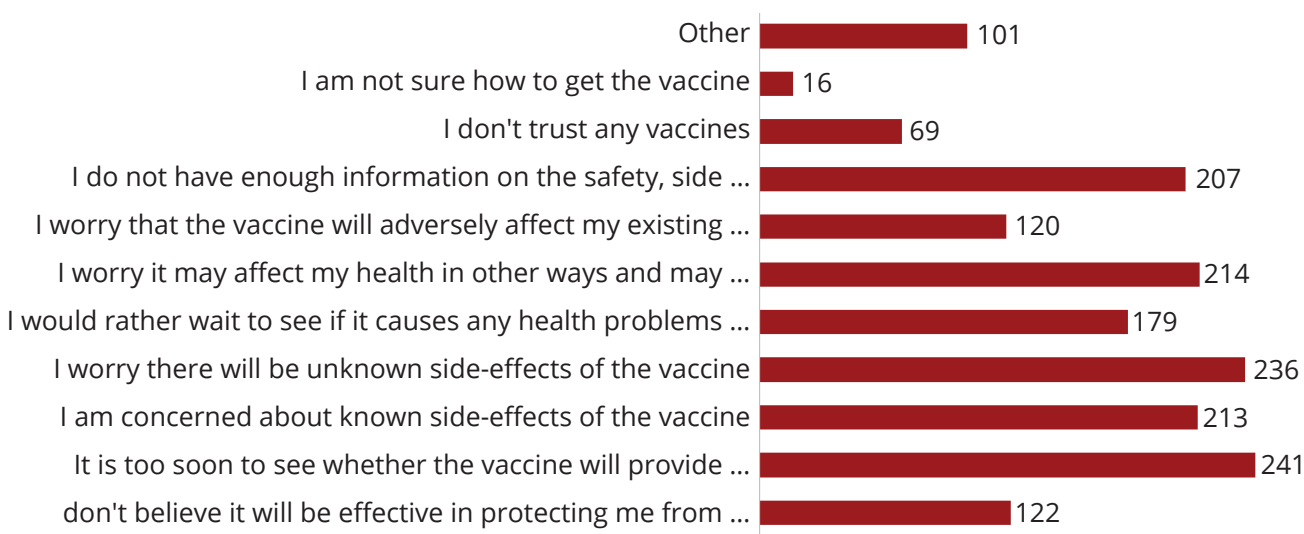


Figure 8: Reason for not receiving vaccination against COVID-19.

3.5 COVID-19: WORK, RETIREMENT, AND GOVERNMENT ASSISTANCE

Work situations since beginning of the COVID-19 pandemic

Just over half of respondents had been engaged in some paid employment since the World Health Organisation declared the COVID-19 pandemic (53%). However, 12.3% had their hours of paid employment reduced, 9.4% had their hourly wage or salary reduced, and a further 10% lost or left their jobs. One third of respondents worked from home (33.3%), and 27% had been considered essential workers. Around 13.8% of respondents had been offered skills training from their employer to support how they performed their job during the COVID-19 pandemic.

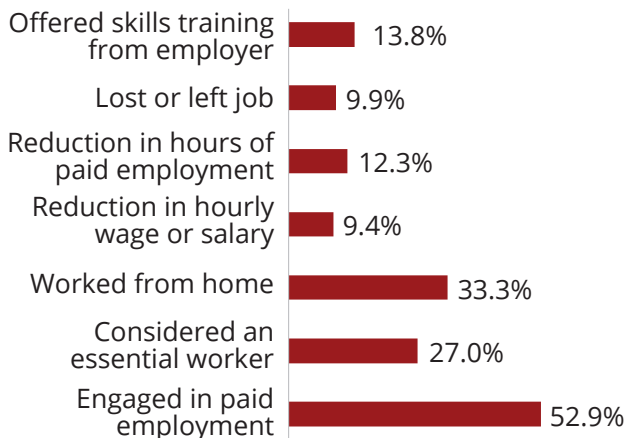


Figure 9: Work conditions following the World Health Organisation declaration of the pandemic.

Hardship assistance due to COVID-19

Eleven percent of respondents received government assistance to support their business because of COVID-19. Some received government assistance such as welfare benefits (9%) and a small number received other types of support, including material assistance from non-government organisations (4%), assistance from lenders (2%) and Kiwisaver hardship withdrawal (1%).

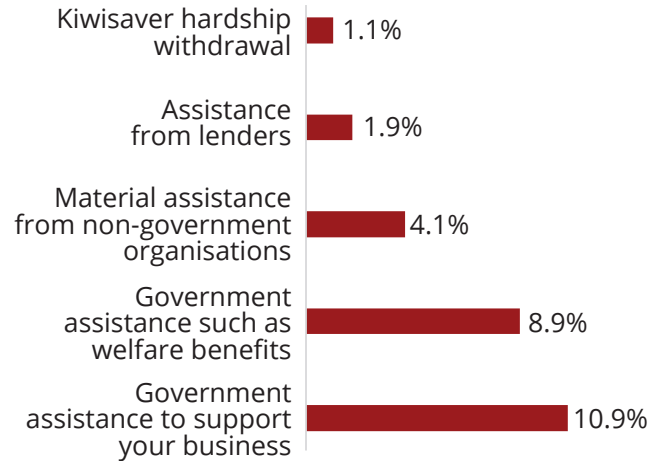


Figure 10: Hardship assistance received by respondents as a result of the pandemic.

COVID-19 and retirement

A large majority of respondents reported that the COVID-19 pandemic played no factor in their retirement or decision to retire (88.3%). However, 6.5% reported that it was a factor in their decision to retire earlier, while 5.2% reported it to be a factor in their decision to retire later.

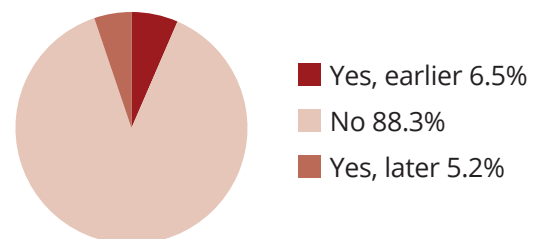


Figure 11: COVID-19 as a factor in retirement decisions.

3.6 WORK STATUS

Overall, the proportion of unemployed respondents (including retirees) increased from 52.8% in 2020 to 56.0% in 2021.

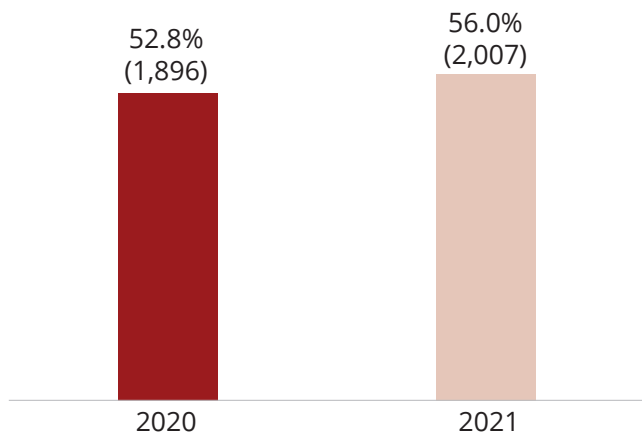


Figure 12: Difference in proportion of employed respondents between 2020 and 2021.

3.7. INDICATORS OF WELLBEING

There was no significant overall difference in anxiety and quality of life across the 2020 and 2021 survey period. There were small reductions in physical health (-0.94) and mental health (-0.85).

Life satisfaction also decreased (-0.07), and there were increases in depression (+0.52) and loneliness (+0.21). Changes in mean scores are depicted in Figure 13.

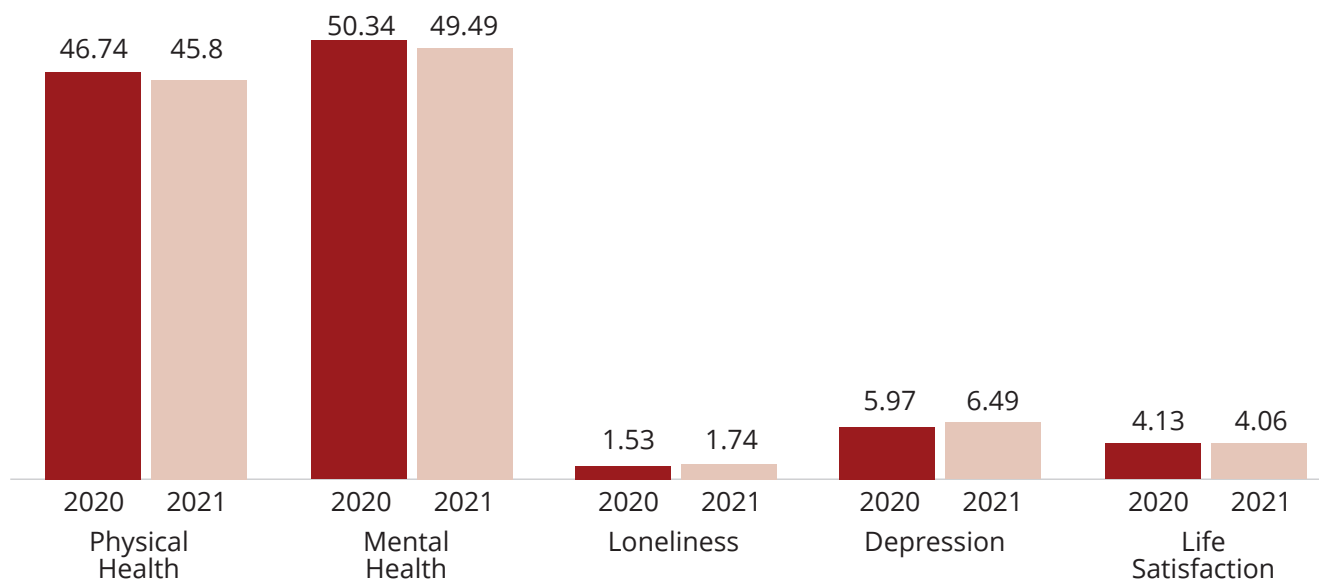


Figure 13: Significant differences in mean wellbeing scores between 2020 and 2021.

3.8. INDICATORS OF WELLBEING BY SEX AND ETHNICITY

3.8.1. Indicators of wellbeing across waves for males and females

There was a very small decrease in mean physical health and mental health scores between 2020 and 2021 for both sexes, and an increase in depression and loneliness. Increases in depression and loneliness were slightly higher for females than males. There was a very small decrease in life satisfaction and quality of life for males, but not for females. Smoking decreased for both males and females. There was no significant change in anxiety, moderate physical activity, or alcohol use between 2020 and 2021 for males or females.

| | Male | Female |
|------------------------------|--------|--------|
| Physical Health | ↓ 0.87 | ↓ 1.00 |
| Mental health | ↓ 0.84 | ↓ 0.86 |
| Depression | ↑ 0.42 | ↑ 0.60 |
| Loneliness | ↑ 0.17 | ↑ 0.24 |
| Anxiety | NS | NS |
| Life Satisfaction | ↓ 0.07 | NS |
| Quality of Life | ↓ 0.08 | NS |
| Physical Activity (moderate) | NS | NS |
| Regular Smoker | ↓ 2.83 | ↓ 2.21 |
| Alcohol use | NS | NS |

Table 1. Changes in mean wellbeing scores across waves for males and females.

3.8.2. Indicators of wellbeing across waves for Māori and non-Māori

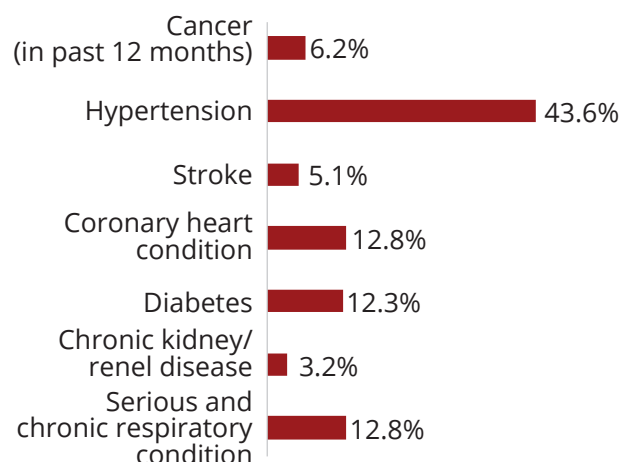
Between 2020 and 2021, there were small significant decreases in physical health, mental health and moderate physical activity for non-Māori, but no significant differences for Māori. Both populations saw an increase in depression and loneliness, with the increase being slightly greater for Māori. Smoking decreased for both populations, but the decrease was greater for Māori (-5.12%). There were no significant differences in anxiety, quality of life, or alcohol use between Māori and non-Māori.

| | Non-Māori | Māori |
|------------------------------|-----------|---------|
| Physical Health | ↓ 0.94 | NS |
| Mental health | ↓ 0.83 | NS |
| Depression | ↑ 0.5 | ↑ 0.64 |
| Loneliness | ↑ 0.21 | ↑ 0.23 |
| Anxiety | NS | NS |
| Life Satisfaction | ↓ 0.07 | ↓ 0.1 |
| Quality of Life | NS | NS |
| Physical Activity (moderate) | ↓ 2.09% | NS |
| Regular Smoker | ↓ 2.19% | ↓ 5.12% |
| Alcohol use | NS | NS |

Table 2. Changes in mean wellbeing scores across waves for Māori and non-Māori.

3.9 CHANGES IN INDICATORS OF WELLBEING FOR THOSE WITH CHRONIC HEALTH CONDITIONS

The most common diagnosed chronic health condition was hypertension (43.6%), followed by coronary heart condition, serious respiratory condition (each 12.8%), and diabetes (12.3%).



Individuals with 3 or more chronic health conditions showed reductions in physical health (-1.24), mental health (-1.25) and life satisfaction (-0.08) across wave 2020 and wave 2021, with increases in depression (+0.71) and loneliness (+0.28).

Those with 1-2 chronic conditions showed a slightly lesser decrease in physical health (-0.7) and a slightly lesser increase in depression (-0.34) and loneliness (-0.16). There were no significant changes in indicators of wellbeing for those with no chronic conditions.

Figure 14: Prevalence of chronic health conditions.

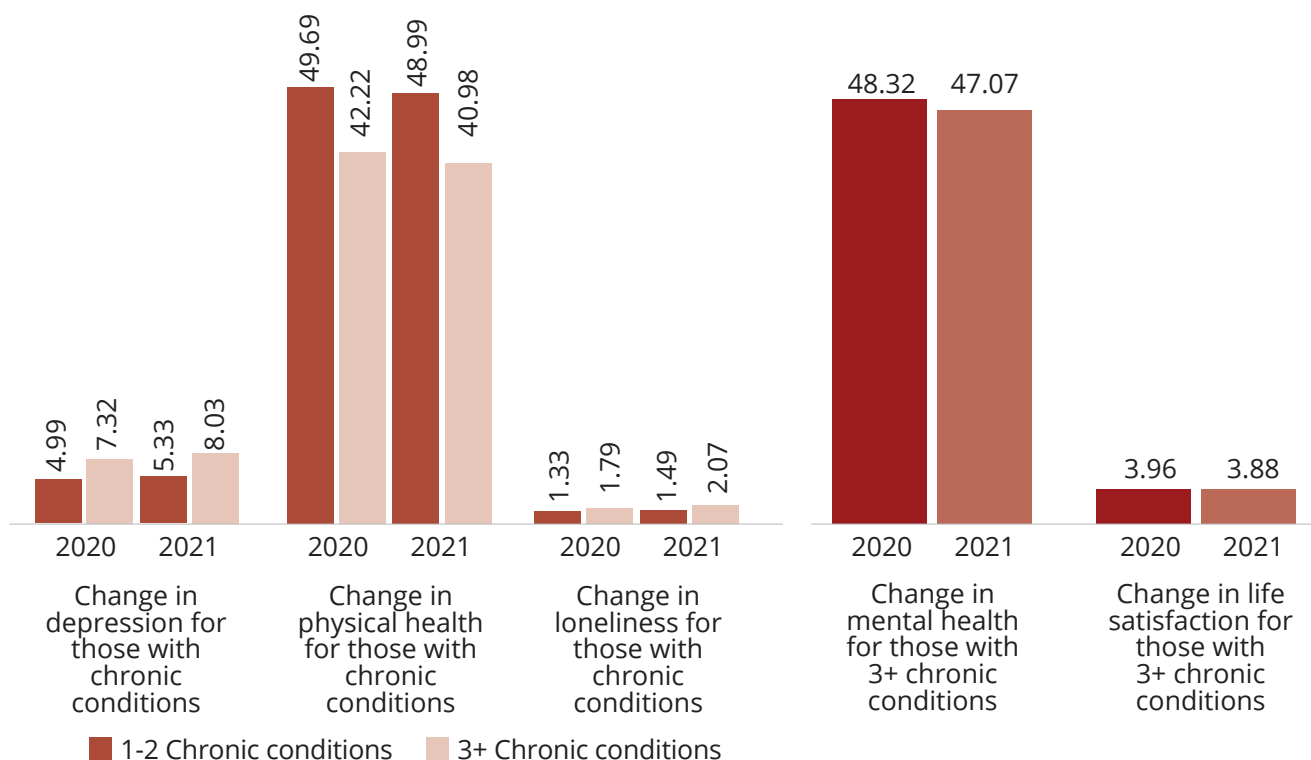


Figure 15: Significant differences in mean wellbeing scores between 2020 and 2021 for those with chronic health conditions.

3.10 CHANGES IN INDICATORS OF WELLBEING FOR VARYING LEVELS OF SOCIAL SUPPORT

Those with low social support had significant small reductions in physical health (-1.33), mental health (-1.41) and life satisfaction (-0.14) between 2020 and 2021, with a corresponding increase in depression (+0.73) and loneliness (+0.45).

Those with medium social support also demonstrated a slight lesser increase in depression (+0.53) and loneliness (+0.22) across the two waves. There were no significant differences across waves in wellbeing indicators for those with high social support.

There was no significant relationship between levels of social support and anxiety and quality of life.

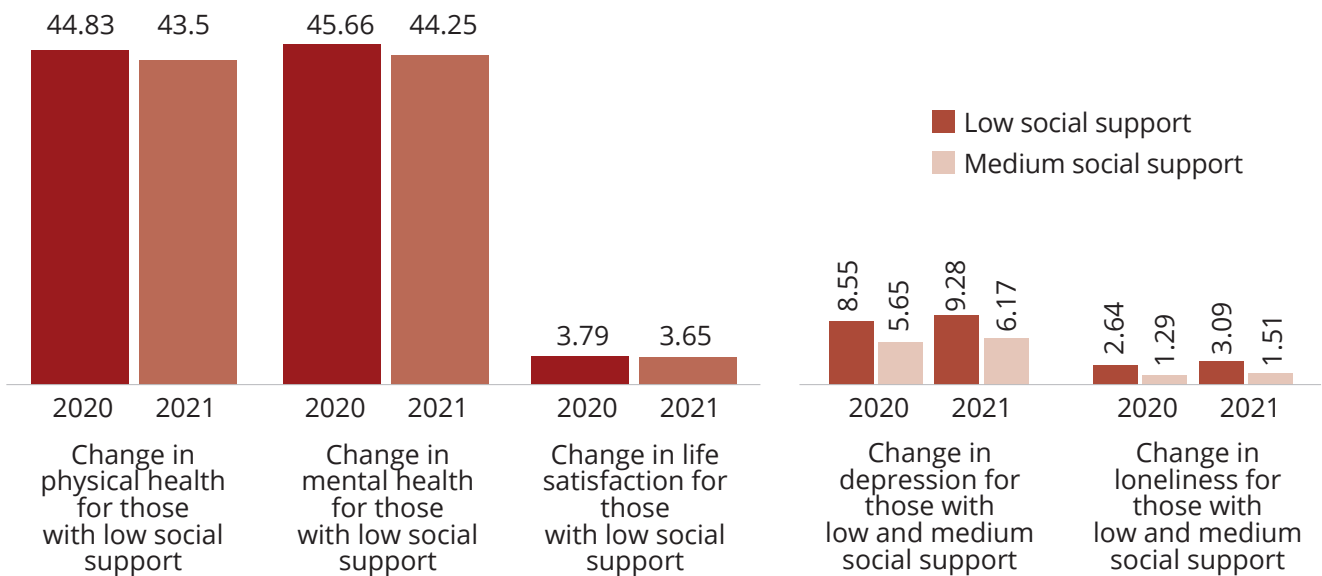


Figure 16: Significant differences in mean wellbeing scores between 2020 and 2021 for those with low and medium social support.

3.10A NO CHANGE IN INDICATORS OF WELLBEING FOR THOSE LIVING ALONE

Despite predictions to the contrary, those who lived with others were more likely to report reductions in physical health (-0.7), mental health (-0.8) and life satisfaction (-0.05) and increases in depression (+0.5). The only significant relationship with indicators of wellbeing for those living alone was a small increase in loneliness (+0.31), greater than the increase in loneliness for those who lived with others (+0.17).

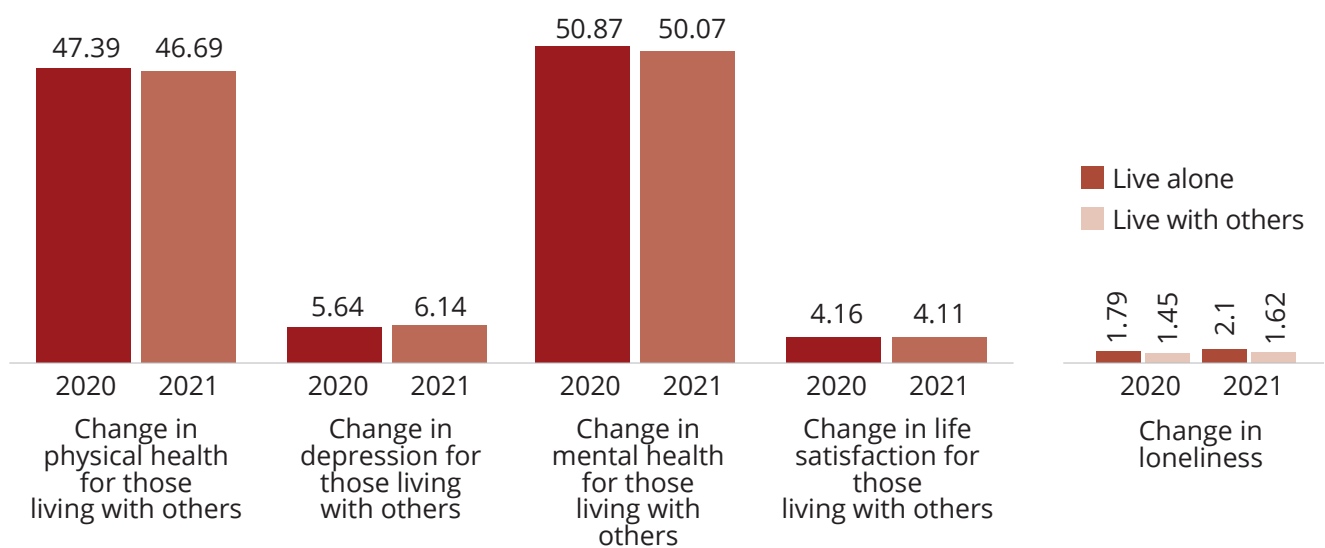


Figure 17: Significant differences in mean wellbeing scores between 2020 and 2021 for those living alone or with others.

3.11 HEALTH BEHAVIOURS

Physical activity: The percentage of people who were moderately physically active decreased by just under 2% between 2020 and 2021.

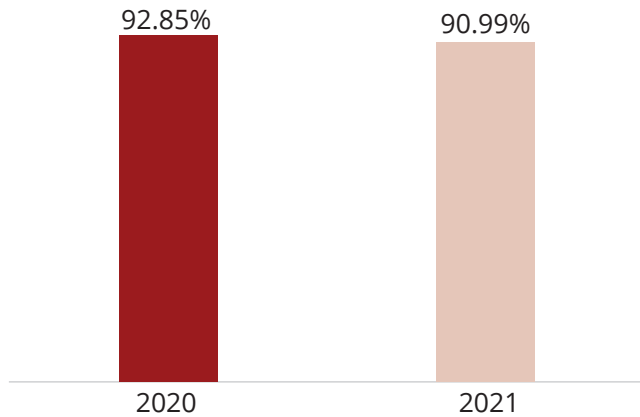


Figure 18: Difference in proportion of respondents with moderate activity level across 2020 and 2021.

Regular smoking: The proportion of respondents who are regular smokers decreased from 7.7% in 2020 to 5.17% in 2021. For Māori, the proportion of regular smokers decreased by 5.1%.

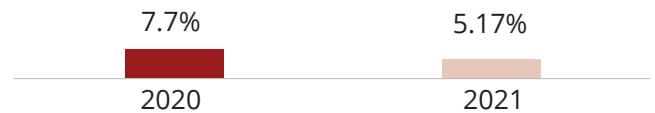


Figure 19: Difference in proportion of regular smokers between 2020 and 2021.

Alcohol use: There was a very small decrease in risky alcohol use (-0.12).

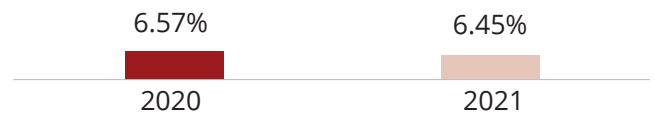


Figure 20: Difference in respondents' risky alcohol use between 2020 and 2021

APPENDIX 1: DATA ANALYSIS RESULTS

Table 1: Comparison of changes in indicators of physical health between the 2020 and 2021 survey waves.
Physical Health (SF12v2 PCS)

| | Physical Health | | |
|--|---------------------|---------------------|---------------|
| | Wave 2020 (n=3,797) | Wave 2021 (n=3,797) | p-value |
| | Mean (n) | Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 46.5(1,531) | 45.7(1,519) | 0.038* |
| Female | 46.9(2,021) | 45.9(1,977) | 0.036* |
| Ethnicity | | | |
| Non-Māori | 47.1(2,458) | 46.1(2,424) | 0.007* |
| Māori | 44.2(1,072) | 43.3(1,049) | 0.104 |
| Economic Wellbeing | | | |
| Hardship | 40.4(585) | 39.2(579) | 0.164 |
| Comfortable | 45.6(531) | 43.9(520) | 0.023* |
| Good | 48.5(2,311) | 47.8(2,271) | 0.073 |
| Chronic conditions | | | |
| 0 | 53.1(403) | 52.5(399) | 0.223 |
| 1-2 | 49.7(1,504) | 49.0(1,472) | 0.047* |
| 3+ | 42.2(1,640) | 41.0(1,614) | 0.016* |
| Current work status | | | |
| No | 44.1(1,763) | 43.2(1,737) | 0.056 |
| Yes | 49.7(1,671) | 48.8(1,647) | 0.010* |
| Tenure | | | |
| No | 42.6(344) | 40.9(343) | 0.165 |
| Yes | 47.1(3,165) | 46.3(3,110) | 0.009* |
| Housing satisfaction | | | |
| Low | 44.6(1,218) | 43.3(1,207) | 0.025* |
| Medium | 46.4(1,289) | 45.9(1,265) | 0.300 |
| High | 49.6(1,020) | 48.7(994) | 0.068 |
| Neighbourhood Social Cohesion | | | |
| Low | 45.7(1,469) | 44.6(1,449) | 0.016* |
| Medium | 47.3(894) | 46.9(867) | 0.365 |
| High | 47.5(1,164) | 46.6(1,150) | 0.171 |
| Neighbourhood satisfaction | | | |
| No | 46.1(1,056) | 44.7(1,043) | 0.014* |
| Yes | 47.0(2,465) | 46.3(2,413) | 0.072 |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 44.8(1,123) | 43.5(1,114) | 0.016* |
| Medium | 46.1(1,166) | 45.3(1,168) | 0.254 |
| High | 49.4(1,175) | 48.6(1,140) | 0.081 |
| Care giving | | | |
| No | 47.0(2,713) | 46.2(2,677) | 0.023* |
| Yes | 46.2(668) | 45.0(663) | 0.110 |
| Household composition | | | |
| Live alone | 44.3(716) | 42.7(711) | 0.055 |
| Live with others | 47.4(2,796) | 46.7(2,746) | 0.029* |
| Current work status | | | |
| No | 44.6(1,861) | 43.6(1,840) | 0.033* |
| Yes | 49.9(1,493) | 49.1(1,466) | 0.048* |
| Total | 46.7(3,552) | 45.8(3,496) | 0.003* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 2: Comparison of changes in indicators of mental health between the 2020 and 2021 survey waves
Mental Health (SF12v2 MCS)

| | Mental Health | | p-value |
|--|---------------------------------|---------------------------------|---------------|
| | Wave 2020 (n=3,797) Mean (n) | Wave 2021 (n=3,797) Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 50.9(1,531) | 50.1(1,519) | 0.048* |
| Female | 49.8(2,021) | 49.0(1,977) | 0.028* |
| Ethnicity | | | |
| Non-Māori | 50.5(2,458) | 49.7(2,424) | 0.008* |
| Māori | 48.5(1,072) | 47.8(1,049) | 0.191 |
| Economic Wellbeing | | | |
| Hardship | 42.3(585) | 41.7(579) | 0.514 |
| Comfortable | 48.7(531) | 48.0(520) | 0.290 |
| Good | 52.5(2,311) | 51.7(2,271) | 0.005* |
| Chronic conditions | | | |
| 0 | 53.2(403) | 52.4(399) | 0.162 |
| 1-2 | 51.7(1,504) | 51.3(1,472) | 0.278 |
| 3+ | 48.3(1,640) | 47.1(1,614) | 0.012* |
| Current work status | | | |
| No | 50.0(1,763) | 49.0(1,737) | 0.029* |
| Yes | 50.9(1,671) | 50.0(1,647) | 0.032* |
| Tenure | | | |
| No | 46.7(344) | 45.2(343) | 0.208 |
| Yes | 50.6(3,165) | 49.9(3,110) | 0.009* |
| Housing satisfaction | | | |
| Low | 46.1(1,218) | 45.6(1,207) | 0.394 |
| Medium | 51.3(1,289) | 50.3(1,265) | 0.020* |
| High | 54.0(1,020) | 53.2(994) | 0.041* |
| Neighbourhood Social Cohesion | | | |
| Low | 47.8(1,469) | 47.2(1,449) | 0.199 |
| Medium | 51.2(894) | 50.0(867) | 0.017* |
| High | 52.8(1,164) | 52.1(1,150) | 0.098 |
| Neighbourhood satisfaction | | | |
| No | 46.8(1,056) | 46.5(1,043) | 0.516 |
| Yes | 51.8(2,465) | 50.9(2,413) | 0.003* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 45.7(1,123) | 44.2(1,114) | 0.015* |
| Medium | 51.3(1,166) | 50.6(1,168) | 0.181 |
| High | 53.8(1,175) | 53.3(1,140) | 0.204 |
| Care giving | | | |
| No | 50.8(2,713) | 49.9(2,677) | 0.010* |
| Yes | 48.6(668) | 47.4(663) | 0.065 |
| Household composition | | | |
| Live alone | 48.7(716) | 47.5(711) | 0.128 |
| Live with others | 50.9(2,796) | 50.1(2,746) | 0.007* |
| Current work status | | | |
| No | 50.0(1,861) | 49.1(1,840) | 0.028* |
| Yes | 51.0(1,493) | 50.2(1,466) | 0.046* |
| Total | 50.3(3,552) | 49.5(3,496) | 0.003* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 3: Comparison of changes in depression symptom frequency between the 2020 and 2021 survey waves
Depression (CES-D)

| | Depression (CES-D) | | p-value |
|--|----------------------------|----------------------------|-------------------|
| | Wave 2020 (n=3,797) | Wave 2021 (n=3,797) | |
| | Mean (n) | Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 5.8(1,618) | 6.2(1,637) | 0.039* |
| Female | 6.1(2,128) | 6.8(2,130) | 0.001* |
| Ethnicity | | | |
| Non-Māori | 5.9(2,579) | 6.4(2,591) | 0.001* |
| Māori | 6.8(1,144) | 7.4(1,150) | 0.016* |
| Economic Wellbeing | | | |
| Hardship | 10.4(627) | 10.8(628) | 0.295 |
| Comfortable | 6.7(568) | 7.3(570) | 0.072 |
| Good | 4.8(2,404) | 5.3(2,415) | <0.001* |
| Chronic conditions | | | |
| 0 | 4.4(426) | 4.8(431) | 0.193 |
| 1-2 | 5.0(1,567) | 5.3(1,571) | 0.047* |
| 3+ | 7.3(1,747) | 8.0(1,754) | 0.002* |
| Current work status | | | |
| No | 6.3(1,871) | 7.0(1,881) | 0.001* |
| Yes | 5.5(1,728) | 5.9(1,740) | 0.035* |
| Tenure | | | |
| No | 8.3(378) | 9.0(379) | 0.237 |
| Yes | 5.8(3,317) | 6.3(3,336) | <0.001* |
| Housing satisfaction | | | |
| Low | 8.2(1,310) | 8.4(1,315) | 0.404 |
| Medium | 5.5(1,354) | 6.2(1,362) | 0.001* |
| High | 3.8(1,052) | 4.5(1,057) | 0.001* |
| Neighbourhood Social Cohesion | | | |
| Low | 7.4(1,554) | 7.8(1,566) | 0.062 |
| Medium | 5.6(944) | 6.2(948) | 0.009* |
| High | 4.5(1,217) | 5.0(1,219) | 0.010* |
| Neighbourhood satisfaction | | | |
| No | 7.8(1,118) | 8.0(1,124) | 0.469 |
| Yes | 5.2(2,589) | 5.8(2,599) | <0.001* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 8.6(1,202) | 9.3(1,214) | 0.008* |
| Medium | 5.6(1,232) | 6.2(1,235) | 0.008* |
| High | 3.8(1,207) | 4.1(1,218) | 0.063 |
| Care giving | | | |
| No | 5.8(2,856) | 6.2(2,883) | 0.010* |
| Yes | 6.7(703) | 7.6(707) | 0.007* |
| Household composition | | | |
| Live alone | 7.1(765) | 7.7(774) | 0.097 |
| Live with others | 5.6(2,934) | 6.1(2,948) | 0.001* |
| Current work status | | | |
| No | 6.3(1,979) | 6.9(1,991) | 0.002* |
| Yes | 5.4(1,545) | 5.8(1,558) | 0.019* |
| Total | 6.0(3,746) | 6.5(3,767) | <0.001* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 4: Comparison of changes in loneliness between the 2020 and 2021 survey waves

Loneliness

| | Loneliness | | p-value |
|--|----------------------------|----------------------------|-------------------|
| | Wave 2020 (n=3,797) | Wave 2021 (n=3,797) | |
| | Mean (n) | Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 1.7(1,615) | 1.9(1,625) | 0.025* |
| Female | 1.4(2,112) | 1.6(2,119) | <0.001* |
| Ethnicity | | | |
| Non-Māori | 1.5(2,568) | 1.7(2,574) | <0.001* |
| Māori | 1.7(1,140) | 1.9(1,143) | 0.015* |
| Economic Wellbeing | | | |
| Hardship | 2.8(619) | 3.0(626) | 0.174 |
| Comfortable | 1.8(568) | 2.1(568) | 0.058 |
| Good | 1.2(2,404) | 1.4(2,397) | <0.001* |
| Chronic conditions | | | |
| 0 | 1.2(423) | 1.4(427) | 0.344 |
| 1-2 | 1.3(1,558) | 1.5(1,558) | 0.016* |
| 3+ | 1.8(1,738) | 2.1(1,747) | 0.001* |
| Current work status | | | |
| No | 1.5(1,862) | 1.8(1,870) | 0.001* |
| Yes | 1.5(1,727) | 1.7(1,730) | 0.009* |
| Tenure | | | |
| No | 2.2(377) | 2.4(376) | 0.292 |
| Yes | 1.5(3,304) | 1.7(3,316) | <0.001* |
| Housing satisfaction | | | |
| Low | 2.3(1,295) | 2.5(1,308) | 0.029* |
| Medium | 1.3(1,352) | 1.6(1,348) | 0.001* |
| High | 0.9(1,056) | 1.0(1,055) | 0.046* |
| Neighbourhood Social Cohesion | | | |
| Low | 2.1(1,547) | 2.3(1,556) | 0.014* |
| Medium | 1.4(945) | 1.7(946) | 0.004* |
| High | 0.9(1,211) | 1.1(1,209) | 0.025* |
| Neighbourhood satisfaction | | | |
| No | 2.3(1,111) | 2.4(1,115) | 0.188 |
| Yes | 1.2(2,583) | 1.4(2,585) | <0.001* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 2.6(1,187) | 3.1(1,214) | <0.001* |
| Medium | 1.3(1,230) | 1.5(1,235) | 0.004* |
| High | 0.7(1,211) | 0.7(1,217) | 0.743 |
| Care giving | | | |
| No | 1.5(2,854) | 1.7(2,863) | <0.001* |
| Yes | 1.6(694) | 1.8(704) | 0.063 |
| Household composition | | | |
| Live alone | 1.8(760) | 2.1(769) | 0.018* |
| Live with others | 1.5(2,920) | 1.6(2,931) | 0.001* |
| Current work status | | | |
| No | 1.6(1,965) | 1.8(1,975) | <0.001* |
| Yes | 1.5(1,546) | 1.7(1,552) | 0.011* |
| Total | 1.5(3,727) | 1.7(3,744) | <0.001* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 5: Comparison of changes in number of symptoms of anxiety between the wave 2020 and 2021
Anxiety (GAI-SF)

| | Anxiety | | p-value |
|--|----------------------------|----------------------------|----------------|
| | Wave 2020 (n=3,797) | Wave 2021 (n=3,797) | |
| | Mean (n) | Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 5.8(1,592) | 5.8(1,627) | 0.746 |
| Female | 6.0(2,105) | 6.0(2,105) | 0.356 |
| Ethnicity | | | |
| Non-Māori | 5.9(2,549) | 5.9(2,563) | 0.513 |
| Māori | 6.0(1,126) | 6.0(1,142) | 0.456 |
| Economic Wellbeing | | | |
| Hardship | 6.7(620) | 6.8(617) | 0.456 |
| Comfortable | 5.9(560) | 6.2(565) | 0.047* |
| Good | 5.6(2,380) | 5.6(2,400) | 0.829 |
| Chronic conditions | | | |
| 0 | 5.6(421) | 5.6(429) | 0.868 |
| 1-2 | 5.7(1,547) | 5.7(1,556) | 0.743 |
| 3+ | 6.1(1,722) | 6.2(1,735) | 0.370 |
| Current work status | | | |
| No | 5.9(1,847) | 5.9(1,860) | 0.289 |
| Yes | 5.8(1,709) | 5.8(1,728) | 0.940 |
| Tenure | | | |
| No | 6.3(373) | 6.4(372) | 0.514 |
| Yes | 5.8(3,275) | 5.9(3,311) | 0.458 |
| Housing satisfaction | | | |
| Low | 6.3(1,282) | 6.3(1,294) | 0.884 |
| Medium | 5.7(1,343) | 5.8(1,353) | 0.306 |
| High | 5.5(1,044) | 5.6(1,055) | 0.393 |
| Neighbourhood Social Cohesion | | | |
| Low | 6.2(1,535) | 6.2(1,545) | 0.654 |
| Medium | 5.7(933) | 5.9(934) | 0.028* |
| High | 5.6(1,199) | 5.6(1,220) | 0.418 |
| Neighbourhood satisfaction | | | |
| No | 6.2(1,100) | 6.2(1,114) | 0.973 |
| Yes | 5.7(2,561) | 5.8(2,578) | 0.302 |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 6.4(1,186) | 6.5(1,198) | 0.247 |
| Medium | 5.7(1,213) | 5.8(1,230) | 0.819 |
| High | 5.5(1,195) | 5.5(1,213) | 0.872 |
| Care giving | | | |
| No | 5.8(2,824) | 5.8(2,856) | 0.939 |
| Yes | 6.0(690) | 6.2(701) | 0.043* |
| Household composition | | | |
| Live alone | 5.9(753) | 5.9(764) | 0.885 |
| Live with others | 5.8(2,897) | 5.9(2,923) | 0.334 |
| Current work status | | | |
| No | 5.9(1,958) | 5.9(1,970) | 0.376 |
| Yes | 5.8(1,527) | 5.9(1,549) | 0.754 |
| Total | 5.9(3,697) | 5.9(3,732) | 0.378 |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 6: Comparison of changes in life satisfaction between the 2020 and 2021 survey waves

Life satisfaction

| | Life satisfaction | | p-value |
|--|---------------------------------|---------------------------------|---------------|
| | Wave 2020 (n=3,797) Mean (n) | Wave 2021 (n=3,797) Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 4.1(1,630) | 4.0(1,638) | 0.042* |
| Female | 4.1(2,136) | 4.1(2,131) | 0.059 |
| Ethnicity | | | |
| Non-Māori | 4.1(2,587) | 4.1(2,592) | 0.016* |
| Māori | 4.1(1,153) | 4.0(1,150) | 0.010* |
| Economic Wellbeing | | | |
| Hardship | 3.5(627) | 3.5(629) | 0.377 |
| Comfortable | 4.0(570) | 3.9(571) | 0.156 |
| Good | 4.3(2,412) | 4.2(2,411) | 0.005* |
| Chronic conditions | | | |
| 0 | 4.3(430) | 4.3(429) | 0.214 |
| 1-2 | 4.3(1,575) | 4.2(1,573) | 0.191 |
| 3+ | 4.0(1,752) | 3.9(1,755) | 0.031* |
| Current work status | | | |
| No | 4.1(1,875) | 4.0(1,879) | 0.099 |
| Yes | 4.2(1,741) | 4.1(1,739) | 0.025* |
| Tenure | | | |
| No | 3.7(382) | 3.7(381) | 0.622 |
| Yes | 4.2(3,334) | 4.1(3,336) | 0.007* |
| Housing satisfaction | | | |
| Low | 3.8(1,318) | 3.7(1,316) | 0.302 |
| Medium | 4.2(1,357) | 4.1(1,358) | 0.025* |
| High | 4.4(1,061) | 4.3(1,062) | 0.063 |
| Neighbourhood Social Cohesion | | | |
| Low | 3.9(1,563) | 3.9(1,564) | 0.394 |
| Medium | 4.2(948) | 4.1(947) | 0.013* |
| High | 4.4(1,223) | 4.3(1,223) | 0.055 |
| Neighbourhood satisfaction | | | |
| No | 3.8(1,117) | 3.8(1,121) | 0.701 |
| Yes | 4.3(2,608) | 4.2(2,604) | 0.001* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 3.8(1,208) | 3.7(1,211) | 0.001* |
| Medium | 4.1(1,232) | 4.1(1,234) | 0.932 |
| High | 4.4(1,217) | 4.4(1,218) | 0.091 |
| Care giving | | | |
| No | 4.1(2,869) | 4.1(2,879) | 0.042* |
| Yes | 4.1(710) | 4.0(707) | 0.017* |
| Household composition | | | |
| Live alone | 4.0(774) | 3.9(778) | 0.050 |
| Live with others | 4.2(2,945) | 4.1(2,945) | 0.034* |
| Current work status | | | |
| No | 4.1(1,986) | 4.1(1,988) | 0.095 |
| Yes | 4.1(1,556) | 4.1(1,561) | 0.021* |
| Total | 4.1(3,766) | 4.1(3,769) | 0.005* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 7: Comparison of changes in quality of life between the 2020 and 2021 survey waves

Quality of life

| | Quality of life | | p-value |
|--|---------------------------------|---------------------------------|--------------|
| | Wave 2020 (n=3,797) Mean (n) | Wave 2021 (n=3,797) Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 4.3(1,634) | 4.2(1,641) | 0.021* |
| Female | 4.4(2,135) | 4.4(2,138) | 0.938 |
| Ethnicity | | | |
| Non-Māori | 4.3(2,589) | 4.3(2,598) | 0.106 |
| Māori | 4.2(1,154) | 4.1(1,154) | 0.197 |
| Economic Wellbeing | | | |
| Hardship | 3.6(630) | 3.6(630) | 0.678 |
| Comfortable | 4.2(572) | 4.1(572) | 0.337 |
| Good | 4.5(2,411) | 4.5(2,418) | 0.059 |
| Chronic conditions | | | |
| 0 | 4.6(431) | 4.6(430) | 0.668 |
| 1-2 | 4.5(1,571) | 4.4(1,578) | 0.435 |
| 3+ | 4.1(1,758) | 4.0(1,759) | 0.096 |
| Current work status | | | |
| No | 4.3(1,878) | 4.2(1,886) | 0.251 |
| Yes | 4.4(1,741) | 4.3(1,742) | 0.202 |
| Tenure | | | |
| No | 3.9(380) | 3.8(382) | 0.698 |
| Yes | 4.4(3,338) | 4.3(3,344) | 0.058 |
| Housing satisfaction | | | |
| Low | 4.0(1,320) | 3.9(1,321) | 0.570 |
| Medium | 4.4(1,356) | 4.4(1,363) | 0.158 |
| High | 4.6(1,062) | 4.6(1,062) | 0.064 |
| Neighbourhood Social Cohesion | | | |
| Low | 4.1(1,569) | 4.1(1,569) | 0.339 |
| Medium | 4.4(945) | 4.4(952) | 0.311 |
| High | 4.5(1,222) | 4.5(1,223) | 0.127 |
| Neighbourhood satisfaction | | | |
| No | 4.0(1,121) | 4.0(1,124) | 0.690 |
| Yes | 4.5(2,607) | 4.4(2,611) | 0.027* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 3.9(1,212) | 3.9(1,215) | 0.106 |
| Medium | 4.4(1,232) | 4.3(1,236) | 0.561 |
| High | 4.6(1,215) | 4.6(1,222) | 0.201 |
| Care giving | | | |
| No | 4.3(2,873) | 4.3(2,887) | 0.433 |
| Yes | 4.3(710) | 4.2(708) | 0.060 |
| Household composition | | | |
| Live alone | 4.1(777) | 4.1(779) | 0.371 |
| Live with others | 4.4(2,945) | 4.3(2,954) | 0.110 |
| Current work status | | | |
| No | 4.3(1,990) | 4.2(1,995) | 0.067 |
| Yes | 4.4(1,555) | 4.4(1,563) | 0.437 |
| Total | 4.3(3,769) | 4.3(3,779) | 0.077 |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 8: Comparison of changes in physical activity between the 2020 and 2021 survey waves

Physical activity (moderate)

| | Physical activity (moderate) | | p-value |
|--|---------------------------------|---------------------------------|---------------|
| | Wave 2020 (n=3,797) Mean (n) | Wave 2021 (n=3,797) Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 93.1(1,499) | 91.5(1,501) | 0.228 |
| Female | 92.6(1,972) | 90.5(1,911) | 0.098 |
| Ethnicity | | | |
| Non-Māori | 93.3(2,418) | 91.2(2,371) | 0.035* |
| Māori | 89.3(1,031) | 89.4(1,018) | 0.934 |
| Economic Wellbeing | | | |
| Hardship | 83.9(523) | 80.2(504) | 0.193 |
| Comfortable | 93.3(529) | 90.7(512) | 0.190 |
| Good | 94.7(2,281) | 93.8(2,256) | 0.388 |
| Chronic conditions | | | |
| 0 | 98.2(418) | 96.9(411) | 0.292 |
| 1-2 | 96.8(1,514) | 96.9(1,508) | 0.952 |
| 3+ | 87.7(1,532) | 84.0(1,484) | 0.038* |
| Current work status | | | |
| No | 90.6(1,695) | 87.4(1,643) | 0.037* |
| Yes | 95.5(1,642) | 95.3(1,644) | 0.775 |
| Tenure | | | |
| No | 82.7(314) | 84.3(313) | 0.661 |
| Yes | 93.8(3,113) | 91.8(3,060) | 0.030* |
| Housing satisfaction | | | |
| Low | 89.4(1,161) | 86.3(1,129) | 0.084 |
| Medium | 93.5(1,269) | 91.2(1,249) | 0.158 |
| High | 96.3(1,013) | 96.7(1,007) | 0.717 |
| Neighbourhood Social Cohesion | | | |
| Low | 91.4(1,415) | 89.3(1,383) | 0.097 |
| Medium | 93.8(874) | 93.3(862) | 0.668 |
| High | 93.9(1,153) | 91.9(1,139) | 0.308 |
| Neighbourhood satisfaction | | | |
| No | 91.8(1,015) | 88.7(985) | 0.051 |
| Yes | 93.4(2,419) | 92.1(2,390) | 0.243 |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 89.2(1,067) | 86.7(1,044) | 0.125 |
| Medium | 93.1(1,150) | 91.4(1,133) | 0.345 |
| High | 96.6(1,159) | 95.0(1,147) | 0.205 |
| Care giving | | | |
| No | 92.8(2,645) | 91.9(2,617) | 0.310 |
| Yes | 92.7(654) | 91.6(638) | 0.537 |
| Household composition | | | |
| Live alone | 88.5(685) | 84.7(666) | 0.173 |
| Live with others | 94.1(2,744) | 92.9(2,711) | 0.166 |
| Current work status | | | |
| No | 90.4(1,796) | 87.8(1,754) | 0.085 |
| Yes | 96.4(1,474) | 95.7(1,472) | 0.389 |
| Total | 92.8(3,471) | 91.0(3,412) | 0.042* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 9: Comparison of changes in smoking between the 2020 and 2021 survey waves

Regular smoker

| | Regular smoker | | p-value |
|--|----------------------------|----------------------------|----------------|
| | Wave 2020 (n=3,797) | Wave 2021 (n=3,797) | |
| | Mean (n) | Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 8.3(122) | 5.4(85) | 0.016* |
| Female | 7.1(159) | 4.9(118) | 0.019* |
| Ethnicity | | | |
| Non-Māori | 6.8(124) | 4.6(94) | 0.008* |
| Māori | 15.8(155) | 10.7(108) | 0.002* |
| Economic Wellbeing | | | |
| Hardship | 17.6(110) | 13.3(82) | 0.120 |
| Comfortable | 7.0(51) | 5.0(36) | 0.275 |
| Good | 5.3(104) | 3.2(75) | 0.008* |
| Chronic conditions | | | |
| 0 | 4.8(17) | 3.7(16) | 0.554 |
| 1-2 | 7.0(96) | 4.4(69) | 0.020* |
| 3+ | 9.1(167) | 6.2(115) | 0.018* |
| Current work status | | | |
| No | 7.0(132) | 5.0(100) | 0.049* |
| Yes | 8.2(129) | 5.2(91) | 0.007* |
| Tenure | | | |
| No | 22.5(80) | 15.8(55) | 0.102 |
| Yes | 6.1(191) | 4.0(140) | 0.003* |
| Housing satisfaction | | | |
| Low | 11.4(147) | 7.5(104) | 0.012* |
| Medium | 6.7(92) | 4.2(63) | 0.025* |
| High | 4.0(37) | 3.3(32) | 0.495 |
| Neighbourhood Social Cohesion | | | |
| Low | 9.0(132) | 6.1(97) | 0.021* |
| Medium | 6.6(65) | 5.6(54) | 0.457 |
| High | 6.4(78) | 3.3(48) | 0.008* |
| Neighbourhood satisfaction | | | |
| No | 10.1(115) | 7.3(89) | 0.071 |
| Yes | 6.4(160) | 4.1(110) | 0.006* |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 9.8(124) | 6.8(92) | 0.040* |
| Medium | 7.2(96) | 4.6(63) | 0.036* |
| High | 6.0(54) | 4.4(45) | 0.221 |
| Care giving | | | |
| No | 7.7(207) | 4.6(139) | <0.001* |
| Yes | 7.9(62) | 7.6(56) | 0.898 |
| Household composition | | | |
| Live alone | 11.9(89) | 8.7(71) | 0.113 |
| Live with others | 6.4(185) | 4.0(128) | 0.002* |
| Current work status | | | |
| No | 7.4(153) | 5.0(111) | 0.015* |
| Yes | 7.9(110) | 5.4(78) | 0.040* |
| Total | 7.7(281) | 5.2(203) | 0.001* |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 10: Comparison of changes in alcohol use between the 2020 and 2021 survey waves

Alcohol use (AUDIT-C total score)

| | Alcohol use | | p-value |
|--|---------------------------------|---------------------------------|--------------|
| | Wave 2020 (n=3,797) Mean (n) | Wave 2021 (n=3,797) Mean (n) | |
| Moderator variables (below) from 2020 | | | |
| Sex | | | |
| Male | 7.2(1,333) | 7.0(1,359) | 0.082 |
| Female | 6.0(1,630) | 5.9(1,612) | 0.287 |
| Ethnicity | | | |
| Non-Māori | 6.6(2,074) | 6.4(2,107) | 0.056 |
| Māori | 6.7(873) | 6.7(844) | 0.566 |
| Economic Wellbeing | | | |
| Hardship | 6.2(453) | 6.1(444) | 0.757 |
| Comfortable | 6.3(438) | 6.3(427) | 0.995 |
| Good | 6.7(1,964) | 6.5(1,991) | 0.050 |
| Chronic conditions | | | |
| 0 | 6.6(356) | 6.4(355) | 0.406 |
| 1-2 | 6.6(1,254) | 6.5(1,280) | 0.103 |
| 3+ | 6.5(1,347) | 6.4(1,326) | 0.486 |
| Current work status | | | |
| No | 6.4(1,447) | 6.2(1,433) | 0.074 |
| Yes | 6.7(1,424) | 6.6(1,445) | 0.494 |
| Tenure | | | |
| No | 6.7(274) | 6.3(248) | 0.205 |
| Yes | 6.6(2,659) | 6.5(2,687) | 0.151 |
| Housing satisfaction | | | |
| Low | 6.4(1,001) | 6.3(980) | 0.457 |
| Medium | 6.6(1,089) | 6.5(1,092) | 0.206 |
| High | 6.6(854) | 6.5(873) | 0.313 |
| Neighbourhood Social Cohesion | | | |
| Low | 6.5(1,206) | 6.4(1,189) | 0.165 |
| Medium | 6.6(773) | 6.5(780) | 0.305 |
| High | 6.6(967) | 6.5(977) | 0.639 |
| Neighbourhood satisfaction | | | |
| No | 6.5(878) | 6.3(884) | 0.157 |
| Yes | 6.6(2,058) | 6.5(2,055) | 0.291 |
| Moderator variables (below) from 2021 | | | |
| Social support | | | |
| Low | 6.5(940) | 6.4(922) | 0.372 |
| Medium | 6.6(981) | 6.4(998) | 0.096 |
| High | 6.7(973) | 6.6(992) | 0.471 |
| Care giving | | | |
| No | 6.7(2,280) | 6.5(2,299) | 0.043* |
| Yes | 6.2(540) | 6.1(535) | 0.752 |
| Household composition | | | |
| Live alone | 6.2(578) | 6.1(578) | 0.365 |
| Live with others | 6.7(2,349) | 6.5(2,363) | 0.091 |
| Current work status | | | |
| No | 6.4(1,534) | 6.3(1,540) | 0.059 |
| Yes | 6.8(1,275) | 6.6(1,296) | 0.312 |
| Total | 6.6(2,963) | 6.4(2,971) | 0.076 |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05

Table 11: Comparison of changes marital status, employment and housing tenure between the 2020 and 2021 survey waves.

| | Wave 2020 (n=3,797) % (n) | Wave 2021 (n=3,797) % (n) | p-value |
|--------------------------------|------------------------------|------------------------------|---------|
| Marital status | | | |
| Married or <i>de facto</i> | 73.9(2,764) | 73.2(2,728) | 0.606 |
| Not married or <i>de facto</i> | 26.1(993) | 26.8(1,026) | |
| Current work status | | | |
| No | 52.8(1,896) | 56.0(2,007) | 0.032* |
| Yes | 47.2(1,748) | 44.0(1,565) | |
| Home owner | | | |
| No | 8.0(385) | 8.2(378) | 0.821 |
| Yes | 92.0(3,358) | 91.8(3,347) | |

Note: weighted analysis; total number varies between categories because of missing values. *p < 0.05



APPENDIX 2: STANDARDISED MEASURES USED IN THE ANALYSES

OUTCOME VARIABLES

Physical and Mental Health

The Optum™ SF-12v2® Health Survey comprises 12 items forming eight subscales. To assess physical health, four subscales (General Health [one item], Physical Functioning [two items], Role Physical [two items], and Bodily Pain [one item]) were combined. To assess mental health, four subscales (Vitality [one item], Social Functioning [one item], Role Emotional [two items], and Mental Health [two items]) were combined (Ware, Keller, & Kosinski, 1998). These physical and mental health component scores were calculated using normative subscale scores for the New Zealand population derived from the 2008 New Zealand General Social Survey, and factor score coefficients derived from the 2006-2007 New Zealand Health Survey (Frieling, Davis, & Chiang, 2013).



Quality of Life and Life Satisfaction

Quality of Life and Life Satisfaction were each assessed with a single item on a 5-point scale (scored 1-5): How would you rate your quality of life? Very poor (1) to Very good (5); All things considered, how satisfied are you with your life as a whole these days? Very dissatisfied (1) to Very satisfied (5)



Depression

Depression symptom frequency was assessed using the 10-item Center for Epidemiologic Studies Depression Scale (CES-D10: Andresen, Malmgren, Carter, & Patrick, 1994), designed for assessment of older adult populations in epidemiological studies. Participants indicated the frequency with which they had experienced each of ten symptoms of depression in the past 7 days. Items were recoded and summed such that higher scores indicated greater depression symptom frequency (range 0-30).



Anxiety

Symptoms of anxiety were assessed with the Geriatric Anxiety Inventory short form (GAI-SF: Byrne & Pachana, 2011), designed for the assessment of older adult populations in epidemiological studies. The GAI-SF comprises five questions assessing the presence of symptoms of anxiety in the past seven days against response options coded 0 (No) or 1 (Yes) with a summed total score range 0-5.



Loneliness

The six-item de Jong Gierveld Loneliness Scale was used to assess experience of social and emotional loneliness (Gierveld & Tilburg, 2006). Participants indicated the degree to which three items reflecting experiences of social loneliness (sample item: “there are plenty of people I can rely on when I have problems”) and three items reflecting experiences of emotional loneliness (sample item: “I experience a general sense of emptiness”) applied to the way they feel now. Response options were “yes”, “more or less” or “no”. Items were recoded to provide a binary item score indicating any experience of loneliness, and item scores summed to indicate greater experiences of loneliness (range 0-6).



Health Related Behaviours

Alcohol use. Alcohol consumption was operationalised with the Alcohol Use Disorders Identification Test-Concise (AUDIT-C; Bush et al., 1998), a brief 3-item screener for detecting risky drinking behaviours at early stages. Respondents were asked how often they drink, how many drinks they consume in a typical day and how often they have six or more drinks on one occasion, with answers on a 5-point rating scale. Total scores range from 0-12, with higher numbers indicating a greater alcohol-related risk.



Moderate physical activity was categorised as a dichotomous variable. If respondents reported moderately energetic activity (e.g., gardening, brisk walking) at least “one to three times a month” the score was 1, and if “hardly ever or never” the score was 0.

Regular tobacco use was also categorized as a dichotomous variable: Currently a regular smoker (1 = yes) or not a regular smoker (0 = no).



MODERATOR VARIABLES

Economic wellbeing

Economic wellbeing was assessed using the Economic Living Standards Index short form (ELSI-SF), a non-incomes approach to material wellbeing (Jensen, Spittal, & Krishnan, 2005). Scores range from 0-31, with higher scores indicating better living standards. Scores were categorised as indicative of 'hardship' (0-16), 'comfortable' (17-24), or 'good' (25-31) material living standards.



Chronic Health Conditions

Participants reported whether a health professional had ever told them that they had any of the following fourteen conditions: Arthritis or rheumatism; Disorders of the neck or back; Diabetes; Disability; Heart trouble (e.g., angina or heart attack); High blood pressure or hypertension; Depression; Other mental illness; Respiratory condition (e.g., bronchitis, asthma); Sleep disorder; Stroke; Active or chronic gout; Active/chronic hepatitis, cirrhosis or other liver condition; Cancer. The number of conditions reported by participants was coded as 0, 1-2, or 3 or more conditions.



Social Support

The Social Provisions Scale (Cutrona & Russell, 1987) assesses the degree to which respondent's social relationships provide various dimensions of social support that is theorized in terms of six dimensions of relational provisions: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Each subscale comprises four items, answered on a 4-point scale (1 = strongly disagree and 4 = strongly agree). Items were combined and a composite measure of social provisions created (range 24-96). This composite score was divided into tertiles where low values indicate LOW Social Support.



Housing and Neighbourhood

Housing Tenure was a dichotomous variable. Home ownership including ownership with and without a mortgage and license to occupy was coded Yes, while all other forms of tenure were coded No.



Housing Satisfaction. Satisfaction with the home was assessed with eight items adapted from Heywood, Oldman, and Means (2002) and Oswald et al. (2006) to cover general satisfaction (e.g., "My home meets all my needs"), housing quality ("I am able to keep my house warm"), and social provisions of housing (e.g., "My house enables me to see friends and family as often as I like"), all anchored at 1 = no, definitely not and 5 = yes, definitely. Item scores were summed to provide a composite measure of housing satisfaction. This score was divided into tertiles where low values indicate LOW Housing Satisfaction.

Neighbourhood Satisfaction was assessed with a single item ('I am satisfied with my neighborhood'), on a scale of 1 'no, definitely not' to 5 'yes, definitely'. The response 'yes, definitely' was considered as YES and the rest as NO.

Neighbourhood Social Cohesion. The Trust subscale of the neighbourhood social cohesion tool (Stafford et al., 2003) has six items (e.g., "Most people in this area can be trusted"), assessed on a 5-point scale anchored at 1 = strongly disagree and 5 = strongly agree. For this analysis the scores on each item were summed and the final score divided into tertiles where low values indicate LOW Neighbourhood Social Cohesion. The scale has demonstrated internal consistency and construct validity (Stafford et al., 2003) and shown to be a reliable indicator of neighbourhood satisfaction in Aotearoa (e.g., Stephens et al., 2020).

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APPENDIX 3: 2021 QUESTIONNAIRE ITEMS

YOUR HEALTH, WELLBEING AND QUALITY OF LIFE

(SF12 items removed for copyright reasons)

Q1 In general, would you say your health is: *(Please cross one box)*

| Excellent | Very good | Good | Fair | Poor |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q2 All things considered, how satisfied are you with your life as a whole these days? *(Please cross one box)*

| Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
|--------------------------|--------------------------|------------------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q3 How would you rate your quality of life? *(Please cross one box)*

| Very poor | Poor | Neither good nor poor | Good | Very good |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions are about activities you might do during a typical day.

Q4 Q10 Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week (7 days).

| <i>(Please cross one box on each line)</i> | Rarely or none of the time | Some or a little of the time | Occasionally or a moderate amount of the time | All of the time |
|--|----------------------------|------------------------------|---|--------------------------|
| I was bothered by things that usually don't bother me. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I had trouble keeping my mind on what I was doing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I felt depressed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I felt that everything I did was an effort. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I felt hopeful about the future. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I felt fearful. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My sleep was restless. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I was happy. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I felt lonely. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I could not "get going." | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q11 Please answer the items according to how you've felt in the last week. Indicate 'agree' if you mostly agree that the item describes you or indicate 'disagree' if you mostly disagree that the item describes you.

| <i>(Please cross one box on each line)</i> | Agree | Disagree |
|--|--------------------------|--------------------------|
| I worry a lot of the time. | <input type="checkbox"/> | <input type="checkbox"/> |
| Little things bother me a lot. | <input type="checkbox"/> | <input type="checkbox"/> |
| I think of myself as a worrier. | <input type="checkbox"/> | <input type="checkbox"/> |
| I often feel nervous. | <input type="checkbox"/> | <input type="checkbox"/> |
| My own thoughts often make me nervous. | <input type="checkbox"/> | <input type="checkbox"/> |

Q12 Please indicate whether a health professional has ever told you that you have any of the following conditions.

| <i>(Please cross one box on each line)</i> | Yes | No |
|--|--------------------------|--------------------------|
| A serious and chronic respiratory condition, such as a chronic obstructive pulmonary disease (e.g., emphysema or chronic bronchitis) | <input type="checkbox"/> | <input type="checkbox"/> |
| Chronic kidney/renal disease | <input type="checkbox"/> | <input type="checkbox"/> |
| Diabetes | <input type="checkbox"/> | <input type="checkbox"/> |
| A coronary heart condition (e.g., angina or heart attack) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stroke | <input type="checkbox"/> | <input type="checkbox"/> |
| Hypertension (high blood pressure) | <input type="checkbox"/> | <input type="checkbox"/> |
| Cancer (<i>in the past 12 months</i>), excluding basal and squamous skin cancers if not invasive. | <input type="checkbox"/> | <input type="checkbox"/> |

Q13 To what degree would you say the COVID-19 pandemic has had a **negative** impact on your overall:

| <i>(Please cross one box on each line)</i> | Not at all | A little bit | Moderately | Quite a bit | Extremely |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Physical health | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mental health | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q14 Has the wellbeing of any of your whānau/family members living in Aotearoa New Zealand been affected by the COVID-19 pandemic? *(Please cross one box)*

| Not at all | | | | | A great deal |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q15 Has the wellbeing of any of your whānau/family members living overseas been affected by the COVID-19 pandemic? *(Please cross one box)*

| Not at all | | | | | A great deal |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q16 Has a health professional or government health agency ever told you that you have COVID-19? *(Please cross one box)*

No Yes

Q17 Do you usually receive the seasonal flu vaccine? *(Please cross one box)*

| Yes, every year | Yes, every other year | Yes, within the past 5 years | No, not in the past 5 years | Never |
|--------------------------|--------------------------|------------------------------|-----------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q18 Have you received a vaccine against the COVID-19 coronavirus? *(Please cross one box)*

No Yes

Q19a If you **have not** received a vaccine against the COVID-19 coronavirus, do you intend to get one when it is available to you? *(Please cross one box)*

| Definitely | Probably | Probably not | Definitely not |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q19b If you **do not** intend to get the COVID-19 vaccine as soon as you are able, can you tell us why? *(Please cross all that apply)*

| | |
|--|---|
| <input type="checkbox"/> I don't believe it will be effective in protecting me from COVID-19 infection. | <input type="checkbox"/> It is too soon to see whether the vaccine will provide protection from COVID-19 in the long term. |
| <input type="checkbox"/> I am concerned about known side-effects of the vaccine. | <input type="checkbox"/> I worry there will be unknown side-effects of the vaccine. |
| <input type="checkbox"/> I'd rather wait to see if it causes any health problems for others. | <input type="checkbox"/> I worry it may affect my health in other ways and may leave my health worse overall. |
| <input type="checkbox"/> I worry that the vaccine will adversely affect my existing medical conditions and symptoms. | <input type="checkbox"/> I do not have enough information on the safety, side effects and efficacy of the COVID-19 vaccine. |
| <input type="checkbox"/> I don't trust any vaccines. | <input type="checkbox"/> I am not sure how to get the vaccine. |
| <input type="checkbox"/> Other (please specify): | |

The following questions are about your current health and health-related behaviours.

Please cross the box that best answers each question.

Q20 How often do you take part in sports or activities that are:

| <i>(Please cross one box on each line)</i> | More than once a week | Once a week | One to three times a month | Hardly ever or never |
|--|--------------------------|--------------------------|----------------------------|--------------------------|
| ...vigorous (e.g., running or jogging, swimming, aerobics) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ...moderately energetic (e.g., gardening, brisk walking) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ...mildly energetic (e.g., vacuuming, laundry/washing) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q21 If you **currently** consider yourself a regular smoker, how many do you think you would smoke on an average day? *(Please cross one box)*

| 1 to 10 | 11 to 20 | 21 to 30 | 31 or more | Not a regular smoker |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q22 How often do you have a drink containing alcohol? *(Please cross one box)*

| Never | Monthly or less | Two to four times per month | Two to three times per week | Four or more times a week |
|--------------------------|--------------------------|-----------------------------|-----------------------------|---------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q23 How many drinks containing alcohol do you have on a typical day when drinking? *(Please cross one box)*

| 1 or 2 | 3 or 4 | 5 or 6 | 7 to 9 | 10 or more |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q24 How often do you have six or more drinks on one occasion? *(Please cross one box)*

| Never | Less than monthly | Monthly | Weekly | Daily or almost daily |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q25 These questions are about how you feel about life and your participation in various activities.

| <i>(Please cross one box on each line)</i> | Strongly disagree | Disagree | Agree | Strongly agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| I have a system of values and beliefs that guide my daily activities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have a philosophy of life that helps me understand who I am. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel like I am living fully. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel I have found a really significant meaning in life. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In my life, I have clear goals and aims. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have a sense of direction and purpose in life. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel good when I think of what I have done in the past. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am at peace with my past. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

WHĀNAU, FAMILY AND FRIENDS

Q26 Please indicate for each of the statements below, the extent to which they apply to the way you feel now?

| <i>(Please cross one box on each line)</i> | Yes | More or less | No |
|--|--------------------------|--------------------------|--------------------------|
| I experience a general sense of emptiness. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are plenty of people I can rely on when I have problems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are many people I can trust completely. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are enough people I feel close to. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I miss having people around. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I often feel rejected. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q27 Think about your current relationships with friends, whānau/family members, co-workers, community members and so on. To what extent do you agree that each statement describes your current relationships with other people?

| <i>(Please cross one box on each line)</i> | Strongly disagree | Disagree | Agree | Strongly agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| There are people I can depend on to help me if I really need it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel that I do not have close personal relationships with other people. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one I can turn to for guidance in times of stress. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are people who depend on me for help. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are people who enjoy the same social activities I do. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other people do not view me as competent. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel personally responsible for the well-being of another person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel part of a group of people who share my attitudes and beliefs. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I do not think other people respect my skills and abilities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| If something went wrong, no one would come to my assistance. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have close relationships that provide me with a sense of emotional security and well-being. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is someone I could talk to about important decisions in my life. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have relationships where my competence and skills are recognised. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one who shares my interests and concerns. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one who really relies on me for their wellbeing. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q27 Continued

| <i>(Please cross one box on each line)</i> | Strongly disagree | Disagree | Agree | Strongly agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| There is a trustworthy person I could turn to for advice if I were having problems. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel a strong emotional bond with at least one other person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one I can depend on for aid if I really need it. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one I feel comfortable talking about problems with. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are people who admire my talents and abilities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I lack a feeling of intimacy with another person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is no one who likes to do the things I do. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are people I can count on in an emergency. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| No one needs me to care for them. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q28 Do you provide unpaid care for:

| <i>(Please cross one box on each line)</i> | Yes, daily | Yes, weekly | Yes, occasionally | No, never | Not applicable (I have none) |
|--|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| Your mokopuna/ grandchildren? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other people's whāngai/ children? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q29 How many hours do you contribute to volunteer activities per week? **Hours per week**

Q30 To what extent has the COVID-19 pandemic had a negative effect on your volunteering activities?
(Please cross one box)

| Not at all | | | | | A great deal |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q31 Please check the ways in which you keep in touch with others outside your household during periods of lockdown. *(Please cross all that apply)*

- Phone (voice or text) Post
- Email Video/voice calls (e.g. Zoom, Skype, FaceTime)
- Social media (e.g. Facebook, blogging) Talking while social distancing
- Instant messaging applications (e.g. Facebook Messenger, WhatsApp, Messenger, Signal)
- Other (please specify):

CAREGIVING

These questions are about providing care for someone with a long-term illness, disability or frailty. By 'providing care', we mean practical assistance for at least 3 hours a week.

Q32 Have you provided care for someone with a long-term illness, disability or frailty within the last 12 months?
(Please cross one box)

No Yes

If 'No', please leave Q33-Q38 blank and go to Q39

Q33 Approximately how old is/was the person you care(d) for? Years

Q34 How long have/had you been caring for this person? Years Months

Q35 How often on average do (did) you provide this care or assistance? (Please cross one box)

| Every day | Several times per week | Once a week | Once every few weeks | Less often |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q36 Does/did the person you care(d) for: (Please cross one box)

 Live with you Live alone Live with their whānau/family Live in a nursing home or care facility Live with their friends Other

Q37 Does/did the person you care(d) for have any of the following major medical conditions or disabilities?
(Please cross all that apply)

 Frailty in old age Stroke Intellectual disability Mental health problem (e.g., depression) Visual impairment Cancer Alzheimer's disease/dementia Respiratory condition (e.g., asthma, emphysema) Severe arthritis / rheumatism Other (Please specify):

Q38 To what extent has the COVID-19 pandemic had a negative effect on your ability to provide care?
(Please cross one box)

| Not at all | | | | A great deal |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

WHERE YOU LIVE

Q39 Which one of the following options best describes the type of residence that you currently live in (your primary residence)? *(Please cross one box)*

- House or townhouse (detached or 'stand alone')
- House, townhouse, unit or apartment (joined to one or more other houses, townhouses, units or apartments)
- Unit, villa or apartment in Retirement Village
- Moveable dwelling (e.g., caravan, motor home, boat, tent)
- Rest home or continuing care hospital
- Other (Please specify):

Q40 In terms of the ownership arrangements your primary residence is: *(Please cross one box)*

- Owned by yourself and/or spouse/partner **with a mortgage**
- Owned by yourself and/or spouse/partner **without a mortgage**
- Owned by whānau/family
- Owned by a whānau/family trust
- Private rental
- State, Council or Kaumātua housing
- Licence to occupy
- Other (Please specify):

Q41 How long have you lived in your present home? **Years** **Months**

WORK AND RETIREMENT

Q42 Since the COVID-19 pandemic was declared by the World Health Organisation (WHO) on March 11, 2020:

| <i>(Please cross one box on each line)</i> | Yes | No |
|---|--------------------------|--------------------------|
| Have you engaged in any paid employment? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you been considered an essential worker? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you worked from home? | <input type="checkbox"/> | <input type="checkbox"/> |
| Has your hourly wage or salary been reduced? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have your hours of paid employment been reduced? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you lost or left your job? | <input type="checkbox"/> | <input type="checkbox"/> |
| Have you been offered skills training from your employer to support how you do your job during the COVID-19 pandemic? | <input type="checkbox"/> | <input type="checkbox"/> |

Q43 Have you received any hardship assistance as a result of the COVID-19 pandemic?

| <i>(Please cross one box on each line)</i> | Yes | No |
|---|--------------------------|--------------------------|
| Government assistance to support your business (if applicable) | <input type="checkbox"/> | <input type="checkbox"/> |
| Government assistance such as welfare benefits | <input type="checkbox"/> | <input type="checkbox"/> |
| Material assistance from non-government organisations, such as food banks | <input type="checkbox"/> | <input type="checkbox"/> |
| Assistance from lenders, such as a mortgage holiday from your bank | <input type="checkbox"/> | <input type="checkbox"/> |
| A Kiwisaver hardship withdrawal | <input type="checkbox"/> | <input type="checkbox"/> |

Q44 Has/will the COVID-19 pandemic be a factor in your decision to retire (i.e., earlier or later than you had previously planned)?

Yes, plan to retire *earlier*
 No change to plans
 Yes, plan to retire *later*

Q45 How many hours do you currently work in paid employment per week? **Years**

Q46 How long have you worked for your current employer?

Years
 Months
OR
 N/A, I do not work for an employer

Q47 If you are self-employed, how long have you been self-employed?

Years
 Months
OR
 N/A, I am not self-employed

Q48 If you are retired, at what age did you retire?

Age at retirement
OR
 I am not retired

Q49 Which of the following best describes your **current** work status? *(Please cross one box)*

| | |
|---|--------------------------|
| Full-time paid work, for an employer | <input type="checkbox"/> |
| Part-time paid work, for an employer | <input type="checkbox"/> |
| Full-time self-employed paid employment | <input type="checkbox"/> |
| Part-time self-employed paid employment | <input type="checkbox"/> |
| Flexible work schedule negotiated with employer | <input type="checkbox"/> |
| Project or contract work (short term and full time) | <input type="checkbox"/> |
| Project or contract work (short term and part time) | <input type="checkbox"/> |
| Fully retired, no paid work | <input type="checkbox"/> |
| Full-time homemaker | <input type="checkbox"/> |
| Full-time student | <input type="checkbox"/> |
| Unable to work due to health or disability issue | <input type="checkbox"/> |
| Unemployed and seeking work | <input type="checkbox"/> |
| Other (Please specify): | <input type="checkbox"/> |

YOUR FINANCIAL WELLBEING

Q50 For the following questions, please indicate whether or not you have (or have access to) the item:

| <i>(Please cross one box on each line)</i> | Yes, I have it | No, because I don't want it | No, because of the cost | No, for some other reason |
|---|--------------------------|-----------------------------|--------------------------|---------------------------|
| Telephone | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Washing machine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| At least two pair of good shoes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Suitable clothes for important or special occasions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Personal computer | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Home contents insurance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Enough room for whānau/family to stay the night | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q51 For the following questions, please indicate whether or not you do the activity:

| <i>(Please cross one box on each line)</i> | Yes, I have it | No, because I don't want it | No, because of the cost | No, for some other reason |
|--|--------------------------|-----------------------------|--------------------------|---------------------------|
| Keep the main rooms of your home adequately heated | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Give presents to whānau/family or friends on birthdays, Christmas or other special occasions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Visit the hairdresser at least once every three months | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Have holidays away from home for at least a week every year | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Have a holiday overseas at least every three years | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Have a night out for entertainment or socialising at least once a fortnight | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Have whānau/family or friends over for a meal at least once every few months | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q52 The following are a list of things some people do to help keep costs down. In the last 12 months, have you done any of these things?

| <i>(Please cross one box on each line)</i> | Not at all | A little | A lot |
|--|--------------------------|--------------------------|--------------------------|
| Gone without or cut back on fresh fruit and vegetables to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Continued wearing clothing that was worn out because you couldn't afford a replacement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Put off buying clothes for as long as possible to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stayed in bed longer to save on heating costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Postponed or put off visits to the doctor to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NOT picked up a prescription to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Spent less time on hobbies than you would like to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Gone without or cut back on trips to the shops or other local places to help keep down costs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions are about your material standard of living – the things that money can buy. Your material standard of living does NOT include your capacity to enjoy life. You should NOT take your health into account.

Q53 Generally, how would you rate your material standard of living? *(Please cross one box)*

| High | Fairly high | Medium | Fairly low | Low |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q54 Generally, how satisfied are you with your current material standard of living? *(Please cross one box)*

| Very satisfied | Satisfied | Neither satisfied nor dissatisfied | Dissatisfied | Very dissatisfied |
|--------------------------|--------------------------|---|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q55 How well does your total income meet your everyday needs for such things as accommodation, food, clothing and other necessities? *(Please cross one box)*

| Not enough | Just enough | Enough | More than enough |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Q55 To what degree has the COVID-19 pandemic had a **negative** impact on your economic wellbeing? *(Please cross one box)*

| Not at all | A little bit | Moderately | Quite a bit | Extremely |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

YOUR PERSONAL SITUATION

Q57 What gender do you identify as? *(Please cross one box)*

Tāne/Male

Wāhine/Female

Gender diverse (please specify):

Q58 When were you born?

Day **Month** **1****9** **Year**

Q59 Which one of these statements is true about you? (Please answer for your **current** marriage, partnership or situation). *(Please cross one box)*

I am married.

I am a widow or widower.

I am in a civil union/de facto/partnered relationship.

I am single.

I am divorced or permanently separated from my legal husband or wife.

Q60 Please cross as many options as you need to indicate all the people **who live in the same household as you**. Please also put in the number of people. If you live alone, please cross the option at the top of the table.

| <i>(Please cross all that apply)</i> | Yes | Number of people |
|--------------------------------------|--------------------------|---|
| I live alone | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| My spouse or partner | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| My parent(s) and/or parent(s)-in-law | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| My son(s) and/or daughter(s) | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| My sister(s) and/or brother(s) | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| My mokopuna/grandchild(ren) | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| Other relatives not listed above | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |
| Other people not listed above | <input type="checkbox"/> | <input type="text"/> <input type="text"/> |

Q61 Please rate the quality of the information you received from health and government authorities throughout the pandemic (March 2020 to present) *(Please cross one box)*

| Excellent | Very good | Good | Fair | Poor |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Thank you for your responses to this survey