



**Utrecht University**

**COVID-19 Pandemic: Differences in Stress and Resilience Levels based on Gender and Sexual Orientation.**

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## **Preface**

The basis for this research originated predominantly from my desire for activism and to try incorporate that into my academic life. Although the world is entrenched in the 21<sup>st</sup> century, various countries still criminalise and segregate members of the LGBTQ+ community, for which I openly rebel against. From working with asylum seekers in my internship who for some, are a part of the LGBTQ+ community. They are subjected to harrowing accounts of violence because of their identify which still fuels my activism today, alongside the support from many people in my life.

I would like to firstly thank my first supervisor Dr. Esther van Duin for her superlative guidance, chats and endless conversations. Along with Dr. Jeroen Knipscheer for his astonishing feedback. I would like to thank my parents Andrew and Sharon for always showing their love and support for me in everything I do. My sister Nicola, brother-in-law Darren, brother Raymond and my six amazing nieces; Millie, Lily Sue, Bonnie, Kiva, Elsie and Nancie for their unbreakable support, love and encouragement. My partner Brent for his never-ending encouragement, support and patronage. My friend Liz, for her endless support, advice and friendship. I also want to thank the MSc Clinical Psychology course coordinators and lecturers at Utrecht University for making this difficult year that little bit easier. To the most amazing thesis group anyone could ask for with Sarah D, Sarah S, Karimah and Julius, thank you all for your advice, friendship and motivating conversations.

I want to finally acknowledge the LGBTQ+ community for being who you are. Anytime someone embraces their identity, the world become a better and more colourful place for everyone.

### **Abstract**

Generous escalations of scholarly attention surrounding the LGBTQ+ community throughout the COVID-19 pandemic were fathomed (Salerno et al., 2020). Contrastingly, low investigations of their stress and resilience levels during COVID-19 inspired empirical responsiveness (UN News, 2020). Hence, this study explored the differences in stress and resilience among populations based on gender and sexual orientation. With a cross-cultural, quantitative, multifactorial, between-groups experimental design, this study recruited ( $N=776$ ) participants from various countries, including Ireland, The United States, The Netherlands, and Germany. This study generated significant results, reported that bisexuals have higher stress levels and lower resilience levels than their homosexual and heterosexual counterparts. Whereas concerning gender, transgender individuals reported higher stress levels and lower resilience levels than their cisgender counterparts. These results also gave rise to significant interacting effects between gender and sexual orientation on resilience and stress, which suggested that an individuals' sexuality may influence stress and resilience levels. This study's results advanced opportunities for future research, theoretical and practical implications such as; incorporating ethnicity as a variable while further recommendations are delineated.

*Keywords:* COVID-19, stress, resilience, gay, lesbian, bisexual, transgender, LGBTQ+.

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## **1 Introduction**

As the SARS-CoV-2 virus or COVID-19 establishes its presence in worldwide communities, so does empirical research in how societies worldwide have changed, adapted, and dealt with stressors associated with COVID-19 (Gallagher et al., 2020; Rajkumar, 2020). One area receiving a liberal escalation in scholarly attention is how lesbian, gay, bisexual, transgender and queer or questioning (LGBTQ+) communities adapt to COVID-19 (Salerno et al., 2020). However, consideration for their stress and resilience levels during COVID-19 may have gone unheeded (Bell et al., 2020; UN News, 2020).

### **1.1 COVID-19**

As countries try to adapt to COVID-19, researchers have been investigating the mechanisms of COVID-19 and how it physiologically affects humans, deducing that symptoms of COVID-19 are primarily respiratory-related, including a cough, sore throat and fatigue (Pan et al., 2020; Whittaker et al., 2021). Furthermore, vaccines have been implemented worldwide to restrain rates of COVID-related infections (Cavaleri et al., 2021). Since March 2021, over 550 million vaccines were administered worldwide from pharmaceutical manufacturers, including Pfizer/BioNTech, AstraZeneca/Oxford and Moderna (Holder, 2021). However, global disparities concerning the vaccine rollout have become increasingly accentuated in some countries (Wouters et al., 2021). Furthermore, additional explorations have considered how COVID-19-related lockdowns have affected various communities worldwide (World Health Organization [WHO], 2020). Potential bi-products of the lockdowns include global economic impairment, escalation of unemployment and individual aspects, such as increased fear of infection or fear of infection-related death (Brammer & Clarke, 2020; Gupta et al., 2021; Singh et al., 2020). Researchers are scrutinising levels of stress and resilience within various populations due to COVID-19 (Barthélemy et al., 2021; Vinkers et al., 2020).

### **1.2 Stress**

The concept of stress has been well discerned among researchers as many definitions have been ascertained (Lund, 2020; McConnell et al., 2018; Robinson, 2018). Lazarus and Launier's (1978) classification of stress suggests that stress is the product of a transaction between the environment and the individual. However, subsequent research insinuates that this definition fails to account for specific social contexts, which may be crucial to include when incorporating COVID-19 (Lazarus, 2006). Furthermore, various theoretical models may aid researchers in comprehending stress further. For example, Cannon's (1932) Fight or Flight model suggests that when an incoming stressor is perceived, the sympathetic nervous system

prepares the body to either fight or flee, resulting in physical arousal. This causes an array of bodily sensations, such as increased breathing and heart rate, pupil dilation, and increased blood flow to the muscles (Milosevic & McCabe, 2015). However, some studies imply a lack of consideration for individualistic traits such as resilience levels, while other researchers have further expanded the model (Bracha et al., 2004). Subsequently, Selye (1956) evolved the model, incorporating an initial ‘freeze’ stage, facilitating an appraisal of the stressor to respond appropriately. Furthermore, the concept of stress has been scrutinised concerning its manifestations and how stress can be perpetuated and precipitated (Yaribeygi et al., 2017).

For instance, individualities such as resilience, self-esteem, and life satisfaction may be associated as precipitating and perpetuating stress factors (Galanakis et al., 2016). Additionally, studies articulate high-stress levels may result in low energy, insomnia, frequent infections, depression, and anxiety (Mariotti, 2015; Yaribeygi et al., 2017). For example, the LGBTQ+ community may be at an increased risk of psychological, emotional, and physical ailments when compared to their heterosexual counterparts (Ginicola et al., 2017; Russell & Fish, 2016). These studies may support the Minority Stress theory, which suggests sexual minorities encounter chronic stressors related to their identities, such as prejudice, discrimination, and victimisation (Meyer, 2003). Whereas concerning COVID-19, it is suggested the LGBTQ+ community may experience higher levels of stress due to their pre-COVID chronic stressors in amalgamation with additional stressors from the pandemic (Salerno et al., 2020). For instance, Gato et al. (2021) investigated how the COVID-19 pandemic has affected the psychosocial status of the LGBTQ+ community, who were confined with their parents across six countries, reporting elevated levels of anxiety, which may be precipitated by stress, among those who are not working, and most who live outside Europe. Additionally, other studies reported higher stress levels among bisexuals and transgender individuals than homosexuals and cisgender individuals (Chan et al., 2020; Olson et al., 2015; Valentine & Shipherd, 2018; Zavala & Waters, 2020). Furthermore, Watson and Tatnell (2019) reported from a sample of Australian LGBTQ+ individuals that high-stress levels were correlated with low levels of resilience, suggesting a relationship between stress and resilience (García-León et al., 2019). Subsequently, due to COVID-19, resilience has entertained an increase in empirical investigations (Killgore et al., 2020).

### **1.3 Resilience**

The concept of resilience has been widely substantiated among researchers and is defined as the ability to emotionally and mentally adapt and overcome difficulties or significant

events that have caused stress (Westphal & Bonanno, 2007). Various theories and models have been conjectured to aid comprehension, including Resilience theory, which suggests that how an individual deals with adversity is more fundamental than the composition of the adversity itself (van Breda, 2018). Furthermore, theoretical models help explain resilience further, such as the Compensatory model, which portrays resilience as a neutralising component for risk exposure, suggesting the compensatory factor may act as a precipitant to the outcome (Luthar, 2006; Zimmerman, 2013). Moreover, the Protective factor model argues that protective factors may directly interact with the risk factor and reduce the likelihood of a detrimental outcome (Ledesma, 2014). Similarly, the Challenge model conveys a skewed relationship between the risk factor and the outcome, suggesting an enhancement in adaptation when the individual is reacquainted with the risk factor (Ledesma, 2014). Additionally, the Community Resilience concept suggests individual development and health may be an underlying facet for community resilience, signifying an increase in community resilience and strength, which may be considered alongside COVID-19 (Buikstra et al., 2010; Koliou et al., 2020).

When considering the LGBTQ+ community, studies convey that the LGBTQ+ community can generate high levels of community resilience and offer a sense of belonging to individuals within the community (Kwon, 2013). Furthermore, Shilo et al. (2014) note that factors such as familial and community support, community connectedness, and a stable relationship contributed to high levels of resilience. In contrast, elements such as a negative 'coming-out' experience, rejection or poor social support can adversely contribute to resilience levels (Schmitz & Tyler, 2018). Concerning COVID-19, resilience has been determined as a substantial component to subjugate COVID-19-related stressors (Nitschke et al., 2020). The LGBTQ+ community has evolved methods to regulate their stress during COVID-19, as studies underline a surge of online support such as chat rooms and texting services accessible to the community (Fish et al., 2020). However, cohorts of the LGBTQ+ community are limited in accessing these mechanisms, specifically with children or young adults who may be confined at home with non-accepting parents (Silliman & Bosk, 2020). Additionally, as resilience is defined as a process, providing a suitable environment may increase resilience (Curtis & Cicchetti, 2003). For instance, Fenwick-Smith et al. (2018) systemically reviewed primary school-based mental health promotion programmes and suggested that resilience-based programmes positively impacted the students' coping skills when faced with daily stressors. Therefore, cross-national between-subjects investigations may be beneficial in identifying

potential differences in stress and resilience levels within the LGBTQ+ community and how it may compare to a heterosexual and cisgender cohort.

#### **1.4 The Current Study**

While vaccinations are administered, it is undeniable that COVID-19 has decimated parts of the world, such as global economies and individual livelihoods (Rajkumar, 2020). As COVID-19-related research emerges in how various communities have dealt with pandemic-related stressors, other literature supports the notion that diverse worldwide communities may be disadvantaged, such as the LGBTQ+ community (Gonzales et al., 2020; UN News, 2020). For instance, Hoyt et al. (2021) reported how high-stress levels among US college students had become a commonality due to COVID-19 while neglecting to incorporate resilience levels, as previous studies suggest high resilience may contest stress (Nitschke et al., 2020). Therefore, it may be crucial to empirically consider how the LGBTQ+ community compares their stress and resilience levels to their heterosexual and cisgender counterparts as investigations may highlight notable differences that may support the Minority Stress theory.

Henceforth, this study investigates significant differences and associations between stress and resilience among LGBTQ+ communities with their heterosexual and cisgender counterparts during COVID-19. This study's main research question proposes investigating if stress or resilience levels differ based on gender or sexual orientation during COVID-19 and if an association exists between stress and resilience. Consequently, this study will statistically evaluate seven hypotheses. The first three hypotheses will report a significant interaction (H1) and differences of main effects based on gender (H2) and sexual orientation (H3) regarding stress, predicting explicitly that females and the LGBTQ+ community will have higher stress levels than heterosexual males (Taylor et al., 2018). The subsequent three hypotheses will convey a significant interaction (H4) and differences of main effects based on gender (H5) and sexual orientation (H6) regarding resilience, predicting explicitly that females and the LGBTQ+ community will have lower resilience than their heterosexual male counterparts (Erdogan et al., 2014). The final hypothesis (H7) will substantiate previous literature and report a significant negative relationship between stress and resilience (García-León et al., 2019).

## 2 Methods

### 2.1 Design

This study employed a quantitative, experimental, cross-cultural, multifactorial, between subjects' design to investigate statistical differences between levels of stress and resilience. The cross-cultural element was established after data collection as many countries participated. Data collection occurred from November to December 2020 while Table 1 illustrates the different independent and dependent variables within this study.

**Table 1**

*Independent and dependent variables with their respective subgroups and measurements.*

| Variables                 |                      |                                     |
|---------------------------|----------------------|-------------------------------------|
| Independent Variables     |                      |                                     |
| Name of Variable          | Subgroup/Measurement |                                     |
| IV1                       | Gender*              | Male                                |
|                           |                      | Female                              |
|                           |                      | Transgender / Gender non-conforming |
|                           |                      | Other                               |
| IV2                       | Sexual Orientation*  | Straight / Heterosexual             |
|                           |                      | Homosexual / Gay / Lesbian          |
|                           |                      | Bisexual                            |
|                           |                      | Other                               |
| Dependent Variables (DVs) |                      |                                     |
| DV1                       | Stress               | Perceived Stress Scale (PSS)        |
| DV2                       | Resilience           | Basic Resilience Scale (BRS)        |

*Note.* \* A 'Prefer not to state' option was added to this variable.

### 2.2 Participants

Snowball, randomised and purposive sampling was exploited to recruit 1,209 participants, where the data of 776 was analysed from a total of 39 countries. Recruitment was conducted online through social media, while specific European LGBTQ+ organisations were emailed. Exclusion criteria concerned data where the participant did not fully consent, was under 18 years of age or provided incomplete or ambiguous answers.

### 2.3 Materials

Numerous social media posts were uploaded onto Facebook, Reddit, Twitter, Instagram and LinkedIn. A generic template was exercised for the social media posts along with a promotional flyer (Appendix A), available in English, Dutch (Appendix B), German (Appendix C) and Irish (Appendix D). Additional flyers were developed for specific audiences (Appendix

E-G), while a generic email (Appendix H) was developed to contact various organisations. Each post and email contained a link and a quick response (QR) code that directed the user towards the online survey.

Initially, the information sheet (Appendix I) is presented, followed by the consent form (Appendix J) and the demographical questions (Appendix K). The demographical questions are completed after consent is provided. The participants were presented with the Perceived Stress Scale (Appendix L) and the Basic Resilience Scale (Appendix M). Additional questionnaires were offered until concluding with the debrief (Appendix N). Conclusively, a free thirty-minute mindfulness session was offered as gratuity (Appendix O).

### **2.3.1 Stress: Perceived Stress Scale (PSS)**

Cohen et al. (1983) proffered the Perceived Stress Scale (PSS), measuring perceived stress. The questionnaire contains ten Likert style questions answered on a 0 – 4-point range, where zero is equal to “*Never*“, and four is equal to “*Very often*“. Each question commences with a statement stating “*In the last month,*” followed by the question. Questions 1, 2, 6, 9 and 10 are summed, whereas questions 4, 5, 7, and 8 are reversely scored (Cohen & Williamson, 1988). All questions ask about specific components of an individual’s perception relating to control, ability to cope, current thoughts, and feelings (e.g. *In the last month, how often have you felt nervous and “stressed “; in the last month, how often have you felt that you were on top of things?*). Finalised scores range from 0-40, where high values indicate high levels of perceived stress, while the scale has been exploited among researchers reporting strong reliabilities (Nordin & Nordin, 2013). Cronbach alpha levels were computed for overall perceived stress ranging from ( $\alpha = .72$ ) to ( $\alpha = .89$ ) (Khalili et al., 2017; Roberti et al., 2006). This study reported a high Cronbach alpha level ( $\alpha = .913$ ).

### **2.3.2 Resilience: Basic Resilience Scale (BRS)**

The Basic Resilience Scale (BRS) is a 6-item questionnaire measuring overall perception of resilience (Smith et al., 2008). The items are answered on a 1 – 5 Likert style format where one refers to “*Strongly Disagree*”, and five refers to “*Strongly Agree*”. The questions relate to internal coping strengths and strategies ( e.g., *it is hard for me to snap back when something bad happens; I have a hard time making it through stressful events.*). Finalised scores are determined by summing up questions 1, 3 and 5, where 2, 4 and 6 are reversed, then dividing by the total number of questions. The concluding figure will be within a range of 1– 5, where a score in the 1.00-2.99 interval represents low resilience. An interval of 3.00-4.30, is

considered typical resilience, while a score residing within the interval between 4.31-5.00, is considered high resilience (Smith et al., 2013, p.177). Additionally, the authors reported that a score of 3.5 is commonly conveyed. High reliability has been garnered for the BRS from studies, reporting a Cronbach alpha level  $\alpha = .80$ , suggesting high internal consistency (Salisu & Hashim, 2017; Soer et al., 2019). This study reported a similar level ( $\alpha = .857$ ).

## **2.4 Procedure**

Following ethical approval from the Ethics Review Board of the Faculty of Social and Behavioural Sciences through the FERB application process (Appendix P), infographic flyers were uploaded onto numerous social media platforms (i.e. Facebook, Twitter, Reddit) and SONA database for Utrecht University students. Subsequently, participants could choose to scan the QR code in the infographic flyer or follow a social media post link, where they are directed to the online survey developed using Qualtrics. Initiating with the information sheet, providing information about the study's parameters with the participants' legal rights they may exercise. The participants then proceeded to the consent form to tick the appropriate boxes, providing consent. Subsequently, the demographic questions were presented, followed by the psychometric questionnaires, until participants were debriefed and compensated for voluntarily participating and contributing to the scientific community with an offer of a free 30-minute mindfulness session.

## **2.5 Statistical Analyses**

Two 2-way Analysis of Variance (ANOVAs) were completed to investigate the statistical differences in stress and resilience levels based on the participants' gender and sexual orientation. Additionally, a Pearson's correlation was computed to investigate if a significant relationship exists between stress and resilience levels. The inferential statistics were calculated using the International Business Machines Corporation's (IBM) Statistical Package for the Social Sciences Version 26.0 (SPSS). A significance level of .05, with confidence intervals at 95%, was established for all statistical tests.

Initially, descriptive and frequency statistics were formulated, identifying  $n$  values and assumptions. After transformation, this was met for stress regarding the assumptions of normal distribution, whereas violated for resilience. However, despite violated assumptions, the inferential statistics were computed due to the large sample size. Assumptions of linearity were met as illustrated in Figure 1, whereas homoscedasticity was violated due to unequal sample sizes across subgroups. Independence of observations and an absence of outliers were met.

Assumptions of linearity and homoscedasticity were not met; however, the assumptions of independence of observations and absence of outliers were met as the two-way ANOVA is a robust statistic.

### 3 Results

#### 3.1 Descriptive Statistics

A total of 1,209 participants were recruited for this study; however, the data of ( $N=776$ , 64.19%) participants were included for data analysis. Exclusion criteria were exercised as 433 did not fully complete the online survey, were underage, did not fully consent, or provided inappropriate answers to various questions. From the gathered data, participants originated primarily from The Netherlands ( $n = 177$ , 22.81%), the United States ( $n = 114$ , 14.69%), Germany ( $n = 123$ , 15.85%), the Republic of Ireland ( $n = 114$ , 14.69%) and other counties in Europe, Eastern Asia and Oceania. The data was predominantly completed by white ( $n = 675$ , 87%), heterosexual ( $n = 465$ , 59.92%) cis-males ( $n = 399$ , 51.42) with high education ( $n = 427$ , 55.03) and completed the research survey in English ( $n = 481$ , 61.98%). The mean age of the data set across all variables was 30.24 ( $SD = 11.52$ ). The average age of 30 ( $SD = 11.00$ ) was computed for males, whereas the mean age for females was slightly older at 31 ( $SD = 12.00$ ). Transgender participants computed a mean age of 27 ( $SD = 10.00$ ). Further demographical information can be discerned from Table 2, whereas specific average, standard deviation and  $n$  values can be exploited from Tables 3 and Table 4.

**Table 2**

*Tabulation of other descriptive statistics within this study.*

| Language                       | $n$ | %     |
|--------------------------------|-----|-------|
| English                        | 481 | 61.98 |
| German                         | 146 | 18.81 |
| Dutch                          | 149 | 19.20 |
| <hr/>                          |     |       |
| Age Group                      |     |       |
| 18-24                          | 304 | 39.18 |
| 25-34                          | 256 | 32.99 |
| 35-44                          | 95  | 12.24 |
| ≥45                            | 104 | 13.40 |
| P/DNS <sup>a</sup>             | 16  | 2.06  |
| <hr/>                          |     |       |
| Gender                         |     |       |
| Male                           | 399 | 51.42 |
| Female                         | 310 | 39.95 |
| Transgender / GNC <sup>b</sup> | 57  | 7.35  |
| Other                          | 6   | .773  |

|   |     |       |
|---|-----|-------|
| P/DNS <sup>a</sup>  | 4   | .515  |
| <b>Ethnicity</b>  |     |       |
| White (Caucasian)   | 675 | 87    |
| Black (African American, Black African, Black Caribbean, etc.)        | 4   | .5    |
| Mixed Background  | 36  | 4.6   |
| Asian (Middle Eastern, Eastern Russian, Chinese, Korean, Philippine). | 29  | 3.7   |
| Other   | 24  | 3.1   |
| P/DNS <sup>a</sup>  | 7   | .9    |
| <b>Sexual Orientation</b>   |     |       |
| Heterosexual / Straight   | 465 | 59.92 |
| Homosexual / Gay / Lesbian  | 145 | 18.69 |
| Bisexual  | 106 | 13.66 |
| Other   | 39  | 5.03  |
| P/DNS <sup>a</sup>  | 19  | 2.45  |
| <b>Education Background</b>   |     |       |
| Secondary Education   | 125 | 16.11 |
| Post-secondary Education  | 128 | 16.49 |
| Higher Education (Bachelor's, Master's, PhD, MD)                      | 427 | 55.03 |
| Other   | 11  | 1.42  |
| P/DNS <sup>a</sup>  | 2   | .258  |

*Note.* <sup>a</sup> Preferred/did not state. <sup>b</sup> Gender non-conforming.

**Table 3.**

*Tabulation of mean, standard deviation (SD) and n values of each independent variable and their subgroups on Stress.*

| Gender | Sexual Orientation      | Mean  | SD    | n   |
|--------|-------------------------|-------|-------|-----|
| Male   | Heterosexual / Straight | 15.86 | 7.45  | 248 |
|        | Homosexual/Gay/Lesbian  | 19.41 | 7.92  | 101 |
|        | Bisexual                | 18.80 | 10.06 | 30  |
|        | Other                   | 25.33 | 8.40  | 9   |
|        | Prefer not to state     | 12.90 | 8.39  | 10  |
|        | Total                   | 17.12 | 8.08  | 398 |
| Female | Heterosexual / Straight | 18.67 | 7.34  | 210 |

|  |                         |       |      |     |
|--|-------------------------|-------|------|-----|
|  | Homosexual/Gay/Lesbian  | 23.18 | 7.02 | 22  |
|  | Bisexual                | 26.00 | 6.46 | 57  |
|  | Other                   | 21.67 | 9.63 | 12  |
|  | Prefer not to state     | 20.50 | 3.46 | 8   |
|  | Total                   | 20.50 | 7.71 | 309 |
| Transgender / Gender non-conforming / Different from birth | Heterosexual / Straight | 26.80 | 3.56 | 5   |
|  | Homosexual/Gay/Lesbian  | 22.67 | 9.22 | 21  |
|  | Bisexual                | 25.41 | 6.49 | 17  |
|  | Other                   | 25.50 | 5.96 | 14  |
|  | Total                   | 24.54 | 7.33 | 57  |
| Other  | Homosexual/Gay/Lesbian  | 35.00 | .    | 1   |
|  | Bisexual                | 17.00 | .    | 1   |
|  | Other                   | 21.75 | 2.63 | 4   |
|  | Total                   | 23.17 | 6.43 | 6   |
| Prefer not to state  | Heterosexual / Straight | 25.50 | 2.12 | 2   |
|  | Bisexual                | 16.00 | .    | 1   |
|  | Prefer not to state     | 30.00 | .    | 1   |
|  | Total                   | 24.25 | 6.02 | 4   |
| Total  | Heterosexual / Straight | 17.29 | 7.56 | 465 |
|  | Homosexual/Gay/Lesbian  | 20.56 | 8.16 | 145 |
|  | Bisexual                | 23.69 | 8.24 | 106 |
|  | Other                   | 23.90 | 7.61 | 39  |
|  | Prefer not to state     | 17.00 | 8.00 | 19  |
|  | Total                   | 19.10 | 8.17 | 774 |

Note. CI 95%,  $\alpha = 0.05$  significance.

**Table 4.**

*Tabulation of mean, standard deviation (SD) and n values of each independent variable and their subgroups on Resilience.*

| Gender | Sexual Orientation         | Mean | SD   | n   |
|--------|----------------------------|------|------|-----|
| Male   | Heterosexual / Straight    | 3.56 | .658 | 248 |
|        | Homosexual / Gay / Lesbian | 3.35 | .785 | 101 |

|  |                            |      |      |     |
|--|----------------------------|------|------|-----|
|  | Bisexual                   | 3.26 | 1.01 | 30  |
|  | Other                      | 2.72 | 1.03 | 9   |
|  | Prefer not to state        | 4.18 | .894 | 10  |
|  | Total                      | 3.48 | .759 | 398 |
| Female   | Heterosexual / Straight    | 3.21 | .721 | 210 |
|  | Homosexual / Gay / Lesbian | 2.84 | .872 | 22  |
|  | Bisexual                   | 2.93 | .771 | 57  |
|  | Other                      | 2.78 | .869 | 12  |
|  | Prefer not to state        | 2.79 | .853 | 8   |
|  | Total                      | 3.10 | .762 | 309 |
| Transgender / Gender non-<br>conforming / Different from birth | Heterosexual / Straight    | 2.53 | .361 | 5   |
|  | Homosexual / Gay / Lesbian | 2.63 | .963 | 21  |
|  | Bisexual                   | 2.86 | .796 | 17  |
|  | Other                      | 2.91 | .854 | 14  |
|  | Total                      | 2.76 | .843 | 57  |
| Other  | Homosexual / Gay / Lesbian | 2.17 | .    | 1   |
|  | Bisexual                   | 3.50 | .    | 1   |
|  | Other                      | 3.54 | .614 | 4   |
|  | Total                      | 3.31 | .734 | 6   |
| Prefer not to state  | Heterosexual / Straight    | 2.92 | .118 | 2   |
|  | Bisexual                   | 2.67 | .    | 1   |
|  | Prefer not to state        | 3.34 | .    | 1   |
|  | Total                      | 2.96 | .285 | 4   |
| Total  | Heterosexual / Straight    | 3.39 | .711 | 465 |
|  | Homosexual / Gay / Lesbian | 3.16 | .869 | 145 |
|  | Bisexual                   | 3.02 | .849 | 106 |
|  | Other                      | 2.89 | .881 | 39  |
|  | Prefer not to state        | 3.55 | 1.08 | 19  |
|  | Total                      | 3.27 | .798 | 774 |

Note. CI 95%,  $\alpha = 0.05$  significance.

## 3.2 Inferential Statistics

### 3.2.1 Statistical Analyses

#### 3.2.1.1 Differences in Main Effects of Sexual Orientation and Gender on Stress.

Concerning the first three hypotheses, a statistically significant interaction between gender and sexual orientation on levels of stress was computed,  $F(11, 754) = 2.206, p = .013, \eta_p^2 = .031$ . This result suggests that both gender and sexual orientation have a dual interacting effect on stress levels. For instance, Table 3 illustrates that female and transgender bisexuals have higher stress than their male counterparts. Additionally, a statistically significant main effects was generated for gender on stress levels,  $F(4, 754) = 5.879, p < .001, \eta_p^2 = .030$ . However, no statistical significance was computed for sexual orientation on stress levels,  $F(4, 754) = 1.136, p = .338, \text{observed power} = .359$ . Therefore, hypotheses one and two are accepted.

#### 3.2.1.2 Post Hoc Analyses for Differences between Sexual Orientation and Gender on Stress.

Though no significant main effects were computed for stress levels on sexual orientation, a post hoc analysis revealed statistically significant differences. As there was an absence of equal sample sizes among the subgroups of the independent variables, a Scheffé post hoc analysis was performed. Concerning sexual orientation, a significant difference between heterosexuals ( $M = 17.29, SD = 7.56$ ) scoring lower stress levels than homosexuals ( $M = 20.56, SD = 8.16$ ) was computed ( $p < .001$ ), while a significant difference between heterosexuals and bisexuals ( $M = 23.69, SD = 8.24$ ) having higher stress was produced ( $p < .001$ ). Heterosexuals scored significantly lower stress than those who identified as other ( $M = 23.90, SD = 7.61, p < .001$ ). A significant difference was also computed between bisexuals scoring higher stress levels than homosexuals ( $p = .032$ ) and those preferring not to disclose their sexual orientation ( $M = 17.00, SD = 8.00$ ) scoring lower levels of stress than bisexuals ( $p = .013$ ). Finally, a significant difference was computed discerning higher stress levels in those who identified as other than those who preferred not to disclose their sexual orientation ( $p = .031$ ).

Concerning gender, a significant difference was reported between males ( $M = 17.12, SD = 8.08$ ) having lower stress levels than females ( $M = 20.50, SD = 7.71, p < .001$ ) and between transgender or those different from birth ( $M = 24.54, SD = 7.33, p < .001$ ) having higher stress levels than males. A significant difference was observed as transgender individuals reported higher stress levels than females ( $p = .008$ ).

### **3.2.1.3 Differences in Main Effects of Sexual Orientation and Gender on Resilience.**

Regarding hypothesis four, hypothesis five and hypothesis six, a statistically significant interaction between sexual orientation and gender on resilience levels was computed,  $F(11, 754) = 1.849$ ,  $p = .043$ ,  $\eta_p^2 = .026$ . This result suggests that resilience may be determined through a binary effect in both gender and sexual orientation. For example, it is discerned from Table 4 that lesbians seem to have lower resilience levels than homosexual males. Additionally, a statistically significant main effects was computed for resilience levels based on gender,  $F(4, 754) = 6.954$ ,  $p < .001$ ,  $\eta_p^2 = .036$ , whereas no statistically significant main effects was calculated for resilience levels based on sexual orientation  $F(4, 754) = 1.669$ ,  $p = .155$ , observed power = .515. Conveying that hypothesis four and hypothesis five are accepted, while hypothesis six is rejected.

### **3.2.1.4 Post Hoc Analyses for Differences between Sexual Orientation and Gender on Resilience.**

Although no significant main effects were reported for sexual orientation on resilience levels, statistically significant results were computed in the post hoc analysis. A significant difference was computed for heterosexuals ( $M = 3.38$ ,  $SD = .711$ ) and homosexuals ( $M = 3.16$ ,  $SD = .869$ ), expressing that heterosexuals have higher levels of resilience ( $p = .034$ ). Heterosexuals were also computed to have higher resilience levels than bisexuals ( $M = 3.02$ ,  $SD = .849$ ,  $p < .001$ ) or those identified as other ( $M = 2.89$ ,  $SD = .881$ ,  $p = .003$ ). Finally, a significant difference was reported as those who identified as other reported lower resilience levels than those who preferred not to disclose their sexual orientation ( $M = 3.55$ ,  $SD = 1.08$ ,  $p = .041$ ).

Involving gender, a significant difference was computed between males ( $M = 3.48$ ,  $SD = .759$ ) and females ( $M = 3.10$ ,  $SD = .762$ ), where males scored higher resilience levels ( $p < .001$ ). Males also scored higher in comparison to transgender individuals ( $M = 2.76$ ,  $SD = .843$ ,  $p < .001$ ). A significant difference was reported for females having higher resilience than transgender individuals ( $p = .039$ ).

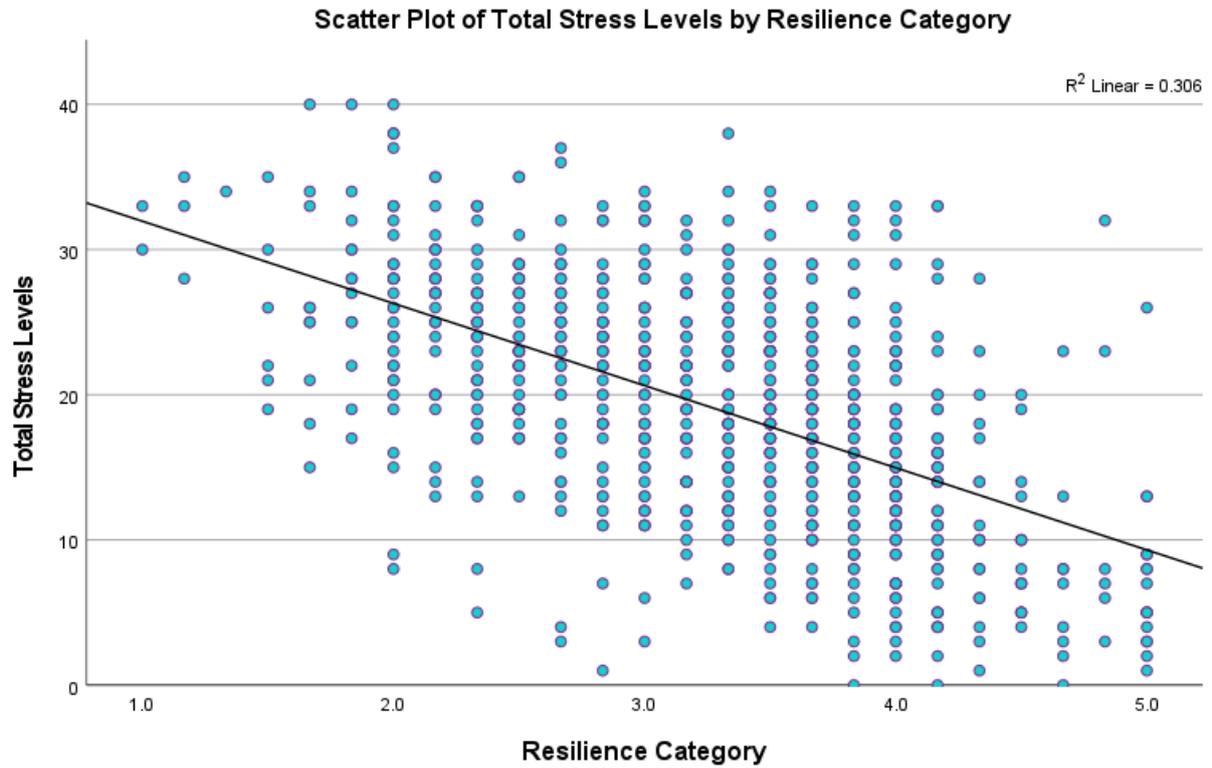
### **3.2.1.5 Correlational Associations between Stress and Resilience Levels.**

As illustrated in Figure 1, a linear relationship was identified between stress and resilience, therefore, a Pearson's correlation was utilised. Levels of stress and resilience were

processed to be negatively correlated to a moderate degree,  $r(774) = -.553, p < .001$ . Therefore, hypothesis seven is accepted.

**Figure 1**

*Scatterplot illustrating a moderate negative relationship between stress and resilience.*



## 4 Discussion

### 4.1 Overview of Findings

While COVID-19-related research has been discerned in how societies have been affected, areas regarding stress and resilience levels of minority groups, including LGBTQI+ communities, seem to have gone amiss (Gallagher et al., 2020; Salerno et al., 2020; UN News, 2020). Escalated stress levels are the new standard in various contexts because of COVID-19 (Hoyt et al., 2021). However, chronic stressors present pre-COVID-19 still exist within the LGBTQ+ community (Ginicola et al., 2017). Consequently, it is essential to investigate how the LGBTQ+ community differs in their stress and resilience levels during COVID-19 from their heterosexual and cisgender counterparts (Nitschke et al., 2020).

This study aimed to investigate differences in stress and resilience levels based on gender and sexual orientation during COVID-19. This study predicted that females and the LGBTQ+ community would illustrate higher stress and lower resilience than males and heterosexuals (Erdogan et al., 2014; Taylor et al., 2018). Additionally, stress and resilience were expected to be negatively correlated (García-León et al., 2019). Most expectations were met in association with the specific hypotheses. H1 was accepted, stating that there is a significant interaction between gender and sexual orientation based on stress, explicitly predicting females and the LGBTQ+ community obtain higher stress levels. Former investigations confirmingly reported that females and bisexuals usually present higher stress levels, suggesting an interacting dual effect on stress based on gender and sexual orientation (Erdogan et al., 2014). For instance, the results illustrate that bisexual females reported higher stress than bisexual males.

Furthermore, H2 was accepted and articulated that a significant main effect for gender exists based on stress levels. Transgender individuals obtained the highest stress levels, corroborating with the literature as transgender individuals tend to have additional mental health ailments than other genders and cohorts of the LGBTQ+ community (Olson et al., 2015). However, all gender and sexual orientation results were within the threshold of moderate stress under its classification (Cohen et al., 1983). This result may be because the data was collected during the COVID-19 pandemic, and the attributes of lockdown such as job loss, financial insecurity or isolation may have raised stress levels (Salerno et al., 2020; Singh et al., 2020). Furthermore, concerning H3, no statistical effects were computed for sexual orientation on stress, suggesting that sexual orientation does not directly influence stress levels. However,

post hoc results reported bisexuals to have higher stress levels than heterosexuals and homosexuals, corresponding with the literature and H1 (Chan et al., 2020).

Additionally, H4 was accepted, predicting a significant interaction between gender and sexual orientation on resilience levels, expecting females and the LGBTQ+ community to report lower resilience based on previous investigations (Erdogan et al., 2014). This result suggests gender has an interacting effect with sexual orientation influencing resilience levels. For instance, bisexual females and bisexual transgender individuals reported lower resilience than bisexual males, explaining the high-stress levels in bisexual females. Additionally, H5 was accepted, suggesting gender has an individual impact on resilience. Post hoc results revealed males scoring higher resilience than transgender individuals, who scored the lowest; however, all genders scored moderate amounts of resilience. This result may have theoretical contradictions. Whereas H6 was neglecting statistical significance, suggesting sexual orientation does not solely result in higher or lower resilience. However, a post hoc analysis revealed differences as those who preferred not to state their sexual orientation scored higher than those identified as 'other'.

The final hypothesis was accepted as H7 articulated that a significant negative relationship between stress and resilience would be computed according to previous research (García-León et al., 2019). This result suggests that as resilience levels increase, stress levels decrease, illustrating a causal relationship between the two variables associated with preceding studies (Watson & Tatnell, 2019). While the results of this study seem to corroborate with that of previous research, they do hold significant theoretical and practical implications.

#### **4.2 Theoretical and Practical Implications**

While some results contradict preceding explorations, most of the predictions were met, proffering significant implications. The results provide empirical support to the Minority Stress theory, suggesting minorities encounter additional stressors concerning their identity as most of the LGBTQ+ data in this study scored moderately to highly stressed (Meyer, 2003). However, the rejection of H3 and H6 may contradict previous literature and the Challenge model of resilience, stating that the manifestation of resilience derives from risk exposure (Ledesma, 2014). Furthermore, many practical implications could be devised from this study and utilised to develop educational programmes to foster resilience among the LGBTQ+ community, supporting the Community resilience model (Koliou et al., 2020). Developers may use the results indicating that high resilience may have a causal effect on low stress; therefore,

programmes based on fostering resilience may also have a causal effect on the participants' stress levels, corroborating past research (Fenwick-Smith et al., 2018). Therefore, programmes for wider audiences could be considered in educational institutions while incorporating the Community Resilience model, suggesting high individual resilience equates to high community resilience (Buikstra et al., 2010; Schmitz & Tyler, 2018). As practical and theoretical implications are discerned from this study, various strengths and limitations can be observed.

### **4.3 Strengths and Limitations**

While this study provided insight into current resilience and stress levels of a diverse population during the COVID-19 pandemic, various strengths and limitations are present. Notable strengths were the sample size and the reach of participation, gathering data from Oceania, Asia, America and Europe. Additionally, the cross-cultural component may instigate attention from worldwide policymakers and LGBTQ+ activists, while another strength of this study is its implications for future research.

Contrastingly, the unequal sample sizes across the subgroups limited the study's parameters as ethnicity was intended to be one of the variables to analyse but was removed from statistical consideration. Additionally, questions requesting information on the participants' gender may have damaged that component as transgender individuals may identify as 'male' or 'female' and not as 'transgender'. Another limitation of this study may be the dereliction of personality traits; as studies have suggested, it is critical when considering the biological perspective of resilience (Curtis & Cicchetti, 2003). The results of this study and the strengths and limitations instigate the need for future research.

### **4.4 Future Research**

When focusing on the methodological difficulty in recruiting people of colour for this study (11.9%), future research could expressly incorporate ethnicity to investigate how people of colour within the LGBTQ+ community differ in their stress and resilience during the COVID-19 pandemic. Ethnicity may be an essential variable to consider, as studies suggest COVID-19-related mortality rates differ when considering race (Gupta et al., 2021). Additionally, researchers could incorporate a mixed-methods design to investigate specific origins of the stressors the LGBTQ+ community have confronted during COVID-19 as this may provide a more qualitative discernment when considering the Minority Stress theory (Ginicola et al., 2017; Meyer, 2003).

This study investigated differences in stress and resilience levels based on a given populations' gender and sexual orientation during COVID-19. Although the findings of this study vary in contradiction and support, it is apparent that the LGBTQ+ community, particularly bisexual and transgender individuals, experience significant amounts of stress than their heterosexual cisgender counterparts. However, not all sexual identities were examined, such as asexuality, demisexual or pansexuality, which may explain some contradicted hypotheses. Furthermore, as this study identifies differences in stress and resilience based on sexual identity, it does not eliminate the actuality that many peoples' livelihoods and relationships have been devastated by COVID-19 regardless of which gender or sexual orientation they may identify (Brammer & Clarke, 2020).

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## Appendices

### Appendix A: Promotional Flyer (English)



 **Universiteit Utrecht**

**COVID-19  
RESEARCH**

WE WANT YOUR INPUT ON HOW COVID-19  
HAS IMPACTED YOU!

Follow the link below or scan the QR code  
to fill out the questionnaire/

[survey.uu.nl/jfe/form/SV\\_3IAWbGWYemcz0mV](https://survey.uu.nl/jfe/form/SV_3IAWbGWYemcz0mV)

Appendix B: Promotional Flyer (Dutch)



 **Universiteit Utrecht**

**COVID-19  
ONDERZOEK**

WE WILLEN UW MENING OVER DE IMPACT DIE  
COVID-19 OP U HEEFT!

Volg onderstaande link of scan de QR code om  
de vragenlijst in te vullen.



[survey.uu.nl/jfe/form/SV\\_31AWbGWYemcz0mV](https://survey.uu.nl/jfe/form/SV_31AWbGWYemcz0mV)

Appendix C: Promotional Flyer (German)

 **Universiteit Utrecht**

# Stress COVID-19

## Sie?

- Sind sie 18 Jahre oder älter?
- Haben Sie etwas weniger als 20 Minuten Zeit?
- Haben Sie Interesse an die Covid-19 Forschung?
- Haben Sie Interesse an einer kostenlosen Mindfulness-Unterrichtsstunde?

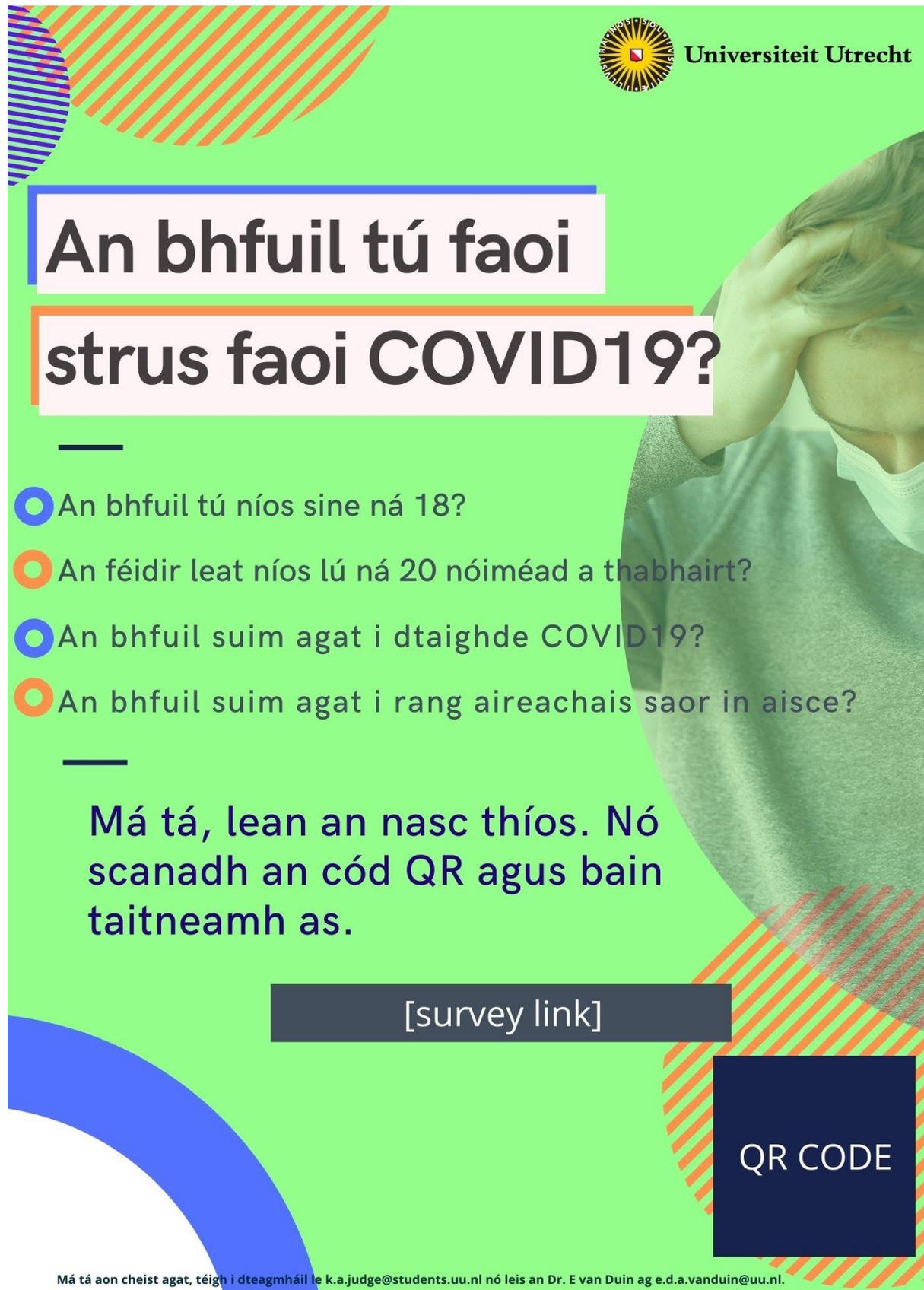
Wenn ja, dann folgen Sie diesen Link: Oder scannen Sie den QR-Code. Wir wünschen Ihnen viel Spaß!

[survey link]

QR CODE

Wenden Sie sich bei Fragen an [s.j.duda@students.uu.nl](mailto:s.j.duda@students.uu.nl) oder an Dr. E van Duin unter [e.d.a.vanduin@uu.nl](mailto:e.d.a.vanduin@uu.nl).

Appendix D: Promotional Flyer (Irish)



 **Universiteit Utrecht**

# An bhfuil tú faoi strus faoi COVID19?

---

- An bhfuil tú níos sine ná 18?
- An féidir leat níos lú ná 20 nóiméad a thabhairt?
- An bhfuil suim agat i dtaighde COVID19?
- An bhfuil suim agat i rang aireachais saor in aisce?

---

Má tá, lean an nasc thíos. Nó scanadh an cód QR agus bain taitneamh as.

[survey link]

QR CODE

Má tá aon cheist agat, téigh i dteagmháil le [k.a.judge@students.uu.nl](mailto:k.a.judge@students.uu.nl) nó leis an Dr. E van Duin ag [e.d.a.vanduin@uu.nl](mailto:e.d.a.vanduin@uu.nl).

Appendix E: LGBTQ+ Specific Flyer

 **Universiteit Utrecht**

**CALLING ALL  
LGBTQIA+  
FOLK**

WE WANT YOUR INPUT ON HOW COVID-19  
HAS IMPACTED YOU!



Follow the link below or scan the QR code  
to fill out the questionnaire/

[survey.uu.nl/jfe/form/SV\\_3IAWbGWYemcz0mV](https://survey.uu.nl/jfe/form/SV_3IAWbGWYemcz0mV)

Appendix F: Sport Specific Flyer



The flyer features a background of a runner silhouetted against a blue sky with clouds, set against a backdrop of green and blue wavy shapes. The Universiteit Utrecht logo is in the top left corner. The main text is in large, white, outlined letters. A QR code is located in the bottom left, and a survey link is at the bottom.

 **Universiteit Utrecht**

**HEY YOU!  
TAKE A  
BREATH!**

ACTIVE MUCH?  
INTO PARKOUR, RUNS OR CYCLING?

WE WANT YOUR INPUT ON HOW COVID-19  
HAS IMPACTED YOU!

Follow the link below or scan the QR code  
to fill out the questionnaire/

[survey.uu.nl/jfe/form/SV\\_31AwbGWYemcz0mV](https://survey.uu.nl/jfe/form/SV_31AwbGWYemcz0mV)

Appendix G: Mindfulness Specific Flyer



 **Universiteit Utrecht**

**ARE YOU CALM YET?**

ARE YOU A FREQUENT MEDITATOR?  
WE WANT YOUR INPUT ON HOW COVID-19  
HAS IMPACTED YOU!

Follow the link below or scan the QR code  
to fill out the questionnaire/

[survey.uu.nl/jfe/form/SV\\_3IAWbGWYemcz0mV](https://survey.uu.nl/jfe/form/SV_3IAWbGWYemcz0mV)

**Appendix H: Email**

Dear Sir/Madam / [Insert personal name if known],

I am delighted to be corresponding with you today. My name is [student name] and I am a master's student at Utrecht University studying Clinical Psychology.

I have just compiled final preparations for the commencement of my dissertation entitled; 'Investigation of Stress and Resilience Levels during the COVID-19 Pandemic' and I believe the organisational values at [insert name of organisation here] are in close parallel with my main research questions concerning [insert variables specific to org like mindfulness, wellbeing, sport, exercise, research, LGBT+, etc].

Therefore, I am formally inviting you to consider dispersing this questionnaire to members and partners associated with [insert name of organisation here]. Participants may also be in a chance to win a free 30-minute mindfulness class should they participate. The questionnaire is available here. [can embed survey link in the word 'here'], while a promotion infographic poster has been attached where a QR code can be scanned.

Should you have any concerns or questions, I would more than happy them. Or you may wish to contact my supervisor Dr Esther van Duin at e.d.a.vanduin@uu.nl.

Kind regards,

[student name]

## Appendix I: Information Sheet



0% ————— 100%

English ▾

### Information Sheet

**Study Title:** Investigation of Stress and Resilience Levels during the COVID-19 Pandemic.

#### Invitation

You are invited to consider taking part in the research study: 'Investigation of stress and resilience levels during COVID-19 pandemic.'

This project is being undertaken for partial completion of the Master's of Science in Clinical Psychology at

Utrecht University, Utrecht, Netherlands. The students are:

- Karimah Halimah Haselhoef at [k.h.haselhoef@students.uu.nl](mailto:k.h.haselhoef@students.uu.nl)
- Keith Anthony Judge at [k.a.judge@students.uu.nl](mailto:k.a.judge@students.uu.nl)
- Sarah Elise Sabine Schoenmakers at [s.e.s.schoenmakers@students.uu.nl](mailto:s.e.s.schoenmakers@students.uu.nl)
- Julius Thomas Habel at [j.t.habel@students.uu.nl](mailto:j.t.habel@students.uu.nl)
- Sarah Johanna Duda at [s.j.duda@students.uu.nl](mailto:s.j.duda@students.uu.nl)

Before you decide whether you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with friends and relatives if you wish. Don't hesitate to contact the researchers if there is anything that seems unclear or if you would like more information.

#### Purpose of the Research

The purpose of this research is to investigate if there are any potential differences and relationships within and between stress and resilience. It is a requirement for the partial completion of a Master's of Science degree in Clinical Psychology at Utrecht University, Netherlands.

#### Do I have to take part?

You are free to decide whether you wish to take part or not. If you do decide to participate, you will be asked to complete a consent form, feel free to take a screenshot of it. You are free to withdraw your data from this study or stop answering questions at any time without giving reasons for doing so and without adverse consequences. How you do this will be explained further down.

If you request the removal of your data after it has been already analysed and computed by the researchers,

it will be impossible to remove it.

**If I take part, what do I have to do?**

You will be asked to read this information sheet, agree to it and answer some questions. The whole survey process is expected to take no more than 20 minutes of your time. You will not be asked for personalized details like your name, email address, family name, address, bank account information or your full telephone or mobile number. All information you provide cannot and will not be traced back to you or the device you completed the survey on as all data and information you provide will be anonymous and kept confidential.

**What are the possible disadvantages and risks of taking part?**

There are no foreseen disadvantages and risks of participating. However, some questions may be distressing or difficult to answer for some participants as they ask to declare your sexuality, health status and ethnicity. When you are finished answering the questionnaire, many resources and organisations will be provided should you feel the need to follow up with them. There will also be 'Prefer not to say' option for these answers.

**What are the advantages of taking part?**

By taking part in this research, you are contributing greatly to the scientific community. Furthermore, if you participate via Utrecht University's SONA system you will receive participation points for your participation in this survey. Additionally, you will also have the option of availing of one free 30-minute meditation and laughter yoga class. This will be elaborated on in the debrief after you finish the questionnaire.

**How will information about me be used?**

Once the data is collected, it will be stored securely and only accessible on the Utrecht University's servers. The common timeline for data storage in research studies is usually 10 years from completion according to guidelines influenced by the American Psychological Association (APA) as well as the local ethical guidelines from Germany, The Netherlands and the Republic of Ireland. The data you provide is obligated to be legally secured due to the General Data Protection Regulation (2016) of the European Union regardless of where you are currently residing.

You have control over the data you provide, this means that you are entitled to remove your data from this study if you so wish and you can do this without giving reasons. This can be done by emailing one of the researchers, Keith Anthony Judge at [k.a.judge@students.uu.nl](mailto:k.a.judge@students.uu.nl), or any of the following contacts:

- Supervisor: Dr Esther van Duin at [e.d.a.vanduin@uu.nl](mailto:e.d.a.vanduin@uu.nl)
- Independent Data Protection Officer within Utrecht University at [privacy@uu.nl](mailto:privacy@uu.nl)

As mentioned, you can withdraw your data any time by quoting your identification code. This code will be displayed to you once you complete the consent form, you will be prompted to record the code. Additionally, the researcher will not change individualistic data upon request.

**Who has reviewed the study?**

This study has been ethically reviewed, assessed, and approved by the FERB (Faculty Ethics Review Board), along with the supervisor Dr Esther van Duin.

**Thank you.**

Thank you for taking the time to carefully read this information sheet. Please feel free to read over it again if anything feels unclear. Please now proceed to the consent form. If you have any questions regarding the study, feel free to contact the research team at [k.a.judge@students.uu.nl](mailto:k.a.judge@students.uu.nl).

**Date**

02/11/2020

**Researcher**

Karimah Halimah Haselhof

Keith Anthony Judge

Sarah Elise Sabine Schoenmakers

Julius Thomas Habbel

Sarah Johanna Duda

**Supervisor**

Dr Esther van Duin.

---> Next

## Appendix J: Consent

English ▼

### Consent Form

**Title of Project:** Investigation of Stress and Resilience Levels during the COVID-19 Pandemic

**Name of Researchers:** Keith A. Judge, Sarah Johanna Duda, Sarah Elise Sabine Schoenmakers, Julius Thomas Habbel, Karimah Halimah Haselhof.

**Supervisor:** Dr Esther van Duin

Please read the following statements carefully and then tick the corresponding box to consent and move on to the questionnaire:

I have read the previous information letter and I am fully informed of the study.

I understand that I have had the opportunity to ask questions.

I am or are over the age of 18 by the time I start and complete the survey.

I understand that I can withdraw my data by email at any time and that my participation is voluntary.

I understand that my data will be analyzed only within the EU/EEA.

I understand that once my data has been analyzed and computed, it will be impossible to be deleted.

<--- Previous

---> Next

## Appendix K: Demographical Questions

### Demographic Questions

The following questions will relate to demographical information.

Please state your **age** in numerical form.

*You can state "N/A" if you do not wish to provide this.*

From the list below, how would you identify your gender?

Male

Female

Transgender / Gender non-conforming / Different from Birth

Other

Prefer not to say

From the list below, how would you identify your ethnicity?

Black (African American, Black African, Black Caribbean, etc.)

White (Caucasian).

Mixed Background

Asian (Middle Eastern, Eastern Russian, Chinese, Korean, Philippine).

Other

Prefer not to say

Which country are you currently residing in?

The Netherlands

Germany

Ireland

Austria

United Kingdom

Italy

Other

From the list below, how would you identify your sexual orientation?

Straight / Heterosexual

Homosexual / Gay / Lesbian

Bisexual

Other

Prefer not to say

Please select the highest educational level you have completed.

Primary Education

Secondary Education

Post-secondary Education

Higher Education (Bachelor's, Master's, PhD, MD)

Other

## Appendix L: PSS

### Stress

The following questions are concerning the current COVID-19 situation and how it has influenced and is still influencing you.

In the last month, how often have you been upset because of something that happened unexpectedly?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt that you were unable to control the important things in your life?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt nervous and stressed?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt confident about your ability to handle your personal problems?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt that things were going your way?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you found that you could not cope with all the things that you had to do?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you been able to control irritations in your life?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt that you were on top of things?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you been angered because of things that happened that were outside of your control?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0 = Never

1 = Almost never

2 = Sometimes

3 = Fairly often

4 = Very often

## Appendix M: BRS

### Resilience

Amazing, you are now half way there.

The following questions will relate to resilience levels.

I tend to bounce back quickly after hard times

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

I have a hard time making it through stressful events

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

It does not take me long to recover from a stressful event

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

It is hard for me to snap back when something bad happens

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

I usually come through difficult times with little trouble

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

I tend to take a long time to get over set-backs in my life

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

[<--- Previous](#)

[---> Next](#)

## Appendix N: Debrief

### Debrief

*(Make sure you click 'next' down below)*

#### What now?

That's it, you're all done. Thank you. This study was to investigate stress and resilience levels during the COVID-19 pandemic based on several variables.

Your participation remains voluntary and your data will be kept confidential, anonymous, and safe to the best of the researchers' ability. Don't hesitate to contact the researchers if you have questions at [k.a.judge@students.uu.nl](mailto:k.a.judge@students.uu.nl). or any of the following contacts:

- Supervisor: Dr Esther van Duin at [e.d.a.vanduin@uu.nl](mailto:e.d.a.vanduin@uu.nl)
- Independent Data Protection Officer within Utrecht University at [privacy@uu.nl](mailto:privacy@uu.nl)

We thank you sincerely for your contributions and understand that some of these questions might have been troubling or difficult to answer. If this is the case, here are some of the many organisations you could get in contact with, should you feel the need to do so.

#### *Ireland*

- LGBT Ireland / Helpline | Tel: 1890929539 | Email: [info@lgbt.ie](mailto:info@lgbt.ie)
- Jigsaw YMH | Tel: +353 1 472 7010 | Email: [info@jigsaw.ie](mailto:info@jigsaw.ie)
- BeLonGTo | Tel: +353 1 670 6223 | Email: [info@belongto.org](mailto:info@belongto.org)

#### *Netherlands*

- COC Switchboard | Tel: +31 (20) 623 65 65 | Email: [info@switchboard.nl](mailto:info@switchboard.nl)
- MIND | <https://wijzijnmind.nl> | Tel: +31 0900 1450

#### *Germany*

- Schwulenberatung Berlin | Tel: +49 (030) 446688-111 | Email: [info@schwulenberatungberlin.de](mailto:info@schwulenberatungberlin.de)

***Other EU Countries***

- <https://ilga-europe.org/mental-health/help>

***Canada***

- Rainbow Services CAMH (based in Toronto) | Tel: +1 416 535-8501

***United States of America***

- The Trevor Project | Tel: 1-866-488-7386 | Visit: [thetrevorproject.org](http://thetrevorproject.org)

***United Kingdom***

- MIND | Tel: 0300 123 3393 | Visit: [mind.org.uk](http://mind.org.uk)

**Free 30 Minute Mindfulness Meditation and Laughter Yoga Class**

As a thank you for participating, you can avail of one free class by clicking [here](#). More information will be explained there.

**Appendix O: Mindfulness Sign-up Page**

English ▾

**Free 30-min Mindfulness Meditation and Laughter Yoga Class.**

Many thanks for completing the questionnaire and considering this free class. As a thank you, this class has been designed for you. The class is expected to take place online via Microsoft Teams on the **16th December 2020 at 12:00 pm** (GMT+0:00).

This class will be offered randomly to the participants who signed up. Therefore, only your email address is required. Your email address will be stored separately from the data you supplied to the previous questionnaire and cannot, therefore, be connected to you.

As only a minority of email addresses will be contacted with an invitation to the class, you will receive an email with a link to join the 30-minute class in mid-late November 2020. If you do not receive an email by December, you may assume your email address was not randomly selected.

Please note that by participating in this free class or not, it will not impact on the data that you supplied, nor will the class facilitator accept questions or concerns related to the previous questionnaire. Although the class facilitator may be knowledgeable in the area of mindfulness and laughter yoga, they are not professionally certified instructors for these activities.

Unfortunately, the class will be delivered through English only.

Please read and consent to the following.

I read, understand and agree to all above.

I understand that this free-30 class is voluntary and offered by a randomized lottery.

I understand I have the right to withdraw or not attend, should I be invited.

I understand my email address will be deleted from this database after the class.

I understand and accept that my email address will be taken and stored on Utrecht University Servers only.



**Appendix P: Ethics Application Successful**

|   |  |   |
|---|--|---|
| <b>P.O. Box 80140, 3508 TC Utrecht</b><br><br>The Board of the Faculty of Social and Behavioural Sciences<br>Utrecht University<br>P.O. Box 80.140<br>3508 TC Utrecht |  | <b>Faculty of Social and Behavioural Sciences</b><br><br>Faculty Support Office<br>Ethics Committee<br><br><b>Visiting Address</b><br><br>Padualaan 14<br>3584 CH Utrecht |
| <b>Our Description</b><br><b>Telephone</b><br><b>E-mail</b><br><b>Date</b><br><b>Subject</b>  | 20-0233<br>030 253 46 33<br>FETC-fsw@uu.nl<br>04 November 2020<br>Ethical approval |   |

**ETHICAL APPROVAL**

Study: Investigation of Stress and Resilience Levels during the COVID-19 Pandemic.

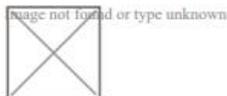
Principal investigator: K.A. Judge

Supervisor: Dr Esther van Duin

This student research project does not belong to the regimen of the Dutch Act on Medical Research Involving Human Subjects, and therefore there is no need for approval of a Medical Ethics Committee.

The study is approved by the Ethics Committee of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents send by the researchers as requested in the form of the Ethics committee and filed under number 20-0233. The approval is valid through 31 January 2021. Given the review reference of the Ethics Committee, there are no objections to execution of the proposed research project, as described in the protocol and according to the GPDR It should be noticed that any changes in the research design oblige a renewed review by the Ethics Committee by submitting an amendment

Yours sincerely,



Peter van der Heijden, Ph.D.  
Chair