Utrecht University

# *Climb ups for getting back up?*

Parkour's potential influence on resilience and stress levels during the COVID-19 pandemic.

Master Thesis for the Master of Clinical Psychology

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**Abstract**

*Background*: The COVID-19 pandemic results in many adverse effects on peoples´ mental health like stress, for which resilience is a protective factor. Resilience can be built up and increased. This research proposed the previously untested idea that parkour could increase resilience and in turn reduce adverse effects on mental health like stress.

*Methods*: 738 included participants (mean age: 30.6, 51.4% male) filled out an online questionnaire including the Brief Resilience Scale (BRS), the Perceived Stress Scale (PSS) and questions about their main sport. Traceurs' (people practicing parkour) stress- and resilience levels were compared to those of people doing other- or no sport. A correlation between stress- and resilience levels, a MANOVA and a mediation analysis (using PROCESS by Hayes) were conducted. Additionally, an ANOVA tested the relationship between traceurs' training experience in years and their resilience.

*Results*: Participants' resilience- and stress levels were significantly strong negative correlated. Traceurs displayed significantly higher resilience- and significantly lower stress than people doing other- or no sport and resilience levels acted as a mediator. Traceurs of varying training did not significantly differ in resilience levels, which was the only not confirmed hypothesis.

*Conclusion*: For the first time traceurs have been shown to have higher resilience- and lower stress levels. This is expected to reduce adverse effects of the Covid-19 pandemic and could have clinical implications. A causal relationship could not be established due to the research design, and suggestions for further research are given.

*Keywords*: Parkour, Covid-19, pandemic, stress, resilience, mediation analysis

## 1. Introduction

On the 11th of March 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus, hereafter called COVID-19, a pandemic. At that timepoint there were 118.000 global confirmed cases and 4.291 deaths from 114 countries. In mid-April 2020 the European region became the epicenter of the pandemic and at the end of the month it accounted for 63% of the global deaths (World Helath Organization, 2020a). Exactly one year after the WHO declared the pandemic, there were 117.573.007 global confirmed cases and 2.610.925 deaths worldwide (World Health Organization, 2020b). These numbers came along with extreme social circumstances which strongly influence most people's everyday life. Only 30-40 days after the WHO declared the pandemic people showed an increase in sleeping time, physical inactivity and screen time along with a decrease in sports activities and in daily walking (Pišot et al., 2020). In addition to this, the prevalence of stress, anxiety, and depression resulting from the COVID-19 pandemic in the general population were around 30%, showing that COVID-19 severely impacts general mental health (Salari et al., 2020). Additionally, being exposed to new, restricting public health measures and other effects of the pandemic are stressors that are expected to influence the COVID-19 related psychiatric illness as well as emotional distress (Pfefferbaum & North, 2020). All in all, the pandemic has been shown to lead to negative effects on people's mental health, with stress in particular appearing to be a factor that should be further investigated.

One important factor related to stress is resilience, which is considered especially relevant in the context of the current pandemic (Vinkers et al., 2020). It has been shown that resilience "can be modeled" and "enables you to get back up", and that the ability to see obstacles as opportunities must be developed in order to build resilience (Stoltz, 1997, p. 65, p. 70). The American Psychological Association defines resilience as "the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress" (American Psychological Association, 2012, paragraph 4). Another description of resilience is the "ability to bounce back from tough times, or even triumph in the face of adversity; to display tenacity, but not at the expense of reason" (Clarke & Nicholson, 2010). Thus, resilience is not about avoiding difficult situations, but rather to be able to get through these situations unharmed and recovering well from them. Higher resilience is related to lower COVID-19 related anxiety, depression and worries (Barzilay et al., 2020). And people with lower resilience show higher levels of perceived stress than people with higher resilience (García-León et al., 2019). Accordingly, resilience is expected to be a protective factor of COVID-19 related perceived stress, with people with higher resilience displaying lower stress and vice versa.

Resilience can be build and increased, for which the American Psychological Association provides several ways (American Psychological Association, 2012). The different aspects suggested to build resilience are "connection", "wellness", "finding purpose", and "embracing healthy thoughts".

And they can be related to the under-researched sport parkour. Parkour is a relatively new sport which evolved during the 1990s in France and has an actively lived underlying philosophy (Angel, 2016). Traceurs (people practicing parkour) try to get as effectively as possible, mostly defined as energy efficient or fast, from point A to point B (Gilchrist & Wheaton, 2011). The factor "connection" includes joining and being part of a group, which is how most traceurs train parkour (Holzmüller & Braumüller, 2020, table 1). Regular exercise is part of the "wellness" aspect, which is in line with Johnson (2015) and Ozkara et al. (2016), and is a crucial characteristic of parkour (Edwardes, 2009). "Finding purpose" includes, among others, being proactive, which includes breaking down problems that "seem too big to tackle (…) into manageable pieces" (paragraph 16) which is also how traceurs approach new, and difficult movements (American Psychological Association, 2012). And this mindset is not only used during the active training sessions of traceurs but is incorporated in their general way of thoughts and behavior (Atkinson, 2009). Additionally, parkour can be trained outside, almost everywhere and alone, which is especially useful during the Covid-19 pandemic which limits and prohibits many sports activities due to restrictions in group sizes and sports facilities. In contrast to some people's expectations, "parkour is not about showing off and taking risks" (p.9), but rather about facing and overcoming mental and physical challenges (Edwardes, 2009). And the probably most essential part of parkour's philosophy is that obstacles can be transformed into opportunities and, that constraints are not eliminated but rather reinterpreted and utilized (Bavinton, 2007). Another description of its philosophy is "to see obstacles as opportunities for adaptation and improvement, to find a way through any terrain, and to embrace adversity as the vital catalyst for our own growth and self-mastery" (Parkour Generations, n.d., paragraph 3). In this way, parkour's philosophy shares a lot of aspects with the above definitions of resilience (Clarke & Nicholson, 2010; Stoltz, 1997), leading to the question whether practicing parkour could increase resilience.

This study aimed to examine, for the first time, the potential effect that doing parkour might have on people's resilience- and stress levels. This was done in the context of the Covid-19 pandemic, where general higher resilience is helpful to cope with the various negative impacts of this pandemic. Strafford et al. (2018) mentioned that aspects of parkour could potentially increase traceurs' resilience as well as stress regulation, but did not back this up by scientific evidence. An overview of all investigated hypotheses is shown in Figure 1. The first hypothesis was that participants' resilience- and stress levels negatively correlate. Hypothesis two expected traceurs to display higher resilience levels than people doing other sports or no sport. And the third hypothesis was that traceurs indicate lower stress levels than people doing other sports or no sport. Hypothesis four stated that participants' resilience levels mediate the effect of parkour, compared to other and no sport, on their stress levels. Based on the expectation that training parkour would increase resilience levels, it was hypothesized that longer training experience correlates with higher resilience levels in traceurs

(Hypothesis 5). Due to the novelty of this research field this study has scientific relevance as it opens a new research perspective on parkour, resilience and stress. Clinical relevance is given, as the continuing Covid-19 pandemic strains people's mental health and parkour could potentially increase resilience, alleviating some of the pandemic's negative effects on mental health.

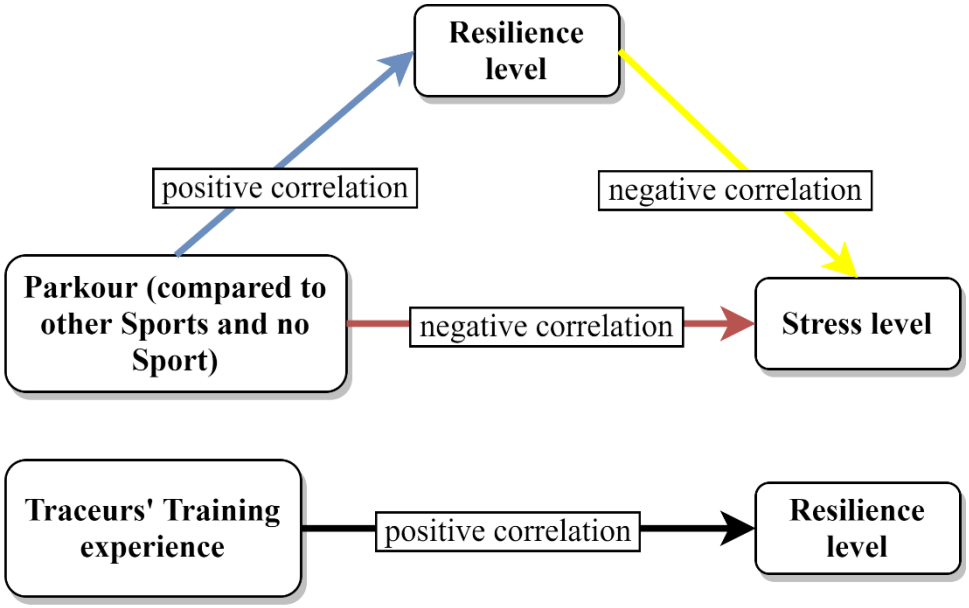


**Figure 1:** Hypotheses overview. Yellow arrow: 1st hypothesis, blue arrow: 2nd hypothesis, red arrow: 3rd hypothesis, blue and yellow arrow: 4th hypothesis, black arrow: 5th hypothesis.

## 2. Methods

### 2.1. Design

The research design was quantitative cross-sectional and quasi-experimental. The type of sport was used as the independent variable. Parkour was the experimental condition and the other sports and no sport acted as control condition. The dependent or outcome variables were participants' resilience- and stress levels.

### 2.2. Participants

In total 1100 participants were recruited. The main inclusion criterium was that participants had to be at least 18 years old. Only participants that gave their full consent and filled out the questionnaires about their main sport, stress levels, and resilience levels were included. Participants who did not provide this information were excluded for the final statistical analyses. This resulted in 738 included responses. Demographics and corresponding statistical tests for the included participants are shown in Table 1. The participants had a mean age of 30.6, were predominantly male (51.4%), white (87.1%), higher educated (54.1%) and from western European countries (Table 1). The sample of traceur was younger, lower educated and consisted of proportionally more males, Germans and heterosexuals than the samples of people doing other sports or no sport (Table 1). Table 2 provides an overview of traceurs' parkour specific answers.

### 2.3. Instruments

*Demographics*

Demographic questions (Appendix C1-3) about participants' age, gender, ethnicity, country of residence, sexuality and education were included. All questions except for age included the option "other" which led the participants to an open answer box. The questions about gender and sexual orientation included an "Prefer not to say" answer option, as these questions were considered to being possibly perceived as invasive by the participants. The demographic questions were translated into Dutch and German using the back-translation method (PacTranz, n.d.).

*Resilience*

In order to measure participants' levels of resilience the Brief Resilience Scale (BRS, Appendix D1-3) which measures the individuals' ability to bounce back or recover from stress was used (Smith et al., 2008). It includes six questions, half reverse scored ones (2, 4, 6), which are answered on a five-point Likert scale ranging from 1=strongly disagree to 5=strongly disagree. The mean of the six answer scores is calculated, resulting in a final score ranging from 1 to 5. Final scores between 1.00-2.99 are considered low, 3.00-4.30 normal and 4.31-5.00 high resilience (Smith et al., 2013). The BRS is a reliable scale to measure resilience with good psychometric quality (Salisu & Hashim, 2017; Smith et al., 2013). The used Dutch and German translations of the BRS are reliable and valid measurements (Chmitorz et al., 2018; Soer et al., 2019). The Cronbach's alpha for the BRS in this research was .86, indicating a strong reliability.

*Stress*

Participants' perceived stress levels (hereafter called stress levels) were measured by the 10 item version of the Perceived Stress Scale (PSS-10, Appendix E1-3) developed by Cohen et al. (1983) which measures how stressful people perceive different situations in their life. Before answering the questions, participants were instructed that the following questions concern the current COVID-19 situation, priming them to this specific situation. The PSS questions start with "In the last month, how often have you…" and are answered on a five-point Likert scale from 0=never to 4=very often. Four of the questions (4, 5, 7, 8) are revers scored. The scores are then summed up to build a total score potentially ranging from 0 to 40. Score between 0-13 are considered low, 14-26 indicate moderate and 27-40 are considered high stress levels. The PSS-10 has been shown to have good psychometric properties and to be a reliable as well as valid self-report measure for stress (Roberti et al., 2006; Taylor, 2015). The German version of the PSS-10 is an approved reliable and valid instrument (Klein et al., 2016), but the Dutch version's psychometric quality was not assessed so far (Kok, 2019). In this research a Cronbach's alpha of .92 was observed for the PSS-10 which indicates a strong reliability.

*Parkour/ Sport questionnaire*

The sport questionnaire (Appendix F1-3) consisted of seven questions. The first question was newly created and asked about the participants main sport which was defined by spending the most hours on it per month. The eight answer options included parkour/ freerunning, five other sports, an "other" option leading to an open-ended answer box and a no sport option, which made the survey skip the rest of the sport questions. The five other sports were chosen by the five researchers who shared the overall questionnaire and were based on expected popularity of different sports. All sports other than parkour were later grouped together, resulting in the three independent sport groups, namely parkour, other sports and no sport. The participants were asked to answer the following sport questions based on their main sport indicated in question one. The second question asked about training experience in years and was taken from Holzmüller & Braumüller's questionnaire about parkour training (2020). The other five questions were adapted from Holzmüller and Braumüller (2020) to fit a five point Likert scale and to include a retrospective account of training before the Covid-19 pandemic. Questions three to six asked about average training frequency per week and average number of people in a training session, before and during the pandemic. And the last question asked about the number of active members of the sport community/ group. For the current analysis only the first and second question were used. The other six questions were included for potential later analysis as well as to increase the scientific body of descriptive knowledge about traceur training, as information about this is sparse and might be interesting for other researchers.

### 2.4. Procedure and data collection

This study was part of a bigger master thesis project shared with four other master students from Utrecht University. One shared questionnaire was designed which included the psychometrics of all the different topics. Each master student then only used the parts relevant for their master thesis in the analysis. The Faculty Ethics Review Committee approved the ethicality of the study.

A purposive, snowball, randomized and convenience sampling method was used as a recruitment strategy for the study. Participants were mainly recruited by flyers (Appendix A), recruitment posts in social networks like Facebook, Reddit and Instagram (Appendix B) and messengers like WhatsApp. In addition to this some specific organizations were contacted via email, asking for participation and sharing of the survey link. The social media recruitment posts were done in e.g. mindfulness, parkour and LGBTQ+ groups.

### 2.5. Processing and data analysis

For this analysis only the above-described psychometrics of the shared questionnaire were used. SPSS (IBM SPSS Statistics version 27) was used for conducting the statistical analysis and a significance level of $\alpha = .05$ was used. The first hypothesis was tested by a Pearson correlation.

Additionally, separate Pearson correlations were conducted for each sport group, namely parkour, other sports and no sport, to test whether the negative correlation was present in all groups. Hypotheses two and three were tested with a multivariate analysis of variance (MANOVA). The fourth hypothesis was investigated with a regression analysis using PROCESS (PROCESS by Andrew F. Hayes, version 3.5.2). Age was included as a covariate for this analysis, as it differed significantly between the three groups. The final hypothesis that longer training experience correlates with higher resilience levels in traceurs was tested with an analysis of variance (ANOVA). Violations of normality and outliers were ignored, as the group sizes were sufficiently large, and the outliers were considered to consist of valid data.

## 3. Results

### 3.1 Sample characteristics

To test the differences in age between sport groups a Welch-ANOVA and a Games-Howell test got used, as the assumptions of homogeneity of variances were not met (Levene's test, p<.001). Traceurs were significantly younger than the people doing other sports (-4.93, 95%-CI[-7.88, -1.97], $p < .001$) as well as the people doing no sport (-4.38, 95%-CI[-7.4, -1.35], $p = .002$), but there was no difference in age between people doing other sports and no sport. To test differences in language, a Chi-square test was conducted ($x^2 = 118.62$, p< .001). A Fisher's exact test was conducted for ethnicity (p= .027). For the variables gender, country, sexual orientation and education level Fisher's exact tests were not able to be computed, thus a Monte-Carlo simulation Hemmerich (2018) with 10,000 repetitions was used ($X^2 = 55.53$, .002**; $X^2 = 169.87$, < .001**; $X^2 = 46.68$, < .001**; $X^2 = 20.84$, .008 respectively). The three sport groups significantly differed in all demographics (Table 1).

**Table 1**

***Demographic characteristics, resilience scores and stress scores for all participants, and for sport groups***

| | All participants (N=738) | Parkour (n=59) | Other sports (n=428) | No sport (n=251) | Test statistic | P value |
|---|---|---|---|---|---|---|
| **Age, mean (SD)** | 30.6 (± 11.81) | 26.25 (± 8.05) | 31.17 (± 12.74) | 30.63 (± 10.7) | F = 12.88 | < .001** |
| **Language, n (%)** | | | | | $X^2 = 118.62$ | < .001** |
| English | 457 (61.9%) | 17 (28.8%) | 246 (57.5%) | 194 (77.3%) | | |
| Dutch | 140 (19%) | 3 (5.1%) | 104 (24.3%) | 33 (13.1%) | | |
| German | 141 (19.1%) | 39 (66.1%) | 78 (18.2%) | 24 (9.6%) | | |
| **Gender, n (%)** | | | | | $X^2 = 55.53$ | .002** |
| Male | 379 (51.4%) | 53 (89.8%) | 207 (48.4%) | 119 (47.4%) | | |
| Female | 297 (40.2%) | 6 (10.2%) | 196 (45.8%) | 95 (37.8%) | | |
| Transgender/ gender non-conforming | 43 (5.8%) | | 16 (3.7%) | 27 (10.8%) | | |
| Other | 15 (2%) | | 7 (1.6%) | 8 (3.2%) | | |
| **Ethnicity, n (%)** | | | | | Fisher's exact test | .027* |
| White | 643 (87.1%) | 52 (88.1%) | 378 (88.3%) | 213 (84.9%) | | |
| Mixed Background | 31 (4.2%) | 2 (3.4%) | 18 (4.2%) | 11 (4.4%) | | |
| Asian | 27 (3.7%) | 3 (5.1%) | 18 (4.2%) | 6 (2.4%) | | |
| Other | 26 (3.5%) | | 8 (1.9%) | 18 (7.2%) | | |
| Black | 3 (0.4%) | | 3 (0.7%) | | | |

| | All participants (N=738) | Parkour (n=59) | Other sports (n=428) | No sport (n=251) | Test statistic | P value |
|---|---|---|---|---|---|---|
| **Country, n (%)** | | | | | $X^2$= 169.87 | < .001** |
| The Netherlands | 167 (22.6%) | 4 (6.8%) | 127 (29.7%) | 36 (14.3%) | | |
| Germany | 116 (15.7%) | 39 (66.1%) | 51 (11.9%) | 26 (10.4%) | | |
| Ireland | 112: 15.2%) | | 60 (14%) | 52 (20.7%) | | |
| USA | 104 (14.1%) | 4 (6.8%) | 54 (12.6%) | 46 (18.3%) | | |
| Other | 84 (11.4%) | 11 (18.6%) | 44 (10.3%) | 29 (11.6%) | | |
| United Kingdom | 62 (8.4%) | 1 (1.7%) | 33 (7.7%) | 28 (11.2%) | | |
| Austria | 48 (6.5%) | | 33 (7.7%) | 15 (6%) | | |
| Belgium | 20 (2.7%) | | 11 (2.6%) | 9 (3.6%) | | |
| Canada | 13 (1.8%) | | 10 (2.3%) | 3 (1.2%) | | |
| Spain | 12 (1.6%) | | 5 (1.2%) | 7 (2.8%) | | |
| **Sexual orientation, n (%)** | | | | | $X^2$= 46.68 | < .001** |
| Heterosexual | 448 (60.7%) | 45 (76.3%) | 281 (65.7%) | 122 (48.6%) | | |
| Homosexual | 136 (18.4%) | 2 (3.4%) | 77 (18%) | 57 (22.7%) | | |
| Bisexual | 102. 13.8%) | 8 (13.6%) | 48 (11.2%) | 46 (18.3%) | | |
| Other | 32. 4.3%) | | 9 (2.1%) | 23 (9.2%) | | |
| **Education Level, n (%)** | | | | | $X^2$= 20.84 | .008** |
| Primary education | 13 (1.8%) | 1 (1.7%) | 6 (1.4%) | 6 (2.4%) | | |
| Secondary education | 118 (16%) | 18 (30.5%) | 63 (14.7%) | 37 (14.7%) | | |
| Post-secondary education | 124 (16.8%) | 17 (28.8%) | 65 (15.2%) | 42 (16.7%) | | |
| Higher education | 399 (54.1%) | 23 (39%) | 246 (57.5%) | 130 (51.8%) | | |
| Other | 16 (2.2%) | | 7 (1.6%) | 9 (3.6%) | | |
| **Resilience Level (BRS), mean (SD)** | 3.26 (± .8) | 3.79 (± .74) | 3.3 (± .75) | 3.01 (± .85) | *F*(2, 732) = 21,86 | < .001** |
| **Stress Level (PSS), mean (SD)** | 19.18 (± 8.15) | 13.78 (± 6.01) | 18.62 (± 7.79) | 21.39 (± 8.44) | *F*(2, 732) = 24.74 | < .001** |

*Note*. All percentages and n are column-wise. The "prefer not to say" option (for the questions about gender, ethnicity and sexual orientation) was not included here.
* $p < .05$, ** $p < .01$

**Table 2**

***Traceurs' Parkour specific answers (n and frequency)***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Training experience** | ≤ 1 year<br>2 (3.4%) | 1 to 3 years<br>12 (20.3%) | > 3 to 5 years<br>10 (16.9%) | > 5 to 7 years<br>12 (20.3%) | > 7 to 9 years<br>7 (11.9%) | > 9 to 11 years<br>9 (15.3%) | > 11 years<br>7 (11.9%) |
| **Training frequency before COVID-19** | < 1 day<br>3 (5.1%) | 1 day<br>11 (18.6%) | 2 to 3 days<br>31 (52.5%) | 4 to 5 days<br>11 (18.6%) | 6 to 7 days<br>3 (5.1%) | | |
| **Training frequency during COVID-19** | < 1 day<br>16 (27.1%) | 1 day<br>10 (16.9%) | 2 to 3 days<br>22 (37.3%) | 4 to 5 days<br>9 (15.3%) | 6 to 7 days<br>2 (3.4%) | | |
| **People per training session before COVID-19** | 1 person (only yourself)<br>4 (6.8%) | 2 to 4 people<br>16 (27.1%) | 5 to 7 people<br>15 (25.4%) | 8 to 10 people<br>12 (20.3%) | > 10 people<br>12 (20.3%) | | |
| **People per training session during COVID-19** | 1 person (only yourself)<br>19 (32.2%) | 2 to 4 people<br>33 (55.9%) | 5 to 7 people<br>3 (5.1%) | 8 to 10 people<br>2 (3.4%) | > 10 people<br>2 (3.4%) | | |
| **Active members in sports community** | ≤ 5 people<br>8 (13.6%) | 6 to 10 people<br>7 (11.9%) | 11 to 15 people<br>13 (22%) | 16 to 20 people<br>9 (15.3%) | > 20 people<br>21 (35.6%) | | |

*Note. N= 59*

### 3.2 Resilience levels and stress levels

The three groups had medium average resilience scores, the traceurs had a low mean stress score and the people doing other sports as well as the people doing no sport had moderate average stress scores (Table 1). The correlation between all participants' resilience- and stress levels was tested was significantly and strong negative ($r$ = -.546, $p$ < .001) confirming the first hypothesis. A medium negative correlation was found between resilience and stress for traceurs ($r$ -.361, $p$ = .003) as well as for people doing other sports ($r$ -.49, $p$ < .001) as shown in Figure 2. People doing no sport showed a strong negative correlation between resilience and stress ($r$ -.579, $p$ < .001, Figure 2).

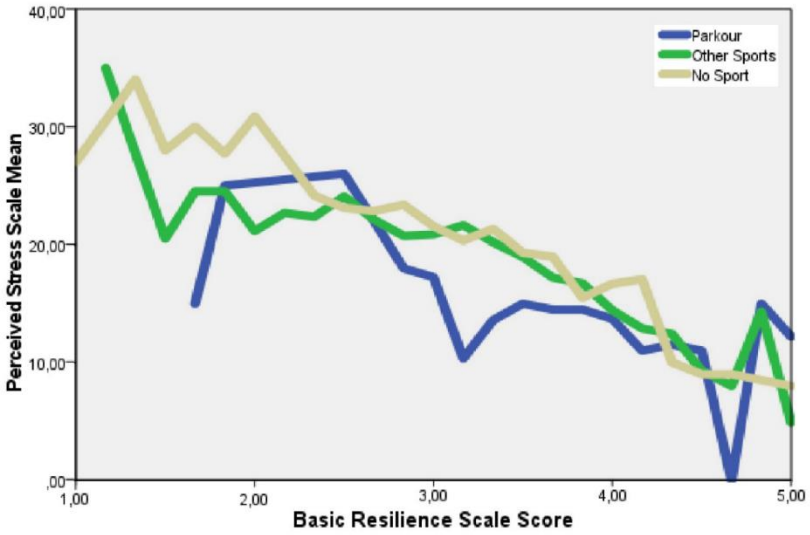


**Figure 2:** Means of stress levels (PSS, Y-axis) plotted on resilience scores (BRS scores, X-axis) for the three independent groups. Traceurs are represented by the blue line ($r$ -.361, $p$ = .003), people doing other sports by the green line ($r$ -.49, $p$ < .001), and people doing no sport by the beige line ($r$ -.579, $p$ < .001).

### 3.3 Sport groups, resilience levels and stress levels

A one-way MANOVA was conducted to investigate the relationship between the independent groups, yielding statistically significant differences between the sport groups on resilience- and stress levels ($F$[4, 1464] = 14.82, $p$ < .001, partial $\eta^2$ = .039, Pillai's Trace = .078). Univariate ANOVAs for the two dependent variables resilience- and stress levels (Table 1) yielded statistically significant difference between type of sport for resilience scores (Hypothesis 2, $F$[2, 732] = 21,86, $p$ < .001, partial $\eta^2$ = 0.056) as well as for stress (Hypothesis 3, $F$[2, 732] = 24.74, $p$ < .001, partial $\eta^2$ = 0.063). Games-Howell post-hoc analyses revealed significantly higher resilience and lower stress levels in traceurs than in people doing other sports ($p$ < .001, $p$ < .001) as well as in people doing no sport ($p$ < .001, $p$ < .001, Table 3). People doing other sports were shown to have higher resilience- ($p$ = .001), and lower stress scores ($p$ < .001) than people doing no sport. Thus, hypotheses two and three were confirmed.

**Table 3**
***Comparisons of resilience levels (BRS) and stress levels (PSS) between sport groups***

| | Comparison | Mean Difference | P value |
|---|---|---|---|
| **Resilience** | Parkour vs Other Sports | 0.49 | < .001** |
| | Parkour vs No Sport | 0.72 | < .001** |
| | Other Sports vs No Sport | 0.23 | .001** |
| **Stress** | Parkour vs Other Sports | -4.84 | < .001** |
| | Parkour vs No Sport | -7.61 | < .001** |
| | Other Sports vs No Sport | -2.78 | < .001** |

* $p < .05$, ** $p < .01$

### 3.4 Mediation of resilience levels on sport and stress levels

The mediating role of resilience on the relationship of parkour on stress levels was assessed with PROCESS and corrected for age. As the type of sport is a categorical variable, it resulted into two regressions each. One was for the comparison between parkour against other sports, and the second one was for parkour against no sport. An overview of pathways, beta coefficients and significant levels are presented in Figure 3.

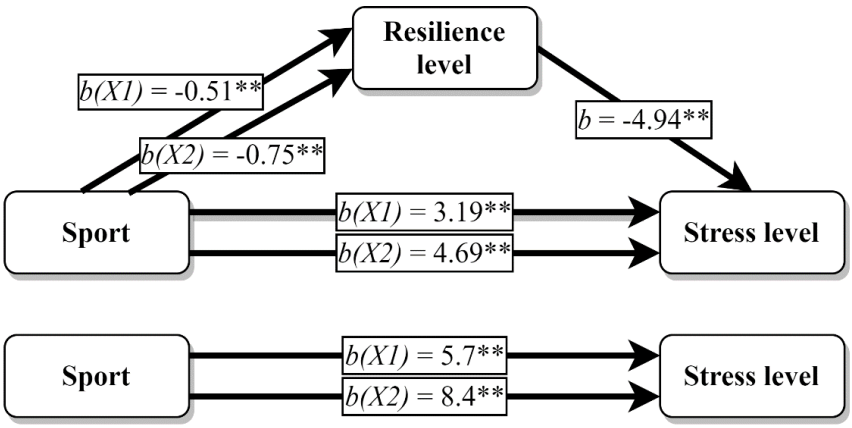


**Figure 3:** Beta coefficients for pathways showing the mediation effect of BRS score as well as the direct and total effect between the changes in PSS score depending on the comparison of sport groups (X1=Parkour vs other sports, X2=Parkour vs no sport, *p<.01, **p<.001).

The first two regressions with sport group predicting resilience levels were significant (Parkour vs other sports: $b = -0.51$, $t(716) = -4.78$, $p < 0.001$, parkour vs no sport: $b = -0.75$, $t(716) = -6.64$, $p < 0.001$). Which signaled that the type of sport predicts resilience levels. The covariate age was also shown to be a significant predictor for resilience levels ($b = 0{,}01$, $t(716) = 3.39$, $p < 0.001$).

The indirect effect of type of sport on resilience levels was significant as well (parkour vs other sports: $b = 3.19$, $t(715) = 3.76$, $p < .001$, parkour vs no sport: $b = 4.69$, $t(715) = 5.11$, $p < .001$),

proving that the type of sport predicts stress level when taking the resilience levels as mediator into account. The regression of stress levels on resilience levels was significant ($b$ = -4.94, $t$(715) = -14.93, $p$ < .001), indicating that resilience levels predict stress levels. Age was a significant covariate again ($b$ = -.19, $t$(715) = -9.04, $p$ < .001).

The direct effect (without taking the mediator resilience level into account) of type of sport on resilience levels was significant as well (parkour vs other sports: *b = 5.7, t(716) = 6.42, p < .001*, parkour vs no sport: $b$ = $b$ = 8.4, $t$(716) = 8.82, $p$ < .001) and prove that the type of sport predicts stress level. Again, age was a significant covariate ($b$ = -.23, $t$(716) = -9.19, $p$ < .001), but was comparable to when resilience was taken into account as a mediator.

The mediation analysis indicated that the expected mediation of resilience on the relationship between sport group and stress levels occurred (parkour vs other sports: X1 indirect = 2.51, *SE* = 0.54, 95% CI[1.47, 3.6], parkour vs no sport: x2 indirect = 3.7, SE = 0.6, 95% CI[2.58, 5.92]), confirming the fourth hypothesis.

### 3.5 Traceurs' training experience and resilience levels

There were no statistically significant differences in resilience found between any of the levels of traceurs training experience ($F$[6, 52] = 1.12, $p$ = .36, partial $\eta^2$ = 0.12) as shown in Table 4, rejecting the fifth hypothesis.

**Table 4**
***Traceurs' resilience levels per level of training experience***

| | n | Mean | SD | Test statistic | P value |
|---|---|---|---|---|---|
| All | 59 | 3.79 | ± .74 | $F$(6, 52) = 1.12 | .36 |
| ≤ 1 year | 2 | 3.92 | ± 1.3 | | |
| > 1 to 3 years | 12 | 3.99 | ± .63 | | |
| > 3 to 5 years | 10 | 3.53 | ± .7 | | |
| > 5 to 7 years | 12 | 3.44 | ± .96 | | |
| > 7 to 9 years | 7 | 3.88 | ± .8 | | |
| > 9 to 11 years | 9 | 3.91 | ± .55 | | |
| > 11 years | 7 | 4.14 | ± .45 | | |

* $p$ < .05, ** $p$ < .01

## 4. Discussion

The current study opened a new research field about parkour, stress and resilience. It aimed to investigate the influence of parkour, compared to other sports and no sport, on the stress and resilience levels during the COVID-19 pandemic. Traceurs were expected to show higher resilience levels, which were assumed to lead to lower levels of stress. This was based on previous studies (Johnson, 2015; Ozkara et al., 2016; Strafford et al., 2018), the resemblance of parkour's philosophy and resilience (Bavinton, 2007; Edwardes, 2009; Parkour Generations, n.d.; Stoltz, 1997) as well as

the fact that aspects suggested to increase resilience can be found in parkour and its underlying philosophy (American Psychological Association, 2012; Atkinson, 2009; Edwardes, 2009; Holzmüller & Braumüller, 2020). The statistical analysis confirmed this effect by showing significantly higher resilience- and significantly lower stress levels in traceurs. In addition, the mediating role of resilience in this relationship was confirmed. Traceurs' training experience in years was not significantly related to their resilience levels. Thus, training experience was not a possible explanation for traceurs higher resilience levels in the current research.

### 4.1 Resilience and stress

Resilience- and stress levels were strong negatively correlated for all participants as well as the no sport group, and medium negative for the traceurs as well as the other sports group. This proved the basic assumption of this research, that that people with higher resilience levels have lower levels of stress during the Covid-19 pandemic and vice versa, supporting the already existing body of research (Barzilay et al., 2020; García-León et al., 2019). It provided further evidence for the fact that resilience is an important factor during the pandemic (Vinkers et al., 2020). And in turn it implied that increasing peoples' level of resilience can reduce their stress levels and the adverse effects of the Covid-19 pandemic. It was concluded, that finding factors that could increase people's resilience levels during the Covid-19 pandemic, like parkour, is important as it can help people to get better through these though and restricting times.

### 4.2 Parkour, resilience and stress

Traceurs were shown to be more resilient and to have lower stress levels than people doing other- or no sport, which was not established before by research. The relationship between parkour and stress was mediated by the participants' resilience levels, indicating that parkour first increases peoples' resilience levels which in turn lowers their stress levels. This supports the hypothesized conceptual similarity between the concept of resilience and parkour's philosophy, as both incorporate the aspect of seeing obstacles as opportunities and thriving in the face of or after adversity (American Psychological Association, 2012; Bavinton, 2007; Clarke & Nicholson, 2010; Edwardes, 2009; Parkour Generations, n.d.; Stoltz, 1997). Parkour might also help actively increase the traceurs' resilience, as many aspects of it are similar to what the American Psychological Association describes as actors increasing resilience (American Psychological Association, 2012). Surprisingly, traceurs' of varying training experience do not show significantly different resilience levels, which indicates that the number of years training parkour does not affect the traceurs resilience. This opposes the expectations that if parkour would increase resilience by adapting the sports underlying philosophy, traceurs resilience would increase with the training experience in years. This might be due to the fact that the present research used a between subjects, non-longitudinal design, which does not allow to examine a within-subjects change of resilience over time. Another speculative explanation is that

people with high resilience could be more drawn to parkour compared to people with lower resilience. In this case resilience might act as a protective factor against quitting, as it helps them to deal with the adversity and occurrence of physical and mental obstacles when training parkour. People with lower resilience might find the search for opportunities and the adversity tiering, making them more likely to discontinue their parkour training. Thus, the causality of the relationship between parkour and resilience as well as other factors influencing it still need to be investigated.

### 4.3 Implications

If the observed positive relationship between parkour and resilience is based on a causal relationship, parkour could be used to build (traceurs') resilience as partly suggested by previous research (Strafford et al., 2018). Resilience has been shown to be a protective factor against several mental health problems and to be especially important in the COVID-19 pandemic (American Psychological Association, 2012; Barzilay et al., 2020; García-León et al., 2019; Vinkers et al., 2020). Indicating that traceurs have lower stress and probably also less other negative mental health effects of the Covid-19 pandemic. Parkour can be and often is trained outside, which is optimal during the Covid-19 pandemic and it's restrictions, and helps to counteract negative effects of the pandemic, like the decrease in physical activities (Pišot et al., 2020).

The use of parkour to build resilience might have direct clinical importance in general as well as under special circumstances like the COVID-19 pandemic. Parkour could possibly be used as prevention by increasing people's levels of resilience, preparing them for times of adversity. It could also be used in addition to treatment, as it could be utilized to enhance a general mindset of approaching problems and adversity, seeing them as opportunities rather than crushing obstacles. When the causal relationship has been further proven by research, clinics could add parkour aspects to their clinical interventions which accompany psychological treatment. In addition to the clinical relevance, the present research builds the foundation for a new aspect of parkour related scientific research, namely parkour's effect on resilience and stress levels.

### 4.4 Strengths and limitations

One of the biggest strengths of the current study represents its large sample size. This increased the statistical power, allowing for statistically relevant observations and more generalizable results. The representative sample size also increased the validity of the data and made it more unbiased. The sample population consisted of mainly white, younger people with high education from western countries. Thus, the presented results could possibly be generalized to this population. Another important strength of the present research was its originality. It brought a new, not yet investigated aspect into the research fields of parkour, resilience and stress. And it created a basis for further research to build upon. In addition to this, the new findings also had clinical relevance. Parkour or

aspects of it could be used to increase resilience e.g., in form of a sport group next to treatment, or in a non-clinical setting.

Due to the novelty of this research field, there are many unanswered questions to be tackled by further research to enhance the understanding of underlying mechanisms. One limitation of the current study is that it was not able to build a causal relationship between parkour, resilience- and stress levels due to the study design. Another limitation were the large differences between the three sport groups that were only partly taken into account in the statistical analysis. E.g., the traceur sample was mainly comprised of Germans and their resilience- and stress levels might have been influenced by other factors like current COVID-19 restrictions. Here, more in-depth research is needed. Another limitation was that in the early recruitment texts (Appendix B) for the social media parkour groups it was stated that the researcher would investigate whether traceurs have higher resilience and lower stress than people doing other or no sport. This might have had an anchoring effect on some participants. This was expected to be limited to participants, who realized which questions were about resilience and stress when filling out the survey. The fact that parkour and freerunning were both put in one answer option in the questionnaire is another potential problem of the current research. Some sources draw a clear distinction between parkour and freerunning (Derakhshan, 2015) and others do no (Clegg & Butryn, 2012; Merritt & Tharp, 2013). But as both share the same roots, the underlying philosophies are expected to be similar enough in order to have the same expectations on their relationships on stress and resilience. Another weakness is that people with high stress levels might be too stressed to take the time to fill out the survey, thus potentially reducing the representability of the research. Additionally, the shared survey included more questions than were used in this research, which is expected to have increased the drop-out rate. On the other hand, this also provides the opportunity to include the other parts of the survey (e.g. mindfulness, personality traits, …) in potential further research.

### 4.5 Further research

Further research should focus on investigating the newly proposed and established effect in more depth and test it critically. As the expected relation between traceurs training experience and resilience was not confirmed other possibly causal explanations need to be tested to explain traceurs higher resilience levels. A longitudinal study including between-subject differences e.g., from different sport groups, as well as within-subjects' developments of resilience levels could help investigate this relationship. Especially testing subjects who just recently started training parkour and getting into its philosophy, like seeing obstacles as opportunities, could be highly informative for this.

### 4.6 Conclusion

The current research established a new connection between parkour, resilience and stress, which was not investigated before. Traceurs were shown to have higher resilience- and lower stress levels than other participants, doing a different or no sport. Additionally, it was established that resilience levels mediate the relationship between parkour and stress levels. The context of the COVID-19 pandemic was taken into account and it was argued that parkour could possibly help people to better deal with it. A causal relationship and a clear explanation for why traceurs had higher resilience levels could not be established due to the study design, leaving room for further research to further investigate.

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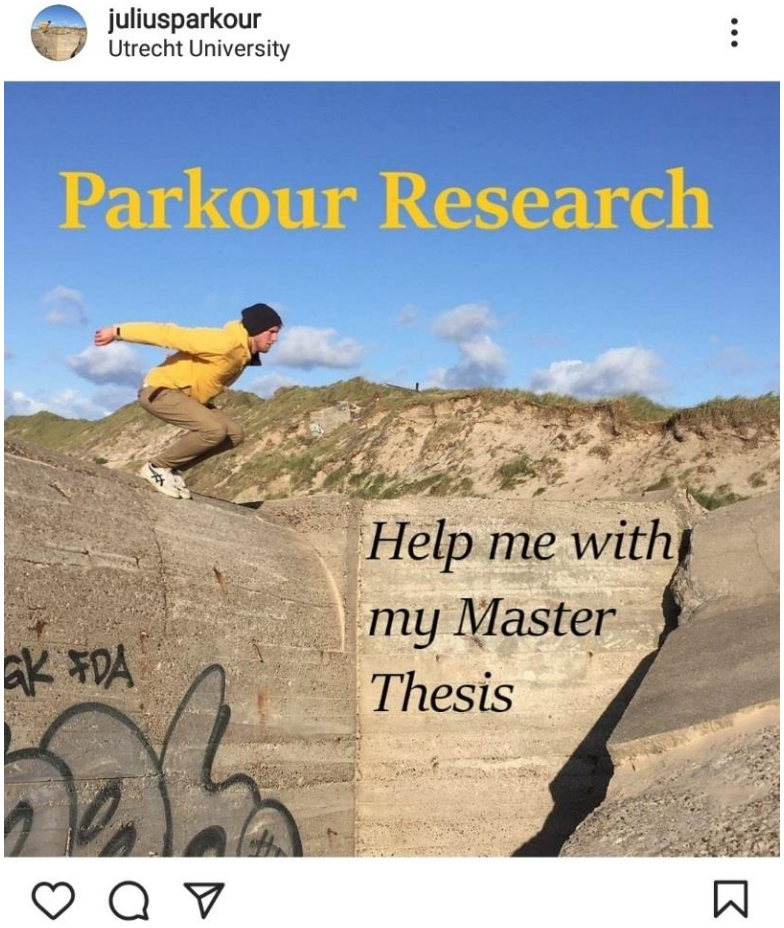
**Appendix A**

**Recruitment flyer**

## Appendix B

## Parkour specific social media recruitment post (Instagram)




**juliusparkour** Hey,
In my Master Thesis I want to see if Traceurs have a higher resilience and a lower stress levels during the current COVID-19 pandemic than people doing other sports/no sport. Thus, I would be happy if you could fill out the corresponding questionnaire and help with further understanding potential benefits of Parkour as well as simply helping me with my master thesis 👨‍🎓
The questionnaire is available in ENGLISH, DUTCH and GERMAN and as it is shared with other students there are also questions about e.g. mindfulness, sexuality and personality included. So even if you don't train parkour you'll help other students' research. Filling out the questionnaire should only take 15-20 minutes on average and you have the chance to win a free laughter-yoga class 😉
Thanks for your support and feel free to share the link with other Parkour groups and communities etc 🤗

The link is in my Bio ✌️

#parkour #research #parkourresearch #covid_19 #stress #resilience

## Appendix C1

## Demographic Questions

**Demographics:**

1. Please state your age. [*Open ended number box*]
2. From the list below, how would you identify your gender?
    - Male
    - Female
    - Transgender / Gender non-conforming
    - Other
    - Prefer not to say
3. From the list below, how would you identify your ethnicity?
    - Black (*African American, Black African, Black Caribbean, etc.)*
    - White (*Caucasian*).
    - Asian (*Middle Eastern, Eastern Russian, Chinese, Korean, Philippine, etc.)*
    - Mixed Background
    - Other
    - Prefer not to say

If 'other' is selected - open ended box to state their ethnicity.

4. Which country are you currently residing in?
    - The Netherlands
    - Germany
    - Ireland
    - Austria
    - United Kingdom
    - Italy
    - Other

If option `Other` is clicked: open-ended box to state their country.

5. What is the highest degree or level of education you have completed?
    - Primary school
    - High school / Secondary school
    - Post-secondary college / Post-leaving certificate
    - Bachelor's degree
    - Master's degree
    - Apprenticeship
    - Prefer not to say
6. From the list below, how would you identify your sexual orientation?
    - Straight/Heterosexual
    - Homosexual/Gay/Lesbian
    - Bisexual
    - Other
    - Prefer not to say

## Appendix C2

## Demographic Questions – Dutch Translation

**Demographics:**

1. Wat is uw leeftijd? [*Open ended number box*]
2. Als u kijkt naar de onderstaande lijst, hoe identificeert u uw geslacht?
    - Man
    - Vrouw
    - Transgender / Gender non-conforming
    - Anders
    - Zeg ik liever niet
3. Als u kijkt naar de onderstaande lijst, hoe identificeert u uw etniciteit?
    - Zwart (*Afrikaans Amerikaans, Zwart Afrikaans, Afro-Caraïbisch, etc.)*
    - Blank *(Kaukasisch)*
    - Gemixte achtergrond
    - Aziatisch *(Midden-Oosters, Oost-Russisch, Chinees, Koreans, Filipijns)*
    - Anders

If ‘other’ is selected – open ended box to state their ethnicity

4. In welk land verblijft u momenteel?
    - Nederland
    - Duitsland
    - Ierland
    - Oostenrijk
    - Verenigd Koninkrijk
    - Verenigde Staten
    - Canada
    - Zuid-Korea
    - Italië
    - Anders

If option `Other` is clicked: (*stating their country*)

5. Wat is uw hoogst afgeronde opleiding?
    - Basisschool
    - Middelbare school
    - MBO
    - HBO / WO Bachelor
    - HBO / WO Master
    - Beroepsopleiding (*Apprenticeship)*
    - Zeg ik liever niet
6. Als u kijkt naar de onderstaande lijst,

hoe identificeert u uw seksuele geaardheid?

- Hetero/Heteroseksueel
- Homoseksueel/Homo/Lesbienne
- Biseksueel
- Anders
- Zeg ik liever niet

## Appendix C3

## Demographic Questions – German Translation

**Demografische Fragen:**

1. Bitte nennen Sie Ihr Alter: [*Open ended number box*]
2. Aus der unteren Liste, wie würden sie ihr Geschlecht identifizieren?
    - Männlich
    - Weiblich
    - Transgender / nicht geschlechtskonform
    - Anderes
    - Ich möchte das nicht angeben
3. Aus der unteren Liste, wie würden sie ihre Ethnie identifizieren?
    - Schwarz (Af*roamerikanisch, Schwarzafrianisch, Schwarz-Karibisch, etc.)*
    - Weiß (*Kaukasisch*)
    - Asiatisch (*Mittlerer Osten, Ostrussland, Chinesisch, Koreanisch, Philippinisch, etc.)*
    - Gemischter Herkunft
    - Andere
    - Ich möchte das nicht angeben

If ‘andere’ is selected - open ended box to state their enthnicity.

4. In welchem Land leben Sie zurzeit?
    - Die Niederlande
    - Deutschland
    - Irland
    - Östereich
    - Vereinigtes Königreich (UK)
    - Italien
    - Anderes

If option `Other` is clicked: open-ended box to state their country.

5. Was ist die höchste Ausbildungsstufe, die Sie abgeschlossen haben?
    - Grundschule
    - Weiterführende Schule
    - Fachhochschuldiplom
    - Bachelor
    - Master
    - Ausbildung
    - Ich möchte das nicht angeben
6. Aus der unteren Liste, wie würden Sie ihre sexuelle Orientierung identifizieren?
    - Heterosexuell
    - Homosexuell/Schwul/Lesbisch
    - Bisexuell
    - Andere
    - Ich möchte das nicht angeben

## Appendix D1

## Brief Resilience Scale (BRS)

The following questions will relate to resilience levels.

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

1. I tend to bounce back quickly after hard times
2. I have a hard time making it through stressful events.
3. It does not take me long to recover from a stressful event.
4. It is hard for me to snap back when something bad happens.
5. I usually come through difficult times with little trouble.
6. I tend to take a long time to get over setbacks in my life.

## Appendix D2

## Brief Resilience Scale (BRS) – Dutch Translation

De volgende vragen hebben betrekking op weerbaarheid levels.

1 = helemaal niet mee eens, 2 = niet mee eens, 3 = neutraal, 4 = mee eens, 5 = helemaal mee eens

1. Na een moeilijke periode veer ik meestal gemakkelijk weer terug
2. Ik vind het moeilijk om me door stressvolle gebeurtenissen heen te slaan.
3. Het kost me weinig tijd om te herstellen van een stressvolle gebeurtenis
4. Ik vind het moeilijk om het snel van me af te schudden als er iets ergs is gebeurd.
5. Ik sla me meestal redelijk probleemloos door moeilijke periodes heen
6. Het kost me meestal veel tijd om over tegenslagen in mijn leven heen te komen

## Appendix D3

## Brief Resilience Scale (BRS) – German Translation

Die folgenden Fragen betreffen Ihr Belastbarkeitslevel.

1 = Stimme überhaupt nicht zu, 2 = Stimme eher nicht zu, 3 = Neutral, 4 = Stimme eher zu, 5 = Stimme vollkommen zu

1. Ich neige dazu mich nach schwierigen Zeiten schnell zu erholen.
2. Es fällt mir schwer, stressige Situationen durchzustehen.
3. Ich brauche nicht viel Zeit, um mich von einem stressigen Ereignis zu erholen.
4. Es fällt mir schwer zur Normalität zurückzukehren, wenn etwas Schlimmes passiert ist.
5. Normalerwiese überstehe ich schwierige Zeiten ohne größere Probleme.
6. Ich brauche tendenziell lange, um über Rückschläge in meinem Leben hinwegzukommen.

## Appendix E1

## Perceived Stress Scale (PSS-10)

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

0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and stressed?
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that happened that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

## Appendix E2

## Perceived Stress Scale (PSS-10) – Dutch Translation

De volgende vragen gaan over de huidige COVID-19 situatie en hoe deze u heeft beïnvloed en nog steeds beïnvloedt.

0 = nooit, 1 = bijna nooit, 2 = soms, 3 = vaak, 4 = zeek vaak

1. In de afgelopen maand, hoe vaak was u overstuur vanwege iets dat onverwacht gebeurde?
2. In de afgelopen maand, hoe vaak voelde u dat u niet in staat was controle te hebben over de belangrijke dingen in uw leven
3. In de afgelopen maand, hoe vaak voelde u zich nerveus en “gestrest”?
4. In de afgelopen maand, hoe vaak voelde u zich zelfverzekerd over uw vermogen om met persoonlijke problemen om te gaan?
5. In de afgelopen maand, hoe vaak voelde u dat dingen gingen zoals u wilde?
6. In de afgelopen maand, hoe vaak voelde u dat u niet kon omgaan met (of het hoofd kon bieden aan) alle dingen die u moest doen?
7. In de afgelopen maand, hoe vaak kon u uw irritaties in uw leven onder controle houden?
8. In de afgelopen maand, hoe vaak voelde u dat u greep had op de dingen?
9. In de afgelopen maand, hoe vaak was u boos omdat dingen buiten uw controle waren?
10. In de afgelopen maand, hoe vaak voelde u dat moeilijkheden zich zo hoog opeenstapelden dat u ze niet kon overwinnen?

## Appendix E3

### Perceived Stress Scale (PSS-10)– German Translation

Die folgenden Fragen beziehen sich auf die aktuelle COVID-19-Situation und wie sie Sie beeinflusst hat und immer noch beeinflusst.

0 = Nie, 1 = Fast nie, 2 = Manchmal, 3 =Ziemlich oft, 4 = Sehr oft

1. l. Wie oft hatten Sie sich im letzten Monat darüber aufgeregt, dass etwas völlig Unerwartetes eingetreten ist?
2. Wie oft hatten Sie im letzten Monat das Gefühl, wichtige Dinge in Ihrem Leben nicht beeinflussen können?
3. Wie oft hatten Sie sich im letzten Monat nervös und gestresst gefühlt?
4. Wie oft hatten Sie im letzten Monat sicher im Umgang mit persönlichen Aufgaben und Problemen gefühlt?
5. Wie oft hatten Sie im letzten Monat das Gefühl, dass sich die Dinge nach Ihren Vorstellungen entwickeln?
6. Wie oft hatten Sie im letzten Monat das Gefühl, mit all den anstehenden Aufgaben und Problemen nicht richtig umgehen zu können?
7. Wie oft hatten Sie im letzten Monat das Gefühl, mit Ärger in Ihrem Leben klar zu kommen?
8. Wie oft hatten Sie im letzten Monat das Gefühl, alles im Griff zu haben?
9. Wie oft hatten Sie sich im letzten Monat darüber geärgert, wichtige Dinge nicht beeinflussen zu können?
10. Wie oft hatten Sie im letzten Monat das Gefühl, dass sich Probleme so aufgestaut haben, dass Sie diese nicht mehr bewältigen können?

## Appendix F1

## Sport Questions

PK1: What is your main Sport (the sport you spend the most hours per month on)?

1. Parkour/ Freerunning
2. Bouldering/ Climbing
3. Yoga
4. Football (Soccer)
5. Running
6. Gym/ Workout
7. Other --> open ended
8. No Sport --> skip sports questions

The following sport related questions are all focusing on the main sport you stated in the previous question.

PK2: Training experience in years?

1. ≤1 year
2. 1 to 3 years
3. > 3 to 5 years
4. > 5 to 7 years
5. > 7 to 9 years
6. > 9 to11 years
7. > 11 years

PK3: Average training frequency (days per week) before COVID-19?

1. < 1 day
2. 1 day
3. 2 to 3 days
4. 4 to 5 days
5. 6 to 7 days

PK4: Average training frequency (days per week) during COVID-19?

1. < 1 day
2. 1 day
3. 2 to 3 days
4. 4 to 5 days
5. 6 to 7 days

PK5: Average number of people who took part in a training session before COVID-19?

1. 1 person= only yourself
2. 2 to 4 people
3. 5 to 7 people
4. 8 to 10 people
5. > 10 people

PK6: Average number of people who take part in a training session during COVID-19?

1. 1 person= only yourself
2. 2 to 4 people
3. 5 to 7 people
4. 8 to 10 people

5. > 10 people

PK7: Number of active members in Sport Community (Group/Association/...)?

1. ≤5 people
2. 6 to10 people
3. 11 to 15 people
4. 16 to 20 people
5. >20 people

## Appendix F2

## Sport Questions – Dutch Translation

Wat is uw voornaamste sport (de sport waaraan u de meeste uren per maand besteedt)?

1. Parkour/ Freerunning
2. Bouldering/Klimmen
3. Yoga
4. Voetbal
5. Volleyball
6. Rennen
7. Geen sport --> skip sportvragen
8. Anders --> open-ended box

De volgende sport gerelateerde vragen focussen allemaal op de sport die u in de vorige vraag heeft aangegeven.

Training ervaring in jaren?

1. ≤1 jaar
2. 1 tot 3 jaren
3. > 3 tot 5 jaren
4. > 5 tot 7 jaren
5. > 7 tot 9 jaren
6. > 9 tot 11 jaren
7. > 11 jaren

Gemiddelde training frequentie (dagen per week) voor COVID-19?

1. < 1 dag
2. 1 dag
3. 2 tot 3 dagen
4. 4 tot 5 dagen
5. 6 tot 7 dagen

Gemiddelde training frequentie (dagen per week) tijdens COVID-19?

1. < 1 dag
2. 1 dag
3. 2 tot 3 dagen
4. 4 tot 5 dagen
5. 6 tot 7 dagen

Gemiddeld aantal mensen dat deelneemt aan een training voor COVID-19?

1. 1 persoon= Solo sessie, thuis workout, …
2. 2 tot 4 personen
3. 5 tot 7 personen
4. 8 tot 10personen
5. > 10 personen

Gemiddeld aantal mensen dat deelneemt aan een training tijdens COVID-19?

1. 1 persoon= Solo sessie, thuis workout, …
2. 2 tot 4 personen
3. 5 tot 7 personen
4. 8 tot 10personen

5. > 10 personen

Aantal actieve leden in de sportgemeenschap (groep/vereniging/...)?

1. ≤5 personen
2. 6 tot10 personen
3. 11 tot 15 personen
4. 16 tot 20 personen
5. >20 personen

## Appendix F3

## Sport Questions – German Translation

Was ist ihre Hauptsportart (die Sportart, für die Sie monatlich die meisten Stunden aufwenden)?

1. Parkour/ Freerunning
2. Bouldern/ Klettern
3. Yoga
4. Fußball
5. Laufen/Joggen
6. Fittnesstudio/ Workout
7. Anderer Sport à Open ended Box
8. Kein Sport à skip Sport Questions

Die folgenden Sport bezogenen Fragen beziehen sich alle auf die Hauptsportart welche Sie vorher genannt haben.

Trainingserfahrung in Jahren?

1. ≤1 Jahr
2. 1 bis 3 Jahre
3. > 3 bis 5 Jahre
4. > 5 bis 7 Jahre
5. > 7 bis 9 Jahre
6. > 9 bis 11 Jahre
7. > 11 Jahre

Durchschnittliche Trainingsfrequenz (Tage pro Woche) vor COVID-19?

1. < 1 Tag
2. 1 Tag
3. 2 bis 3 Tage
4. 4 bis 5 Tage
5. 6 bis 7 Tage

Durchschnittliche Trainingsfrequenz (Tage pro Woche) während COVID-19?

1. < 1 Tag
2. 1 Tag
3. 2 bis 3 Tage
4. 4 bis 5 Tage
5. 6 bis 7 Tage

Durchschnittliche Anzahl an Personen die vor COVID-19 am Training teilnahmen?

1. 1 Person = nur Sie selbst
2. 2 bis 4 Personen
3. 5 bis 7 Personen
4. 8 bis 10 Personen
5. > 10 Personen

Durchschnittliche Anzahl an Personen die während COVID-19 am Training teilnehmen?

1. 1 Person = nur Sie selbst
2. 2 bis 4 Personen
3. 5 bis 7 Personen

4. 8 bis 10 Personen
5. > 10 Personen

Anzahl der aktiven Mitglieder in der Sportgemeinschaft (Gruppe/Verein/...)?

1. ≤5 Personen
2. 6 bis 10 Personen
3. 11 bis 15 Personen
4. 16 bis 20 Personen
5. >20 Personen

## Appendix G1

## Information Letter

**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*
- Keith Anthony Judge at *k.a.judge@students.uu.nl*
- Sarah Elise Sabine Schoenmakers at *s.e.s.schoenmakers@students.uu.nl*
- Julius Thomas Habbel at *j.t.habbel@students.uu.nl*
- Sarah Johanna Duda at *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 do 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 with answering the questionnaire, many resources and organisations will be provided should you feel the need to follow up with them. There will also be a '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*, or any of the following contacts:

- Supervisor: Dr Esther van Duin at *e.d.a.vanduin@uu.nl*
- Independent Data Protection officer within Utrecht University at *privacy@uu.nl*

As mentioned, you can withdraw your data any time 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*.

**Date**

02/11/2020

**Researchers**
Karimah Halimah Haselhoef
Keith Anthony Judge
Sarah Elise Sabine Schoenmakers
Julius Thomas Habbel
Sarah Johanna Duda

**Supervisor**
Dr Esther van Duin.

## Appendix G2

## Information Letter – Dutch Translation

**Studie titel:** Onderzoek naar stress- en weerbaarheidsniveaus tijdens de COVID-19 pandemie.

**Uitnodiging**

U wordt uitgenodigd om te overwegen deel te namen aan het onderzoek: 'Onderzoek naar stress- en weerbaarheidsniveaus tijdens de COVID-19 pandemie'. Dit project wordt uitgevoerd voor de afronding van de Master of Science in klinische psychologie aan de Universiteit Utrecht, Utrecht, Nederland. De studenten zijn:

- Karimah Halimah Haselhoef at *k.h.haselhoef@students.uu.nl*
- Keith Anthony Judge at *k.a.judge@students.uu.nl*
- Sarah Elise Sabine Schoenmakers at *s.e.s.schoenmakers@students.uu.nl*
- Julius Thomas Habbel at *j.t.habbel@students.uu.nl*
- Sarah Johanna Duda at *s.j.duda@students.uu.nl*

Voordat u beslist of u wilt deelnemen, is het belangrijk dat u begrijpt waarom dit onderzoek wordt uitgevoerd en wat het inhoudt. Neem de tijd om deze informatie aandachtig te lezen en bespreek deze ment vrienden en familie als u dat wenst. Aarzel niet om contact op te nemen met de onderzoekers als er iets onduidelijk lijkt of als u meer informatie wilt.

**Doel van het onderzoek**

Het doel van dit onderzoek is om te onderzoeken of er mogelijke verschillen en associaties zijn binnen en tussen stress en weerbaarheid. Het is een vereiste voor de gedeeltelijke afronding van de Master opleiding in Klinische psychologie aan de Universiteit Utrecht, Nederland.

**Moet ik meedoen?**

U beslist zelf of u al dan niet wilt deelnemen. Als u besluit deel te nemen, wordt u gevraagd om een toestemmingsformulier in te vullen, maar er gerust een screenshot van. Het is mogelijk om uw gegevens uit dit onderzoek te halen of vragen te stoppen op elk moment zonder het geven van redenen en zonder nadelige gevolgen. Hoe u dit doet, wordt verderop uitgelegd.
Als u de verwijdering van uw gegevens aanvraagt nadat deze al door de onderzoekers zijn geanalyseerd en berekend, is het onmogelijk om ze te verwijderen.

**Wat moet ik doen als ik deelneem?**

U wordt gevraagd om dit informatieblad te lezen, akkoord te gaan en enkele vragen te beantwoorden. Het gehele enquêteproces neemt naar verwachting niet meer dan 20 minuten van uw tijd in beslag. U wordt niet gevraagd om persoonlijke gegevens zoals uw naam, e-mailadres, achternaam, adres, bankrekeninggegevens of uw volledige telefoonnummer of mobiele nummer. Alle informatie die u verstrekt, kan en zal niet worden herleid tot u of het apparaat waarop u de enquête hebt ingevuld, aangezien alle gegevens en informatie die u verstrekt anoniem zijn en vertrouwelijk worden behandeld.

**Wat zijn de mogelijke nadelen en risico's van de deelname?**
Er zijn geen voorziene nadelen en risico's van de deelname. Sommige vragen kunnen echter verontrustend of moeilijk te beantwoorden zijn voor sommige deelnemers, omdat ze vragen om uw seksualiteit, gezondheidsstatus en etniciteit. Wanneer u klaar bent met het beantwoorden van de vragenlijst, zullen er meerdere bronnen en organisaties ter beschikking worden gesteld als u de behoefte voelt om hiermee in contact te komen. Er is ook een optie 'Zeg ik liever niet' voor deze antwoorden.

**Wat zijn de voordelen van deelname?**
Door deel te nemen aan dit onderzoek, levert u een grote bijdrage aan de wetenschappelijke gemeenschap. Als u deelneemt via het SONA-systeem van de Universiteit Utrecht, ontvangt u bovendien proefpersoon uren voor uw deelname aan dit onderzoek. Daarnaast heeft u ook de mogelijkheid om gebruik te maken van een gratis meditatie- en lachyogales van 30 minuten. Dit wordt verder uitgelegd in de debrief nadat u de vragenlijst heeft afgerond.

**Hoe wordt informatie over mij gebruikt?**
Zodra de gegevens zijn verzameld, worden deze veilig opgeslagen en zijn ze alleen toegankelijk op de servers van de Universiteit Utrecht. De gebruikelijke tijdlijn voor gegevensopslag is gewoonlijk 10 jaar na voltooiing volgens de richtlijnen van de American Psychological Association (APA) en de lokale ethische richtlijnen van Duitsland, Nederland en de Republiek Ierland. De gegevens die u verstrekt, moeten wettelijk worden beveiligd op grond van de General Data Protection Gegulation (2016) van de Europese Unie, ongeacht waar u zich momenteel bevindt. U heeft zeggenschap over de gegevens die u verstrekt, dit betekent dat u het recht heeft om uw gegevens uit dit onderzoek te verwijderen als u dat wenst en dat u dit zonder het geven van redenen kunt doen. Dit kan door een van de onderzoeks te e-mailen, Keith Anthony Judge via k.a.judge@students.uu.nl , of een van de volgende contacten:

- Supervisor: Dr Esther van Duin at *e.d.a.vanduin@uu.nl*
- Independent Data Protection officer within Utrecht University at *privacy@uu.nl*

Zoals gezegd, kunt u uw gegevens op elk moment verwijderen onder vermelding van uw identificatiecode. Deze code wordt aan u gegeven zodra u het toestemmingsformulier heeft ingevuld, u wordt gevraagd om de code op te slaan. Bovendien zal de onderzoeker individualistische gegevens niet op verzoek wijzigen.

**Wie heeft het onderzoek beoordeeld?**
Dit onderzoek is ethisch beoordeeld en goedgekeurd door de FERB (Faculty Ethics Review Board), samen met begeleider Esther van Duin.

**Bedankt**
Bedankt dat u de tijd heeft genomen om deze informatie aandachtig door te lezen. Voel je vrij om het nog een door te lezen als er iets onduidelijk is. Ga nu verder met het toestemmingsformulier. Als u vragen hebt over de studie, neem dan gerust contact op met het onderzoeksteam via k.a.judge@students.uu.nl.

**Datum**

02/11/2020

**Onderzoekers**
Karimah Halimah Haselhoef
Keith Anthony Judge
Sarah Elise Sabine Schoenmakers
Julius Thomas Habbel
Sarah Johanna Duda

**Begeleider**
Dr Esther van Duin

## Appendix G3

## Information Letter – German Translation

**Titel der Studie**: Untersuchung des Stress- und Belastbarkeitslevels während der COVID-19-Pandemie.

**Einladung:**

Sie sind eingeladen, an der Forschungsstudie teilzunehmen: "Untersuchung des Stress- und Belastbarkeitslevels während der COVID-19-Pandemie."

Dieses Projekt wird von Studenten der Universität Utrecht, Utrecht, in den Niederlanden, als Teil ihres Masters of Science in Klinischer Psychologie, durchgeführt. Die Studenten sind:

- Karimah Halimah Haselhoef at *k.h.haselhoef@students.uu.nl*
- Keith Anthony Judge at *k.a.judge@students.uu.nl*
- Sarah Elise Sabine Schoenmakers at *s.e.s.schoenmakers@students.uu.nl*
- Julius Thomas Habbel at *j.t.habbel@students.uu.nl*
- Sarah Johanna Duda at *s.j.duda@students.uu.nl*

Bevor Sie sich entscheiden, ob Sie teilnehmen möchten, ist es wichtig nachzuvollziehen, warum diese Forschung durchgeführt wird und was sie beinhaltet. Bitte nehmen Sie sich Zeit, um diese Informationen sorgfältig zu lesen und mit Freunden und Verwandten zu besprechen, falls Sie dies wünschen. Zögern Sie nicht, die Forscher zu kontaktieren, wenn Sie etwas nicht verstehen oder wenn Sie weitere Informationen wünschen.

**Zweck der Forschung:**

Der Zweck dieser Forschung ist es zu untersuchen, ob es potenzielle Unterschiede und Verbindungen innerhalb- und zwischen Stress und Belastbarkeit gibt. Diese Forschungsarbeit ist eine Voraussetzung für den teilweisen Abschluss eines Master of Science in Klinischer Psychologie an der Universität Utrecht, Niederlande.

**Muss ich teilnehmen?**

Sie können frei entscheiden, ob Sie teilnehmen möchten oder nicht. Wenn Sie sich für eine Teilnahme entscheiden, werden Sie aufgefordert, ein Einverständnisformular auszufüllen. Sie können auch einen Screenshot davon machen. Es steht Ihnen frei, jederzeit und ohne Angabe von Gründen und ohne nachteilige Folgen Ihre Daten aus dieser Studie zurückzuziehen oder die Beantwortung von Fragen einzustellen. Wie Sie dies tun, wird weiter unten erläutert.
Wenn Sie die Entfernung Ihrer Daten beantragen, nachdem sie bereits von den Forschern analysiert und berechnet wurden, ist es unmöglich, sie zu entfernen.

**Was muss ich tun, wenn ich teilnehme?**

Sie werden gebeten, dieses Informationsblatt zu lesen, dem zuzustimmen und einige Fragen zu beantworten. Der gesamte Umfrageprozess wird voraussichtlich nicht mehr als **20 Minuten** Ihrer Zeit in Anspruch nehmen. Sie werden nicht nach personalisierten Daten wie Ihrem Namen, Familiennamen, Adresse, Bankkontodaten oder Ihrer vollständigen Telefon- oder Handynummer gefragt. Alle von Ihnen angegebenen Informationen **können nicht** und **werden nicht** auf Sie oder dem Gerät zurückgeführt, auf dem Sie die Umfrage abgeschlossen haben, da alle von Ihnen angegebenen Daten und Informationen anonym und vertraulich behandelt werden.

**Was sind die möglichen Nachteile und Risiken einer Teilnahme?**

Es gibt keine absehbaren Nachteile und Risiken durch die Teilnahme. Einige Fragen können für einige Teilnehmer jedoch belastend oder schwer zu beantworten sein, da sie nach Ihrer Sexualität, Ihren Gesundheitszustand und Ihre ethnische Zugehörigkeit fragen. Wenn Sie mit dem Ausfüllen des Fragebogens fertig sind, stehen Ihnen die Kontaktdaten einiger seelsorgerischer Organisationen zur Verfügung, mit denen Sie – sollten Sie dies wünschen – in Kontakt treten können und über Ihre Probleme reden können. Für diese intime Art von Fragen, steht die Antwortoption „Das möchte ich nicht sagen“ zur Verfügung, falls Sie diese Art von Fragen nicht beantworten möchten.

**Was sind die Vorteile einer Teilnahme?**

Durch die Teilnahme an dieser Forschung leisten Sie einen wichtigen Beitrag zur wissenschaftlichen Gemeinschaft. Wenn Sie über das SONA-System der Universität Utrecht teilnehmen, erhalten Sie zudem Teilnahmepunkte für Ihre Teilnahme an dieser Umfrage. Zusätzlich haben Sie die Möglichkeit, an einem kostenlosen 30-minütigen Meditations- und Lachyoga-Kurs teilzunehmen. Genauere Details hierzu werden später erläutert, sobald Sie den Fragebogen ausgefüllt haben.

**Wie werden die Informationen über mich verwendet?**

Sobald die Daten gesammelt sind, werden sie sicher gespeichert und sind nur auf den Servern der Universität Utrecht zugänglich. Die Zeitspanne der Datenspeicherung in Forschungsstudien beträgt in der Regel 10 Jahre ab Abschluss, angelehnt an den Richtlinien der American Psychological Association (APA) und lokalen Richtlinien aus Deutschland, den Niederlanden und Irland. Die von Ihnen angegebenen Daten sind aufgrund der Allgemeinen Datenschutzverordnung (2016) der Europäischen Union gesetzlich geschützt, unabhängig davon, wo Sie sich derzeit befinden.

Sie haben die Kontrolle über die von Ihnen bereitgestellten Daten. Dies bedeutet, dass Sie berechtigt sind, Ihre Daten aus dieser Studie zu entfernen, wenn Sie dies wünschen, und dies ohne Angabe Ihrer Beweggründe. Dies kann durch E-Mail an einen der Forscher erfolgen, Keith Anthony Judge bei k.a.judge@students.uu.nl, oder einer der folgenden Kontakte:

- Betreuer: Dr. Esther van Duin unter e.d.a.vanduin@uu.nl

- Unabhängiger Datenschutzbeauftragter der Universität Utrecht
  unter privacy@uu.nl

Wie bereits erwähnt, können Sie Ihre Daten jederzeit unter Angabe Ihres Identifikationscodes zurückziehen. Dieser Code wird Ihnen angezeigt, sobald Sie das Einverständnisformular ausgefüllt haben. Sie werden aufgefordert, sich diesen Code zu notieren. Darüber hinaus ändert der Forscher auf Anfrage keine individualistischen Daten.

**Wer hat die Studie überprüft?**

Diese Studie wurde vom FERB (Faculty Ethics Review Board) zusammen mit der Supervisorin Dr. Esther van Duin ethisch überprüft, bewertet und genehmigt.

**Vielen Dank**

Vielen Dank, dass Sie sich die Zeit genommen haben, dieses Informationsblatt sorgfältig zu lesen. Bitte lesen Sie es sich noch einmal durch, wenn einige Sachverhalte noch unklar für Sie sind. Bitte fahren Sie jetzt mit dem Einverständnisformular fort. Wenn Sie weitere Fragen zur Studie haben, wenden Sie sich bitte an das Forschungsteam unter k.a.judge@students.uu.nl.

**Datum:**
02/11/2020

**Forscher:**
Karimah Halimah Haselhoef
Keith Anthony Judge
Sarah Elise Sabine Schoenmakers
Julius Thomas Habbel
Sarah Johanna Duda

**Betreuerin:**
Dr. Esther van Duin

## Appendix H1

## 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 Haselhoef.

**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.
- I understand that my participation is voluntary.
- I understand that once my data has been analysed and computed, it will be impossible to be deleted.
- I understand that my data will be analysed only within the EU/EEA.

## Appendix H2

## Consent Form – Dutch Translation

**Titel van project:** Onderzoek naar stress- en weerbaarheidsniveaus tijdens de COVID-19 pandemie.

**Namen van de onderzoekers:** Keith A. Judge, Sarah Johanna Duda, Sarah Elise Sabine Schoenmakers, Julius Thomas Habbel, Karimah Halimah Haselhoef

**Begeleider:** Dr. Esther van Duin

Lees de volgende verklaringen aandachtig door en vink vervolgens het overeenkomstige vakje aan om toestemming te geven en ga verder met de vragenlijst:

- Ik heb de informatiebrief gelezen en ben volledig op de hoogte van het onderzoek.
- Ik begrijp dat ik de gelegenheid heb gehad om vragen te stellen.
- Ik ben ouder dan 18 tegen de tijd dat ik de enquête start en invul.
- Ik begrijp dat ik mijn gegeven op elk moment per e-mail kan intrekken.
- Ik begrijp dat mijn deelname vrijwillig is
- Ik begrijp dat zodra mijn gegevens zijn geanalyseerd en berekend, het onmogelijk zal zijn om te worden verwijderd.
- Ik begrijp dat mijn gegeven alleen binnen de EU/EER worden geanalyseerd.

## Appendix H3

## Consent Form – German Translation

**Titel des Projekts:** Untersuchung des Stress- und Belastbarkeitslevels während der COVID-19-Pandemie

**Namen der Forscher:** Keith A. Richter, Sarah Johanna Duda, Sarah Elise Sabine Schoenmakers, Julius Thomas Habbel, Karimah Halimah Haselhoef.

**Betreuerin:** Dr. Esther van Duin

Bitte lesen Sie die folgenden Aussagen sorgfältig durch und kreuzen Sie dann das entsprechende Kästchen an, um zuzustimmen und mit dem Fragebogen fortzufahren:

- Ich habe den vorherigen Informationsbrief gelesen und bin vollständig über die Studie informiert.
- Ich verstehe, dass ich die Gelegenheit hatte, Fragen zu stellen.
- Ich bin 18 Jahre oder älter, als ich die Umfrage begann und ausfüllte.
- Ich verstehe, dass ich meine Daten per E-Mail zurückziehen kann.
- Ich verstehe, dass meine Teilnahme freiwillig ist.
- Ich verstehe, dass meine Daten nach der Analyse und Berechnung nicht mehr gelöscht werden können.
- Ich verstehe, dass meine Daten nur innerhalb der EU / des EWR analysiert werden.

## Appendix I1

## Debriefing

**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 best of the researchers' ability. Don't hesitate to contact the researchers if you have questions at *k.a.judge@students.uu.nl*. or any of the following contacts:

- Supervisor: Dr Esther van Duin at *e.d.a.vanduin@uu.nl*
- Independent Data Protection officer within Utrecht University at *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
- Jigsaw YMH | Tel: +353 1 472 7010 | Email: info@jigsaw.ie
- BeLonGTo | Tel: +353 1 670 6223 | Email: info@belongto.org

***Netherlands***

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

***Germany***

- Schwulenberatung Berlin | Tel: +49 (030) 446688-111 | Email: 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

***United Kingdom***

- MIND | Tel: 0300 123 3393 | Visit: mind.org.uk

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

As a thank you for participating, you can avail of one free class at one of the provided times at the following link: https://survey.uu.nl/jfe/form/SV_bqqiqqbZ0K0JycJ. More information will be explained there.

## Appendix I2

## Debriefing – Dutch Translation

**Wat nu?**

Dat is alles, u bent klaar. Dankuwel. Deze studie was bedoeld om de stress- en weerbaarheidsniveaus tijdens de COVID-19 pandemie te onderzoeken op basis van verschillende variabelen. Uw deelname blijft vrijwillig en uw gegevens worden vertrouwelijk, anoniem en veilig gehouden voor zover de onderzoekers kunnen. Neem bij vragen gerust contact op met de onderzoekers via k.a.judge@students.uu.nl, of een van de volgende contacten:

- Begeleider: Dr Esther van Duin via *e.d.a.vanduin@uu.nl*
- Onafhankelijke functionaris gegevensbescherming binnen de Universiteit Utrecht via at *privacy@uu.nl*

Wij danken u hartelijk voor uw bijdragen en begrijpen dat sommige van deze vragen wellicht verontrustend of moeilijk te beantwoorden waren. Als dit het geval is, zijn hier enkele van de vele organisaties waarmee u in contact kunt komen, mocht u daar behoefte aan hebben.

***Ierland***

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

***Nederland***

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

***Duitsland***

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

***Andere EU landen***

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

***Canada***

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

***Verenigde Staten***

- The Trevor Project | Tel: 1-866-488-7386 | Visit: thetrevorproject.org

***Verenigd Koninkrijk***

- MIND | Tel: 0300 123 3393 | Visit: mind.org.uk

**Gratis 30 minuten mediatie en lachyogales**

Als bedankje voor uw deelname kunt u op een van de aangeboden tijden gebruik maken van één gratis les via de volgende link: https://survey.uu.nl/jfe/form/SV_bqqiqqbZ0K0JycJ. Daar wordt meer informatie uitgelegd.

## Appendix I3

## Debriefing – German Translation

**Was jetzt?**

Das war's, du bist fertig. Vielen Dank. Diese Studie sollte die Stress- und Belastbarkeitslevels während der COVID-19-Pandemie anhand mehrerer Variablen untersuchen.
Ihre Teilnahme bleibt freiwillig und Ihre Daten werden nach bestem Wissen und Gewissen der Forscher vertraulich, anonym und sicher behandelt. Zögern Sie nicht, sich an die Forscher zu wenden, wenn Sie Fragen haben. Wenden Sie sich an k.a.judge@students.uu.nl oder einen der folgenden Kontakte:

- Betreuerin: Dr. Esther van Duin unter e.d.a.vanduin@uu.nl
- Unabhängiger Datenschutzbeauftragter der Universität Utrecht unter privacy@uu.nl

Wir danken Ihnen herzlichst für Ihren Beitrag und verstehen, dass einige dieser Fragen möglicherweise problematisch oder schwer zu beantworten waren. Wenn dies der Fall war, finden Sie hier einige der vielen Organisationen, mit denen Sie Kontakt aufnehmen können, falls Sie dies für erforderlich halten.

***Irland***

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

***Die Niederlanden***

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

***Deutschland***

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

***Andere EU Länder:***

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

***Kanada***

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

***Vereinigten Staaten von Amerika***

- The Trevor Project | Tel: 1-866-488-7386 | Visit: thetrevorproject.org

***Das Vereinigte Königreich***

- MIND | Tel: 0300 123 3393 | Visit: mind.org.uk

**Kostenloser 30-minütiger Yoga-Kurs für Achtsamkeitsmediation und Lachen**

Als Dankeschön für Ihre Teilnahme können Sie eine kostenlose Klasse zu einer der angegebenen Zeiten unter folgendem Link nutzen: https://survey.uu.nl/jfe/form/SV_bqqiqqbZ0K0JycJ. Weitere Informationen werden dort erklärt.