# Mental Wellbeing and Psychological Distress in the UK During the COVID-19 Pandemic: A Comparison Across Time

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**Abstract**

Objective: This study aimed to assess the trajectory of wellbeing and psychological distress in a UK sample by comparing data taken from the first and second UK lockdowns.

Method: Wellbeing (indexed via the Warwick-Edinburgh Mental Wellbeing Scale) and psychological distress (indexed via the K10) were measured in two surveys in large online samples from Wales, UK. The first survey (n=12,989) took place 11-16 weeks into the first UK lockdown and the second survey (n=10,428) took place 4-11 weeks into the second UK lockdown.

Results: Levels of wellbeing were lower in the second survey compared to the first survey, which were already low compared to pre-pandemic data (2019). Clinically significant levels of psychological distress were found in 40.4% of participants in the second survey, representing a 9.8% increase in prevalence from the first survey. Poorer mental health was found in women, younger adults, and those from deprived areas. The greatest reduction in mental health was found in the youngest age group (16-24 years old).

Discussion: The COVID-19 pandemic and the measures taken to curb its spread continue to negatively impact the wellbeing of the UK population.

## Introduction

Previous research into the trajectory of population wellbeing after acute, chronic, natural, and human-caused disasters shows that the negative impact on population wellbeing is felt for several years, and the process of recovery does not follow a linear path (DeWolfe, 2000; Cream et al., 2021). Traditional models of post-disaster population wellbeing (DeWolfe, 2000) indicate that there is often a sharp decrease in wellbeing immediately after the onset of a disaster (impact phase), followed by a temporary period of increased wellbeing and altruistic optimism as communities pull together (heroic and honeymoon phases). This is typically followed by a time where individuals recognise the reality of the disaster, fatigue sets in, and wellbeing declines (disillusionment phase), before a period where wellbeing is steadily reconstructed over many years (reconstruction phase) (DeWolfe, 2000).

This model aligns with much of the data published on population mental health over the past year. During the initial stages of the COVID-19 pandemic, reports indicated a sharp increase in psychological distress. During April 2020, one month after the World Health Organization (WHO) declared the COVID-19 outbreak a pandemic (WHO, 2020) investigations across the UK (Pierce et al., 2020) reported large increases in rates of clinically significant psychological distress compared to pre-COVID-19 pandemic levels. This increase in psychological distress also appears in UK data taken 3-4 months after the outbreak (Gray et al., 2020). Similar findings during the initial months of the pandemic have been replicated across the world (Xiong et al., 2020). This immediate decline in population wellbeing following the onset of the pandemic follows the “impact phase” trajectory outlined by DeWolfe (2000).

Longitudinal data collected across the UK during the months following the onset

of the COVID-19 pandemic suggested that the prevalence of anxiety and depression in the population had steadily declined (Fancourt et al., 2021) or stabilised (Shevlin et al., 2021). Data from April to October 2020 also indicated that by October 2020, the mental health of the population of UK adults had nearly returned to pre-pandemic levels (Pierce et al., 2021). Research from Australia (Pieh et al., 2021) also demonstrated similar effects, with population wellbeing showing signs of improvement in the months after the onset of the pandemic. This pattern of improving and stabilising mental health in the months after the onset of the pandemic maps on to the "heroic" and "honeymoon" phases (DeWolfe, 2000).

Whilst this research paints an optimistic picture, there are still reasons to be concerned. Firstly, within the UK there was a second surge in COVID-19 cases and deaths, the introduction of COVID-19 variants, and a prolonged period of lockdown restrictions (Senedd Research, 2020). Secondly, as outlined in post-disaster wellbeing models (DeWolfe, 2000), a period of recovery after the initial onset of the disaster is often followed by a time where the reality of the disaster sets in and wellbeing declines (disillusionment phase). Considering this, it may be short-sighted to interpret such improvements in population wellbeing as evidence of a completed recovery path.

Assessing and understanding levels of wellbeing within communities facilitates the development of effective recovery strategies and is an essential component of a successful recovery process (Cream et al., 2021). Whilst a great deal of research examined population mental health during the weeks and months after the onset of the pandemic, less research has focussed on how population mental health has progressed one year later. The current study aimed to understand the mental health and wellbeing trajectory of a UK population by comparing data from the first and second UK

lockdowns[1]. Whilst it is important to focus on the rates of psychopathology in the population, it is also important to acknowledge the growing emphasis in the mental health literature that mental wellness is not simply the absence of psychopathology (Suldo & Shaffer, 2008). Therefore, this research placed focus on both clinical rates of psychological distress in the population, as well as measuring wellbeing, a construct that represents happiness and a sense of purpose which can remain even in the presence of distress (Weich et al., 2011).

Prior research has indicated that factors such as gender, age, and socioeconomic deprivation (Xiong et al., 2020) influence the degree to which individuals were negatively impacted by the pandemic. Therefore, this study will examine the effects of gender, age and socioeconomic deprivation on mental health and wellbeing throughout the COVID-19 pandemic. In line with models of population wellbeing after a disaster, we predicted there would be a decrease in population wellbeing and an increase in psychological distress during the second lockdown period, mirroring the "disillusionment phase" previously described (DeWolfe, 2000). In line with previous COVID-19 mental health research (Xiong et al., 2020), we also predicted the reduction in wellbeing and increase in psychological distress would be increased for women, younger age groups, and individuals living in higher levels of social deprivation.

[1] For the purposes of this report, the "first" lockdown refers to the lockdown implemented across Wales from March 23rd 2020 until July 6th 2020 and the "second" lockdown refers lockdown restrictions implemented across Wales from December 19th 2020 until March 12th 2021 (Senedd Research, 2020). This does not include the "firebreak" lockdown across Wales from October 23rd until November 9th 2020.

## Methods

The methodology for the second survey (January-March 2021) was similar to the first survey (June-July 2020) previously published (Gray et al., 2020). Only the essential differences are presented here.

### *Ethics*

The study was approved by the Swansea University College of Health and Human Sciences Research Ethics Committee (ID: 4908). The project is registered with ISRCTN ref: 21598625. The study protocol is published at: *http://psy.swansea.ac.uk/staff/gray/Protocol_Impact_of_COVID19_on_Mental_Health_July2020.pdf*. All participants provided informed consent.

### *Participants*

*2020 survey – Wave 1*

The first survey, "Wave 1", occurred between the 9th of June 2020 and the 13th of July 2020, 11-16 weeks into the first lockdown in Wales. Participants were required to be aged 16 or over and live in Wales at the time of taking the survey. We aimed to recruit a minimum of 250 participants from each of the 22 Welsh Local Authorities (n = 5,500) to ensure adequate representation of all geographical areas across Wales.

*2021 survey – Wave 2*

The second survey, "Wave 2", occurred between the 18th of January 2021 and the 7th of March 2021, 4-11 weeks into the second lockdown in Wales (Senedd Research, 2020). Participants were required to be aged 16 or over and live in Wales at the time of taking the survey.

A minimum of 250 participants were recruited from the 22 Local Authorities across Wales with Merthyr Tydfil (n = 176) and Wrexham (n = 180) the only exceptions. In total, 13,333 participants clicked on the survey link. Participants who did

not provide informed consent (n = 23), were under the age of 16 (n = 27) or did not live in Wales at the time of taking the survey (n = 62) did not meet the study's inclusion criteria and were excluded from the study. Of the 13,221 participants that met inclusion criteria for the survey, 2,767 did not complete either the WEMWBS or the K10 and were excluded from further analysis. Analysis of what date were available from these non-completers did not reveal any differences in age or gender from those that completed. Due to the anonymous nature of the research, the reasons for non-completion are not known. Analysis of the time taken to complete the survey found the median completion time was 13.8 mins (829 s: IQR: 653–1103). Individuals who completed the survey in under 4 mins were excluded from the survey (n = 26) as such fast completion times were not commensurate with carefully answering the questions (Gray et al., 2020).

### ***Materials***

The survey for the 2021 sample consisted of four sections. The first section contained an information sheet and an informed consent form. The second section asked for demographic information that included questions on participants' age (16-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+), gender (men vs women) and postcode (used to calculate the deprivation index). The third section included questions relating to wellbeing and psychological distress. The remaining section enquired about current stressors, hopelessness, and resilience (not reported here).

#### *Wellbeing*

Participants' levels of wellbeing (over the past 2 weeks) were assessed via the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Tennant et al., 2007). The WEMWBS is a psychometrically robust scale that has a consistently strong positive relationship with other measures of positive mental health (Tennant et al., 2007).

*Psychological distress*

Participants levels of psychological distress was assessed using the Kessler Distress Scale (K10) (Kessler et al., 2003). The K10 has previously demonstrated a good ability to predict serious mental illness in the general population in studies across the world (Kessler et al., 2003). The traditional K10 asks individuals to rate their distress levels over the past 30 days, however this was amended in the current study to the past 2 weeks to match the period of the WEMWBS.

*Welsh Index of Multiple Deprivation*

The Welsh Index of Multiple Deprivation (WIMD) is an index produced by the Welsh Government (Statistics for Wales, 2019) that ranks the relative deprivation for 1,909 areas of Wales (1 = most deprived, 1,909 = least deprived), with each area containing an average of 1,600 people. It defines deprivation as "the lack of access to opportunities and resources which we might expect in our society" (Statistics for Wales, 2019). Participants' post codes were used to calculate the deprivation index. Participant's deprivation ranks were split into approximately equal quintiles using the boundaries described in Gray et al (2020).

***Procedure***

Both surveys were administered online (Qualtrics software, Version January 2021, Provo, UT, USA, Copyright © 2020Version) for the vast majority of participants (>99.5 %) and was available in both English and Welsh language versions. To access individuals in hard-to-reach sectors of the population without access to the internet, a dedicated telephone line was advertised across Wales and individuals could request a paper-based survey. To access both surveys, participants clicked on the survey URL. Initially participants were asked to provide informed consent and then proceeded to complete the survey.

### *Data analysis*

Statistical analyses were performed using the SPSS version 25 package. To analyse the differences in population wellbeing (WEMWBS) and psychological distress (K10), an independent sample *t*-test compared the mean wellbeing scores between the Wave 1 and Wave 2 samples. To examine the influence of demographic factors (gender, age, deprivation) on wellbeing, we conducted a series of Factorial ANOVAs. For our main analysis we also attempted to correct our estimates based on our sample to the main population of Wales (see data in Table 1). Data were weighted based on Local Authority, gender, and age categories.

A cut-off of 25 on the K10 was used to categorize participants into a moderate to severe psychological distress group (K10 ≥25) or a low to mild psychological distress group (K10 ≤24). Past research using 25 as a cut off score for the K10 has demonstrated that individuals scoring above 25 on the K10 have a 69.4% chance of meeting the criteria for a DSM-IV mental disorder in the past year (Andrews & Slade, 2001). We used a series of binary logistic regression analyses to examine: 1) the association between time and prevalence of moderate to severe psychological distress and, 2) the influence the demographic variables of gender, age, and area of deprivation on mental health in both surveys (expressed via the odds ratio in the regression analysis), and 3) whether these variables moderated the change in prevalence over time.

## Results

### *Sample characteristics*

Our final sample consisted of 12,989 participants in the Wave 1 survey and 10,428 participants in the Wave 2 survey. Not all participants completed all measures and the number of participants included in each analysis are described below. We were

unable to identify the number of participants that completed both waves due to participant anonymity. Participant characteristics are displayed in Table 1. The internal consistency of the WEMWBS (Cronbach $\alpha = 0.94$) and the K10 (Cronbach $\alpha = 0.93$) were both high in the Wave 2 sample.

***Wave 2 survey***

Examination of the data from the Wave 2 survey in isolation showed a similar pattern of results to the Wave 1 survey (see Table 2). Mental wellbeing was lower in women, younger people, and in those from the more deprived areas (all *p*s < .001). This was also reflected in levels of moderate to severe psychological distress (see Table 3) with these being greatest in women, younger people, and those from more deprived areas (all *p*s < .001).

***Comparison of Wave 1 and Wave 2 Surveys: Wellbeing***

Descriptive statistics for the WEMWBS are displayed in Table 2. Participants' wellbeing scores (M = 42.2) were lower during the Wave 2 survey, compared to Wave 1 (M = 44.6), $t(23399) = 17.70$, $p < .001$, representing a 2.4 points reduction or an effect size of $d = 0.23$. It should be noted that this decrease in wellbeing is on top of the detriment of the 6.6 points reduction from 2019 to 2020 (Gray et al., 2020).

Given that our sample(s) did not truly represent the population of Wales, the data were then weighted to compensate for this discrepancy using the data from Local Authority, gender, and age (Statistics for Wales, 2020). For both waves of data, the corrected estimates were higher than the uncorrected estimates (See Table 2). This was mainly accounted for by our sample(s) underrepresentation of men (who had a higher wellbeing score), and Local Authority, with little overall effect of age. However, the pattern of results remained unaffected by these corrections for sampling biases with a small rise in overall levels of wellbeing from Wave 1 to Wave 2.

As the Wave 1 survey took place in the summer months and the Wave 2 survey took place in winter/spring months, there is a chance that seasonality can explain some of the observed decline in mental wellbeing. To investigate the possible effect of seasonality on our results, we examined the database for a similar sample (Office for National Statistics, 2019) taken during 2019. There was a small decrease of around 0.5 points (50.9 to 51.4) from January-February to June-July on the WEMWBS scores, which is roughly a quarter of the difference (of 2.4 points) found in the present study. Hence, it seems unlikely that seasonality effects could fully explain the magnitude of the present findings.

To understand if this decrease in mental wellbeing was influenced by demographic factors, a series of ANOVAs was performed examining each factor in turn. Only the variable age interacted with time of survey, $F(1, 23387) = 4.24$, $p < .001$, $\eta_p^2 = .001$ (see Figure 1). Examination of this interaction showed the greatest reduction from Wave 1 to Wave 2 in mental wellbeing was in the youngest age group (3.5 points, $p < .001$), with those in the oldest group showing the smallest decline.

***Comparison of Wave 1 and Wave 2 Surveys: Psychological Distress***

The K10 was used to define people with significant psychological distress. Overall, 40.4% of the sample were suffering from such distress in Wave 2, compared to 36.8% in Wave 1, an increase of 3.6 percentage points representing a 9.8% increase in overall prevalence, $\chi2(1) = 30.53$, $p < .001$, Nagelkerke $R^2 = .002$. $\beta = 0.15$, SE = 0.03, Wald = 30.5, $p < .001$, Exp(B) = 1.16. As for the analysis of wellbeing scores, we also attempted to account for our sample biases with regard to Local Authority, gender, and age in comparison to the Welsh population statistics (see Table 3). These corrections reduced the overall estimates of psychological distress for both sample waves (mainly

due to the influence of gender), but Wave 2 still had greater levels of distress than Wave 1.

Logistic regressions were used to see if any demographic factors influenced this increase in levels of psychological distress. Descriptive statistics along with the number of participants included in the analysis are displayed in Table 3. Only the variable age interacted with the time of the survey, $\beta = -0.04$, SE = 0.01, Wald = 6.15, $p < .05$, Exp(B) = 1.04. Examination of this interaction showed that levels of moderate to severe psychological distress in the youngest age group had risen from 56.9% to 66.3% (an increase of 9.4 percentage points and a 16.5% increase in prevalence), whereas for the oldest group, rates of psychological distress had risen from 16.4% to 16.7% (an increase of 0.3 percentage points and a 1.8% increase in prevalence).

**Discussion**

The aim of this study was to consider whether levels of population wellbeing and psychological distress had increased or decreased during the second UK lockdown (January-March 2021) compared to the first lockdown (June-July 2020). The results show that mental wellbeing has declined further between these sampling points, on top of the sizeable reduction in wellbeing observed between 2019 to 2020 (Gray et al., 2020). There was also a concomitant increase in those experiencing psychological distress, with 40.4% of the Wave 2 sample reporting moderate to severe levels of psychological distress (17.7% experiencing moderate distress and 22.7% experiencing severe distress).

The Wave 2 survey shows poorer mental health in women, younger people, and those from more deprived areas. This replicates the pattern of results found in Wave 1 from a sample obtained in the same manner (Gray et al., 2020) and in previous studies earlier in the pandemic (Xiong et al., 2020). Of most note is that the decrease in mental

health is greatest in younger people, thus exaggerating the already existing imbalance in mental health for these younger people. Thus, 66.3% of the youngest group sampled (16-24 year olds) were reporting moderate to severe psychological distress compared to 16.7% of the oldest group (75+ years).

Given these findings of a further reduction in mental health during the continuing COVID-19 pandemic it is important to consider studies that have not shown such a decline. The research by Fancourt et al (2021) and Shevlin et al (2021) took place between March and June 2020, prior to the second wave of the COVID-19 pandemic, whereas the present research took place during the height of UK lockdown restrictions between January and March 2021. Hence, such results suggest that the presence of a second period of lockdown may be responsible for the present findings of a decline in mental health. In support of this notion, recent reports from the COVID-19 social study (Fancourt et al., 2021) also indicate that there has been an increase in rates of depression and anxiety since the second period of lockdown restrictions,

The present findings also show that the rate of decline in mental health was greatest for younger people. Whilst research from April to October 2020 indicated that the mental health of young people had recovered prior to the second UK lockdown (Pierce et al., 2021), these findings align with research from the first UK lockdown (Pierce et al., 2020; Gray et al., 2020; Xiong et al., 2020) that found young people's mental health to be especially vulnerable to lockdown restrictions. These findings cannot identify why the younger age groups have been more adversely affected, however there are many potential reasons. Past research has demonstrated that peer relationships in adolescents play an especially important role in protecting against anxiety, depression, and suicidal ideation (Roach, 2018). Therefore, restrictions that limit peer contact are likely to be especially detrimental to younger individuals.

Furthermore, younger age groups have been shown to have lower resilience relative to older age groups (Gooding et al., 2012), and young people have less financial security and employment stability compared to older individuals (Lyons et al., 2018). Whilst more research is needed to understand the causal elements, the finding that younger individuals continue to be more adversely impacted by the pandemic must be considered by those responsible for planning wellbeing support for communities during the pandemic and beyond.

### *Limitations*

The current results must be interpreted while considering several limitations. Participants in both waves of the study were recruited using convenience sampling methods. Whilst this method facilitated the recruitment of a large number of participants, the self-selection bias associated with this methodology means the sample cannot be considered representative of the Welsh population. This sampling method often attracts volunteers who are already interested in the topic and excludes those with difficulty accessing the internet (Pierce et al., 2020). Relative to the demographics of the population of Wales (Office for National Statistics, 2019) the current sample under-represented men, young individuals (aged 16-24) and older individuals (aged 75+). Of note, however, these characteristics were present in both the Wave 1 and Wave 2 samples (see Table 1). Thus, the findings of a further decline (and the moderating effects of age) in mental wellbeing, alongside an increase in psychological distress cannot be attributed to the sampling method. However, perhaps the most notable difference between the Wave 1 and Wave 2 samples is the lower percentages of males, those in younger age groups, and people in more deprived areas in the Wave 2 sample. This may suggest a relative underestimation of psychological distress and reductions in

wellbeing, given that these effects were greatest for women, young people, and areas of deprivation. Despite this, the reduction in wellbeing is similar for both genders.

### *Conclusion*

The present data point to a further decline in the mental health and wellbeing of the Welsh population during the second national lockdown compared to the first, with younger age groups continuing to be more adversely affected by the pandemic. The overall picture aligns with the disaster recovery model proposed by DeWolfe (2000) in that recovery from such disasters is not linear and can take many years. However, it should be noted that the DeWolfe model assumes a single disaster event (such as an earthquake) with relatively limited initial impact time. To our knowledge, there is no developed disaster model for the current form of on-going, and somewhat intermittent, crisis borne of disease. Therefore, continual monitoring of population wellbeing and psychological distress levels, alongside investigations into the causes of decreased mental wellbeing, are required to map mental wellbeing to the available models of crisis and recovery, to evaluate if new models are needed, as well as to inform the development of effective recovery strategies. In line with suggestions from previous research (Xiong et al., 2020; Pierce et al., 2021), post-pandemic recovery programmes must address the increase in mental health and wellbeing difficulties in young people, individuals from deprived areas, and women.

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## Author Contributions

NG, RS, JK and COC formed the study concept. JK, NS and JP created the online survey. All authors contributed towards data collection. JK and RS analysed all project data. JK, RS and NG wrote the manuscript. All authors reviewed and edited the manuscript.

## Disclosure Statement

The authors have no conflicts of interests to declare.

## Data Availability Statement

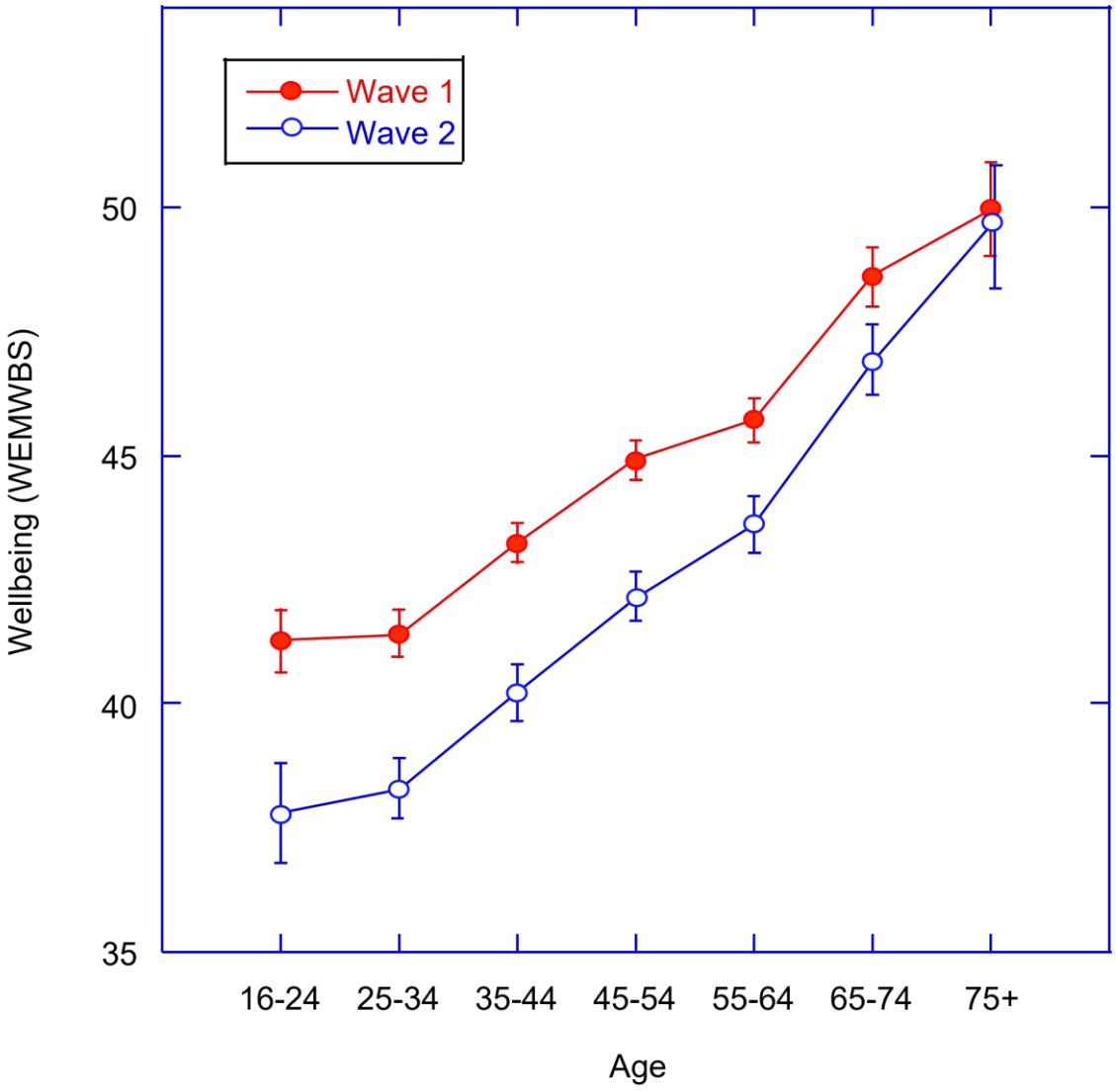
The data associated with this study are available upon reasonable request.

## Funding Statement

This research received no funding.

**Figures**

Figure 1. Mean WEMWBS scores for each age group for the Wave 1 and Wave 2 samples. Error bars represent 95% CI.



**Tables**

Table 1. Demographic characteristics for the Wave 1 and Wave 2 samples and comparison to national statistics (June 2020 - https://statswales.gov.wales/Catalogue/Population-and-Migration/Population/Estimates/

| | | **Welsh Population Statistics (mid 2020)** | **Wave 1 (%)** | **Wave 2 (%)** |
|---|---|---|---|---|
| **Total** | | 3,169,586 (100.0) | 12,989 (100.0) | 10,428 (100.0) |
| **Gender** | Male | 1,563,524 (49.3) | 2,490 (19.2) | 1,460 (14.0) |
| | Female | 1,606,062 (50.7) | 10,391 (80.0) | 7,893 (75.7) |
| | Other | - | 25 (0.2) | 17 (0.2) |
| | Prefer not to say/no response | - | 83 (0.6) | 1,058 (10.1) |
| **Age** | 16-24 | 345,604 (10.9) | 703 (5.4) | 506 (4.9) |
| | 25-34 | 404,786 (12.8) | 1,870 (14.4) | 1,359 (13.0) |
| | 35-44 | 358,803 (11.3) | 2,647 (20.4) | 2,055 (19.7) |
| | 45-54 | 409,425 (12.9) | 3,254 (25.1) | 2,498 (24.0) |
| | 55-64 | 419,648 (13.2) | 2,761 (21.3) | 2,381 (22.8) |
| | 65-74 | 361,841 (11.4) | 1,356 (10.4) | 1,302 (12.5) |

| | | | | |
|---|---|---|---|---|
| | 75+ | 306,749 (9.7) | 398 (3.1) | 327 (3.1) |
| **Ethnicity** | White - any | 96.4 | 96.6 | 97.3 |
| | Asian - any | 1.7 | 1.0 | 0.6 |
| | Black - any | 0.5 | 0.1 | 0.2 |
| | Mixed - any | 0.5 | 0.8 | 0.8 |
| | Other | 0.8 | 0.6 | 0.6 |
| | Prefer not to say/no response | 0.1 | 0.8 | 0.7 |
| **Relationship status** | Single | 28.4 | 14.2 | 13.8 |
| | Married/civil partnership | 45.2 | 54.7 | 56.0 |
| | Co-habiting | - | 14.5 | 13.6 |
| | Partner non-cohabiting | - | 14.2 | 5.2 |
| | Separated | 2.4 | 1.5 | 1.7 |
| | Divorced | 11.8 | 5.0 | 5.1 |
| | Widowed | 12.2 | 3.1 | 3.3 |
| | Other | - | 0.5 | 0.6 |

| | | | | |
|---|---|---|---|---|
| | Prefer not to say/no response | 0.1 | 0.6 | 0.7 |
| **Employment** | Paid employment | 46.3 | 65.7 | 58.6 |
| | Self-employed | | 3.9 | 4.2 |
| | Student | 3.7 | 3.7 | 4.9 |
| | Apprentice | - | 0.2 | 0.1 |
| | Unemployed | 2.1 | 1.1 | 1.0 |
| | Long term sick/disability | 5.5 | 3.2 | 3.8 |
| | Retired | 36.6 | 15.0 | 18.7 |
| | Furloughed | - | 4.4 | 2.9 |
| | Stay at home parent | 4.7 | 1.8 | 2.1 |
| | Full time carer | | 0.3 | 1.6 |
| | Other | 0.8 | 0.0 | 2.9 |
| | Prefer not to say/no response | 0.0 | 0.7 | 0.4 |

Table 2. Mean WEMWBS scores for Wave 1 and Wave 2 samples.

| Sample | | Wave 1 | | Wave 2 | | |
|---|---|---|---|---|---|---|
| | | N | WEMWBS [95% CI] | N | WEMWBS [95% CI] | Decrease from Wave 1 to Wave 2 |
| All | | 12978 | 44.6 [44.4–44.8] | 10423 | 42.2 [42.0–42.4] | 2.4* |
| Corrected for LA, gender and age | | | 46.0 | | 44.5 | 1.5* |
| Gender | Male | 2489 | 46.0 [45.5–46.4] | 1460 | 44.0 [43.4–44.6] | 2.0* |
| | Female | 10381 | 44.2 [44.0–44.4] | 7891 | 41.9 [41.6–42.1] | 2.4* |
| Age | 16-24 | 701 | 41.3 [40.6–42.0] | 506 | 37.8 [37.0–38.6] | 3.5* |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 25-34 | 1870 | 41.4 [41.0–41.8] | 1359 | 38.3 [37.8–38.8] | 3.1* |
| | 35-44 | 2643 | 43.2 [42.9–43.6] | 2055 | 40.2 [39.8–40.6] | 3.0 * |
| | 45-54 | 3254 | 44.9 [44.6–45.3] | 2497 | 42.1 [41.8–42.5] | 2.8* |
| | 55-64 | 2759 | 45.7 [45.3–46.1] | 2380 | 43.6 [43.2–44.0] | 2.1* |
| | 65-74 | 1354 | 48.6 [48.1–49.1] | 1301 | 46.9 [46.3–47.5] | 1.7* |
| | 75+ | 397 | 49.9 [49.0–50.9] | 325 | 49.6 [48.4–50.8] | 0.3 |
| WIMD Rank | 1 (most deprived) | 1992 | 43.5 [43.0–43.9] | 1575 | 40.7 [40.2 – 41.2] | 2.8* |
| | 2 | 1997 | 44.7 [44.2–45.1] | 1515 | 42.5 [42.0–43.0] | 2.2* |
| | 3 | 2013 | 45.2 [44.8–45.7] | 1480 | 43.4 [42.9–43.9] | 1.8* |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 4 | 2004 | 45.4 | 1531 | 43.3 | 2.1* |
| | | | [45.0–45.9] | | [42.8–43.8] | |
| | 5 (least deprived) | 2005 | 46.3 | 1654 | 44.2 | 2.1* |
| | | | [45.9–46.7] | | [43.7–44.7] | |

*$p < .001$. LA stands for Local Authority.

Table 3. Prevalence of low to mild psychological distress (K10 ≤ 24) and moderate to severe psychological distress (K10 ≥ 25) in the Wave 1 and Wave 2 samples.

| | | Wave 1 | | | | Wave 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | N | K10 ≤ 24 (%) | K10 ≥ 25 (%) | Odds ratio | N | K10 ≤ 24 (%) | K10 ≥ 25 (%) | Odds ratio |
| Overall | | 12760 | 63.2 | 36.8 | - | 10323 | 59.6 | 40.4 | - |
| Corrected for LA, gender and age | | | 64.0 | 36.0 | | | 62.8 | 37.2 | |
| Gender | Male | 2449 | 70.1 | 29.9 | **1.00** | 1439 | 65.2 | 34.8 | **1.00** |
| | Female | 10208 | 61.5 | 38.5 | 1.47 | 7821 | 58.5 | 41.5 | 1.33 |
| Age | 16-24 | 685 | 43.1 | 56.9 | 6.67 | 499 | 33.7 | 66.3 | 10.00 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 25-34 | 1838 | 47.8 | 52.2 | 5.52 | 1341 | 42.8 | 57.2 | 6.76 |
| | 35-44 | 2582 | 59.9 | 40.1 | 3.38 | 2037 | 53.9 | 46.1 | 4.33 |
| | 45-54 | 3203 | 66.1 | 33.9 | 2.59 | 2476 | 59.9 | 40.1 | 3.38 |
| | 55-64 | 2721 | 68.0 | 32.0 | 2.38 | 2358 | 67.4 | 32.6 | 2.44 |
| | 65-74 | 1341 | 78.2 | 21.8 | 1.41 | 1288 | 75.5 | 24.5 | 1.64 |
| | 75+ | 390 | 83.6 | 16.4 | **1.00** | 324 | 83.3 | 16.7 | **1.00** |
| WIMD | 1 (most deprived) | 1966 | 59.2 | 40.8 | 1.63 | 1561 | 52.0 | 48.0 | 2.18 |
| | 2 | 1964 | 64.2 | 35.8 | 1.32 | 1505 | 60.1 | 39.9 | 1.56 |
| | 3 | 1981 | 64.4 | 35.6 | 1.30 | 1470 | 64.4 | 35.6 | 1.30 |
| | 4 | 1982 | 65.2 | 34.8 | 1.25 | 1520 | 65.8 | 34.2 | 1.22 |
| | 5 (least deprived) | 1978 | 72.1 | 27.9 | **1.00** | 1644 | 67.8 | 32.2 | **1.00** |

LA stand for Local Authority