Social, Health and Organisational Psychology

MASTER THESIS

Can aversive activity planning backfire?

Examining the relationship between aversive planning, agency, well-being, and

rumination

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Abstract

The aim of the current study was to investigate the effects of aversive activity planning on subjective well-being and whether this relationship could be explained by sense of agency. Additionally, it was investigated whether individual differences in rumination moderated the relationship between aversive goal planning and sense of agency. It supports the idea that aversive activity planning lowers feelings of sense of agency and that sense of agency has a positive relationship with subjective well-being. Although, the current study did not result in a clear picture of the effects and underlying mechanism of aversive activity planning on subjective well-being, which may be due to methodological issues. This study did contribute to the existing literature on healthy planning and the use of implementation intentions. It is important to further study the effects of aversive planning on well-being, because it is inevitable to engage in aversive activities.

Keywords: planning; implementation intentions; stress; sense of agency; aversive activities; rumination

1.1 Examining the relationship between aversive planning, agency, well-being, and

rumination

Research suggests that individuals tend to avoid unpleasant, aversive tasks (McCrea, Liberman, Trope, & Sherman, 2008; Steel, 2007). However, sometimes we need to engage in everyday activities that we dislike, often for the sake of a goal. Such chores are for example, studying for a boring test to finish a course or doing a challenging workout to stay fit. In these kinds of unpleasant and challenging everyday situations individuals can help themselves persist by using self-regulatory strategies (Hennecke, Czikmantori, & Brandstätter, 2018).

Implementation intentions (i.e., if-then planning) are an example of a self-regulatory intervention that can be used to increase goal attainment (Gollwitzer, 1999). Implementation intentions link critical situational cues with instrumental goal-directed responses: "If situation X arises, I will perform goal-directed response Y!". Thus, implementation intentions commit the individual to specific plans as to when, where, and how one wants to act toward realizing one's goals, even if the intended activity is aversive (Gollwitzer, 1999; Gollwitzer & Sheeran, 2006). Because of its effectiveness in a broad range of fields (Gollwitzer & Sheeran, 2006), psychological interventions have increasingly promoted implementation intentions. However, since aversive activities have been found to be positively related to stress (Blunt & Pychyl, 2000), it is remarkable that relatively little attention is paid to possible health risks of planning stressful, aversive activities using implementation intentions.

So far, prior research on the relationship between implementation intentions, goal attainment, and well-being has mostly focused on personal goals that are in line with personal wants (Kelly, Mansel & Wood, 2015; Klug, & Maier, 2015). These goals are found to be positively associated with subjective well-being, but often are relatively less stressful compared to plans for aversive activities (Blunt & Pychyl, 2000). There appears to be a neglect in research on situations wherein individuals are trying to persist a stressful, aversive

activity through the use of implementation intentions and the effects on well-being, which is the focus of the current study.

Recent research has begun to uncover that implementation intentions for stressful, aversive activities may not be as beneficial or even have a negative impact on one's health. Schlinkert & Koole (2017; 2018) found that planning aversive activities, acted as a mild stressor, and in turn, lowered vitality and disrupted healthy appetite regulation, specifically for ruminators. However, these studies only made a distinction between implementation intention planning for aversive activities and setting intentions for fun activities.

Our study wants to, therefore, look closer at the possible health risks for planning stressful, aversive activities by making an additional distinction, that is, setting intentions for aversive activities. This means that our study will include intentions for aversive activities and fun activities, as well as implementation intention planning for aversive activities. Our goal in the present study is to add to the body of literature by investigating (i) if there are potential negative effects of setting intentions and the use of implementation intention planning for aversive activities on subjective well-being, (ii) how they can be explained, and (iii) if individual differences within this process exist.

1.2 Aversive activity planning and subjective well-being

According to Sheldon and colleagues (Sheldon and Emmons, 1995; Sheldon & Kasser, 1998; Sheldon, 2014), goal self-concordance plays an important role in the relationship between planning and well-being. Self-concordance has been conceptualized as the extent to which an individual's goals reflect their personal interests, values, needs and motives, and are self-determined, rather than dictated or required by external influences (Deci & Ryan, 2008). People often fail to select goals that are consistent, and thus well integrated with their personal wants (Sheldon, 2014). Instead they set goals because they feel

compelled to do it by external or internal pressures, which is defined as self-discordant. The

attainment of those less integrated goals can lead to wasting resources, such as time and

energy. And more importantly, this dissimilarity between personal wants and choice of goals

can result in an intrapersonal conflict (Bazerman, Tenbrunsel, & Wade-Benzoni, 1998;

O'Connor et al., 2002), which can act as a chronic stressor (Kelly et al., 2015; Schüler, Job,

Fröhlich, & Brandstätter, 2009). Pursuing more integrated goals predicts better psychological

health (Kelly et al., 2015; Sheldon, 2014).

However, it is inevitable that sometimes aversive and stressful activities have to be

planned. One can argue that setting intentions and implementation intention planning can, in

such cases, disrupt healthy goal integration, by encouraging the prioritization of less

integrated goals, which in turn can impair subjective well-being (Kelly et al., 2015; Sheldon,

2014). Based on the above theory and studies, we expect that planning aversive activities,

both with and without the use of implementation intentions, will lower subjective well-being,

compared to planning fun activities.

1.3 The alienating effect of unhealthy goal integration

One of the consequences of pursuing less integrated goals is a sense of alienation

from one's actions. In general, when we attain goals, we experience ourselves to be the agent

of a task or behavior (Brass & Haggard, 2008; Pacherie, 2008). In other words, we have a

sense of agency, which is commonly defined as the sense that one is the author of their own

actions and their consequences (Haggard and Tsakiris, 2009). Planning ahead has been found

to lower sense of agency (Damen, van Baaren, Brass, Aarts, & Dijksterhuis, 2015). However,

to our knowledge no research has been conducted to examine the relationship between sense

of agency and planning for aversive activities specifically.

Task aversiveness has been found to have a weak relationship with someone's self-identity (Blunt & Pychyl, 2000). In a philosophical manner, self-identity is related to sense of agency (Oshana, 2012). If an individual has a weak sense of self-identity, there is no basis of conviction to believe in our own actions and their consequences. Based on the above, one can argue that aversive activities may not align with our personal interests and values, and thus may not align with our preferred actions or their consequences. This incongruence can interfere with our sense of agency. We therefore hypothesize that planning for aversive activities, with or without the use of implementation intentions, leads to a lower sense of agency, compared to planning for fun activities.

1.4 The link between aversive activities, sense of agency, and well-being

One theory that has proven useful in explaining the link between aversive activities, sense of agency, and well-being is the self-determination theory (SDT; Deci & Ryan, 2008). The most central distinction in SDT is between autonomous motivation and controlled motivation. Autonomous motivation involves the experience of volition, self-authoring and choice, whereas controlled motivation involves the experience of being pressured. Previous research showed that people whose motivation is autonomous, compared to those who are performing an action merely for external reasons, have more interest, excitement and increases persistence, which in turn has positive effects on well-being (Ryan & Deci, 2000).

Aversive activities specifically have been found to be positively related to a lack of autonomy (Blunt & Pychyl, 2000). Consequently, one can argue that the planning of aversive activities may rely more on controlled motivation. Moreover, the definition of autonomy within SDT, can be considered overlapping with the definition of sense of agency and some even say sense of agency is grounded in STD (Miller & Das, 2011; Schunk & Bursuck, 2015). According to above theory and studies, one can argue that sense of agency is linked to

subjective well-being. We therefore hypothesize, that sense of agency is positively associated

with subjective well-being, in that a higher sense of agency predicts a higher subjective well-

being.

1.5 The moderating role of rumination

Planning stressful, aversive activities is inevitable and may have alienating effects,

which in turn can possibly lead to health costs (Kelly et al., 2015; Sheldon, 2014). For people

with compulsive tendencies, like chronic ruminators (Davis & Nolen-Hoeksema, 2000; Kuhl,

1981), these effects may be most pronounced. Rumination is defined as the tendency to

negatively, passively and repetitively focus on thoughts and feelings (Aldao, Nolen-

Hoeksema, & Schweizer, 2010). It is widely established that people in high, rather than low,

ruminative tendencies are associated with a risk factor for emotional and psychological

disorders (Ciesla, Felton, & Roberts, 2011; Verkuil, Brosschot, Gebhardt, & Thayer, 2010). It

is also suggested that rumination may be one mechanism linking stress sensitivity with

disorders, like depression and anxiety (Brosschot, Gerin, & Thayer, 2006; Ruscio et al., 2015;

Verkuil et al., 2010). Ruminators can thus be seen as a vulnerable group, that may experience

even more difficulties and stress regarding aversive activity planning. Therefore, our study

wants to incorporate ruminators.

Regarding goal attainment, Emmons and King (1988) found that goal conflict predicts

more rumination. And that ruminators are more likely, compared to non-ruminators, to adopt

and prioritize less integrated goals under stress (Baumann, Kaschel, & Kuhl, 2005; Brunstein,

2001), which among ruminators specifically leads to a lower subjective well-being (Baumann

et al., 2005). Ruminators are also less willing to participate in fun activities, compared to

aversive activities (Lyubomirsky & Nolen Hoeksema, 1995). Moreover, there is growing

evidence that implementation intentions for aversive activities seem to act as a stressor for

ruminators specifically (Schlinkert & Koole, 2017; Schlinkert & Koole, 2018).

Based on the above, we assume that ruminators experience more stress regarding

aversive activity planning, compared to non-ruminators. In addition, findings in the literature

show that self-efficacious persons, which is a core mechanism of sense of agency (Bandura,

1989), ruminate less (Bandura, 1992). Accordingly, we hypothesize that rumination can act

as a moderator between aversive activity planning and sense of agency. More specifically,

individuals who score high on rumination, experience more stress and therefore less sense of

agency.

1.6 The present research and hypotheses

Our main goal in the present study was, (a) to examine if aversive activity plans, with

or without the use of implementation intention planning, act as a stressor, compared to fun

activity plans, (b) if this affects sense of agency and subjective well-being in turn, and, (c)

whether individual differences in rumination moderate the relationship between aversive

activity planning and sense of agency.

We used a planning task in which participants were required to either plan an aversive

activity by only forming an intention or use a global format of implementation intention

planning (writing down a time and place). Aversive activities were defined as activities that

had to be planned, but had to be done with a lot of reluctance (Schlinkert & Koole, 2017;

Schlinkert & Koole, 2018) and were supposed to induce mild stress. In the low stress, control

condition, participants were asked to plan a fun activity by forming an intention. Our primary

outcome variable was subjective well-being.

Our first hypothesis was that planning aversive activities, with and without the use of

implementation intentions, lowers subjective well-being, compared to planning fun activities.

Our second hypothesis was that planning aversive activities, with and without the use of

implementation intentions, lowers sense of agency, compared to planning fun activities. Our

third hypothesis was that sense of agency is positively associated with subjective well-being,

in that a higher sense of agency predicts a higher subjective well-being. Fourth and last, since

ruminators experience aversive activities as more stressful (Schlinkert & Koole, 2017;

Schlinkert & Koole, 2018) and are more likely to adopt less integrated goals under stress

(Baumann et al., 2005; Brunstein, 2001), this study will include the moderating role of

ruminators on aversive activity planning and sense of agency. Therefore, our fourth

hypothesis was that individuals who score high on rumination, also experience more stress

and therefore less sense of agency, compared to individuals who score low on rumination.

Figure 1. presents a model of relations. Our intended plan was to test the hypotheses,

and only if the simple mediation and moderation hypotheses were accepted, we would further

analyse the model by performing a moderated mediation analysis, by making use of the
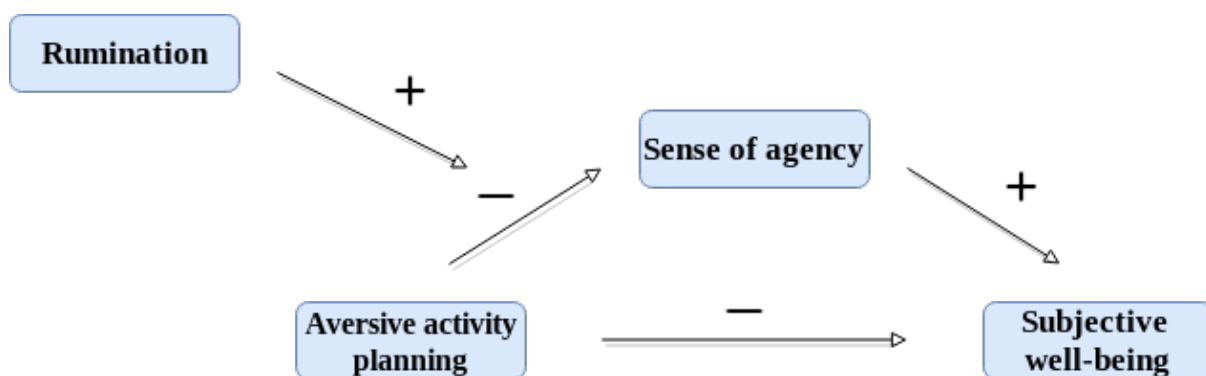
PROCESS model of Hayes (2013).

Figure 1. Proposed conceptual model of proposed hypotheses, with subjective well-being as

main outcome variable, aversive activity planning as main predictor, sense of agency as

mediator and rumination as moderator.

Methods

2.1 Participants and Design

The present study was approved by the scientific and ethical review board of the

faculty of Social and Behavioral sciences at the University Utrecht, the Netherlands. An a

priori power analysis for F-tests in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was

conducted to determine a sufficient sample size using an alpha of .05 and a power of .95. No

adequate information was found from the existing literature, so we assumed the average

effect size in behavioral science, which is small to medium. See Appendix A.

Participants were recruited via convenience sampling, which is a type of

nonprobability sampling in which participants meet certain practical criteria, such as easy

accessibility and willingness to participate (Dörnyei, 2007). The majority of the sample

included students of University Utrecht, which is an indication of convenience sampling

(Dörnyei, 2007).

Participants were 257 Dutch residents. The participants were either compensated with

participant points (PPU; UU students only) or could register for a lottery, in which ten gift

packages were distributed. From March 3 to May 20, 2020 there was the opportunity to

participate in the study. We excluded participants who did not fully complete the study ($n =$

46). After reviewing the answers of the participants in the planning task, we decided to

exclude participants who did not read the instructions properly ($n = 1$) and participants who

did not have something fun to plan in the control condition ($n = 2$). This left the data of 208

participants (168 women; average age 22 years, $SD = 4.3$; 39 male; average age 26 years, SD

$= 9.8$; 88.5 percent are currently studying; 99 percent university degree) for the statistical

analysis.

The study comprised a three factorial (aversive activity intention only vs aversive

activity implementation intention planning vs fun activity) between groups subject design.

The participants were randomly distributed over the conditions, respectively being

Ncondition1 = 72, *Ncondition2* = 68 and, *Ncontrol* = 68. Aversive activity planning and

individual differences in rumination were the main independent variables. Subjective well-

being was the main dependent variable. Sense of agency was the mediator.

2.2 Materials

Independent variables

     Planning task. In the two aversive activity conditions participants were asked to plan

an aversive activity that they had to carry out in the upcoming two weeks. In the aversive

intention participants only had to write down their intended activity. In the aversive

implementation intention condition, besides writing down their intention, participants also

had to write down where and when (which day, at what time) the plan should be carried out

and which steps should be taken to implement the plan. This was inspired by a global format

of implementation intentions (Gollwitzer, 1999). Previous studies found that this procedure

induced mild stress (Schlinkert & Koole, 2017; Schlinkert & Koole, 2018). The majority of

the participants in the two aversive activity conditions planned to study or workout. In the

control condition, which was the fun activity condition, participants were asked to write

down an intention for a fun activity. The majority of the participants planned to read a book,

workout, cook or see their friends. We chose a fun activity over a neutral activity, because

planning a neutral activity may still induce mild stress, especially when it is not a self-

initiated activity (Kazén, Baumann & Kuhl, 2003). The exact instructions for the three

conditions can be found in Appendix B.

     To see if the aversive activity conditions did induce mild stress compared to the fun

activity condition, three questions were asked after the planning task. Consecutively being,

(1) how stressed they felt about carrying out this plan ($M = 2.50$, $SD = 1.22$), (2) how

obligated they felt to carry out their plan ($M = 3.79$, $SD = 1.23$), and (3) how much they

desired to initiate this plan ($M = 2.10$, $SD = 1.16$). All questions were answered on a 5-point

Likert scale ranging from 1 (*not at all*) to 5 (*very much*). The exact instructions for the stress

manipulation can be found in Appendix C.

Rumination. To assess individual differences in rumination a validated Dutch

translation of the preoccupation subscale of the Action Control Scale (Kuhl, 1994) was used.

The scale has good psychometric properties (Diefendorff, Hall, Lord, & Strean, 2000; Kuhl,

1994) and has been extensively validated as a measure of rumination (Baumann & Kuhl,

2003; Watkins, 2004; Watkins & Baracaia, 2001). The subscale consisted of 12 items. Each

item described a concrete situation along with two possible ways of coping. An example item

is, 'When I have been working on a project for weeks and everything goes wrong: A. It takes

a lot of time to adjust myself or B. I suffer from that, but after a while I don't think about it

anymore.' Answer A is a high ruminative response. All items can be found in Appendix D.

We summed all the responses so that scores ranged from 0 to 12, whereby higher scores

indicated higher scores on rumination (Cronbach's α = .71; $M = 16.93$, $SD = 2.78$; 12 items).

We chose this subscale as a measure of rumination, because of the behavioral orientation,

which fits our theoretical framework well.

Mood. As a way for controlling for mood changes by the planning task, participants

reported their current mood before and after the planning task using a Dutch translation of the

Profile of Mood Scales (POMS; McNair, Lorr, & Droppleman, 1971). The scale consists of

32 mood types. Examples are nervous, annoyed, and energetic. Participants rated the extent

to which each word described the way there were feeling at that moment, by using a 5-point

Likert scale ranging from 1 (*not at all*) to 5 (*very*). We summed all items into a total negative

mood scale, for both timepoints. Timepoint 1 ranged from 33 to 103 ($M = 52.89$, $SD = 13.62$)

and timepoint 2 from 31 to 111 ($M = 50.09$, $SD = 13.58$), with higher scores indicating higher

negative mood. At both timepoints all subscales showed good reliability, with the Cronbach's

alphas ranging from .84 to .93. All the Cronbach's alphas and individual items can be found

in Appendix E.

Dependent variables

     Sense of agency. There is no official questionnaire that assesses sense of agency

oriented towards planning behavior. That is why, after extensive literature research, and

together with two fellow master students, we composed five questions to assess sense of

agency. All items start with 'When I think of this plan then'. An example is "I have the

feeling that others around me determine if I will achieve the plan". All items are scored on a

5-point Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The scores were

summed and ranged from 6 to 25, with higher scores indicating higher sense of agency ($M =$

19.26, $SD = 3.12$; Cronbach's $\alpha = .59$; 5 items). All items can be found in Appendix F.

     In addition, a reliability analysis was carried out on the sense of agency scale

comprising five items. Cronbach's alpha showed the questionnaire to reach low reliability (α

$=.59$). Most items appeared to be worthy of retention, resulting in a decrease in the alpha if

deleted. The one exception to this was item 4, which would increase the alpha to $\alpha = .61$, to

an acceptable reliability. An item-total correlation was calculated to further assess reliability.

Item 4 had the lowest value ($r = .383$), which confirmed the reliability analysis. As such, item

4 was removed from the agency scale ($M = 14.82$, $SD = 2.91$; Cronbach's $\alpha = .61$; 4 items).

Thereafter we conducted an exploratory factor analysis to see whether the items measure

different constructs. The results of the factor analysis can be found in Appendix F.

Subjective well-being. The following shortened versions of questionnaires were used

to assess subjective well-being. Dutch translations were used for all scales. All items can be

found in Appendix G.

The WHO-5 (World Health Organization: Regional Office for Europe, 1998) was

assessed to measure psychological well-being. It consists of five items (Wagner, Baumann &

Hank, 2016) measuring positive mood ("I have felt cheerful and in good spirits"), vitality ("I

have felt active and vigorous") and general interest ("My daily life has been filled with things

that interest me"). The WHO-5 has shown good psychometric properties (Topp, Østergaard,

Søndergaard & Bech, 2015). Participants are asked to rate each of the items on a 6-point

Likert scale from 0 (*not present*) to 5 (*constantly present*) concerning the previous 14 days.

The ratings were summed and could range from 5 to 30, with higher scores indicating higher

psychological well-being ($M = 18.68$, $SD = 4.65$; Cronbach's $\alpha = .82$; 5 items).

A short version of the symptom checklist (SCL-90-R; Derogatis, 1992) was used that

consists of 14 items to measure psychosomatic symptoms. The SCL-90-R has shown good

psychometric properties (Müller, Postert, Beyer, Furniss, & Achtergarde, 2010). Participants

are asked to rate to what extent they suffered from physical and psychological complaints in

the past week, on a 5-point Likert type scale going from 1 (*not at all*) to 5 (*very*). The ratings

were summed and could range from 14 to 70, with higher scores indicating more

psychosomatic symptoms ($M = 21.17$, $SD = 7.05$; Cronbach's $\alpha = .87$; 14 items). Examples

were headache, dizziness and palpitations.

The self-regulation inventory (SSI-K3; Kuhl & Fuhrmann, 2004) was assessed to

measure perceived stress in current life circumstances with 8 items assessing demands ("My

current life circumstances are very tough") and threats ("I must deal with big changes in my

life"). All questions were answered on a 5-point Likert scale ranging from 1 (*not at all*) to 5

(*very much*). We summed all the responses so that scores ranged from 8 to 40, whereby

higher scores indicated higher levels of perceived life stress ($M = 17.73$, $SD = 6.75$;

Cronbach's α = .89; 8 items).

Lastly, body vitality was assessed by the Body Image questionnaire (FKB-20;

Clement & Löwe, 1996). It comprises of 20 items which make up the two subscales 'vital

body dynamics' (VBD: 10 items) and 'rejecting body evaluation' (RBE: 10 items). An

example item of the body vitality scale is: "I dare to take on physical challenges". An

example item of the RBE scale is: 'I sometimes feel disgusted by myself'. Participants were

asked to rate to what extend the BIQ statements applied to them at this moment. Answers

were given on a 5-point Likert type scale going from ('*strongly disagree*' to '*strongly

agree*'). The BIQ-20 has shown good psychometric properties (Albani et al., 2006). We used

the 'vital body dynamics' subscale as a measure of body vitality, because the VBD focuses

on positive, energetic and active dimensions of body experience. The summed ratings for

body vitality could range from 10 to 50 with higher scores indicating higher body vitality (M

$= 33.62$, $SD = 5.67$; Cronbach's α = .81; 10 items).

2.3 Procedure

Detailed information about the procedure can be found in Appendix H.

Results

3.1 Correlations

Before the hypotheses were tested, the relationship between all variables was tested by conducting a correlation analysis. The intercorrelations between the variables are shown in Table 3 in Appendix K.

All proposed variables have a significance level of $p < .05$, except the correlation between sense of agency and body vitality, which was not significantly correlated. Overall, these results are in line with the expected direction of effects. Individuals who scored high on rumination reported a lower body vitality ($r = -.38$), scored higher on the symptom checklist ($r = .29$) and life stress ($r = .37$), and reported a lower psychological well-being ($r = -.45$). High scores on rumination also indicated a lower sense of agency ($r = -.30$), which is in line with our fourth hypothesis. Furthermore, individuals who scored high on sense of agency reported a higher psychological well-being ($r = .22$) and scored lower on the symptom checklist ($r = -.21$) and life stress ($r = -.27$), which is in line with our third hypothesis. The measures which were used to assess overall subjective well-being, being the WHO, SCL, FKB and SSI scales, also correlated in the expected direction. Individuals who scored high on psychological well-being, scored high on body vitality ($r = .65$) and low on the symptom checklist ($r = -.50$) and life stress ($r = -.58$).

3.2 Manipulation check

To test whether the planning manipulation was effective in evoking mild levels of stress, a one-way Analysis Of Variance (ANOVA) was conducted for each of the three statements. For the statement '*To what extent do you feel obliged to carry out the plan?*', on average the participants felt significantly more obligated in the two aversive plan conditions ($M = 4.22$, $SD = 1.05$; $M = 3.79$, $SD = 1.23$) compared to the fun plan condition ($M = 2.91$,

$SD = 1.36$, F (2, 205) = 20.99, $p < .001$, $\eta^2 = .170$). For the statement '*To what extent do you feel stressed when you think about the plan?*', on average the participants felt significantly more stressed in the two aversive plan conditions ($M = 2.79$, $SD = 1.15$; $M = 2.50$, $SD = 1.22$) compared to the fun plan condition ($M = 1.79$, $SD = 1.11$, F (2, 205) = 13.56, $p < .001$, $\eta^2 = .117$). Third and last, for the statement '*To what extent do you feel desire to initiate the plan?*', participants felt more desire to initiate their plan in the fun plan condition ($M = 3.97$, $SD = 1.04$), than in the two aversive plan conditions ($M = 2.10$, $SD = 0.95$; $M = 2.10$, $SD = 1.16$ F (2, 205) = 72.46, $p < .001$, $\eta^2 = .414$). Thus, the results show that the planning manipulation was effective in evoking mild levels of stress.

A contrast analysis was performed to see between which conditions the difference in average was. The results are shown in Table 1. Overall, there was a significant difference between the two aversive activity conditions and the fun activity control condition The results also indicate that there was no significant difference between the two aversive activity conditions for last two statements. Thus, participants felt more obligation, stress and less desire in the aversive activity conditions compared to the fun activity condition. However, between the aversive activity conditions there was no significant difference in their feelings of stress and desire.

Table 1.

Contrast analysis results for the manipulation check. Difference in average is shown.

		Aversive intention	Aversive + II	Fun Control condition
Obligated				
	Aversive intention	1	.428*	1.310*
	Aversive + II		1	.882*
Stressed				
	Aversive intention	1	.292	.998*
	Aversive + II		1	-.706*
Desire				
	Aversive intention	1	-.006	-1.873*
	Aversive + II		1	-1.868*

Note. $N = 208$. *Difference in mean $p < .05$.

3.3 Mood manipulation check

Several one-way ANOVAs were conducted to test if our study changed the mood of the participants. No mood differences between the conditions for all POMS subscales were found ($p > .05$), indicating that participants did not differ in their initial mood between conditions and completing this study did not affected their mood either. The exact mood manipulation check outcomes can be found in Appendix L.

3.4 Main analysis

3.4.1 Aversive activity plans and subjective well-being

To test the hypothesis that aversive activity planning, and thus mild stress, would decrease subjective well-being, compared to the fun activity control condition, a MANOVA was conducted. The stress conditions were the categorical predictor and the four continuous well-being measures were the outcome variables. Using Wilks Lambda, there appeared to be no significant effect of the different conditions on the four subjective well-being scales, F (8, 404) = .859, p = .551. The univariate test results were non significant as well. This means that based on this study, aversive planning does not lower subjective well-being significantly compared to fun planning and therefore our first hypothesis is rejected. Because of the non significant direct effect of aversive activity planning on subjective well-being, we could not perform a further mediation analysis. This also implied that we could not perform the intended moderation mediation analysis.

3.4.2 Aversive activity plans and sense of agency

To test the hypothesis that aversive activity planning, and thus mild stress, would lower sense of agency compared to fun activity planning, a one-way ANOVA was conducted. The stress conditions were the categorical predictor and sense of agency was the outcome variable. There was a significant effect of sense of agency on the different plan conditions, F (2, 205) = 4.55, p = .012, which means there was a difference between conditions.

Planned contrasts revealed that aversive activity plans, and thus stress, significantly decreased sense of agency, compared to the fun activity condition, t (205) = -2.56, p = .011. Thus, our second hypothesis is confirmed. However, making implementation intentions did not significantly differ compared to only making intentions, t (205) = 1.56, p = .120. This

indicates that when planning an aversive activity, sense of agency will be lowered, and it

does not matter if implementation intentions are made or not.

3.4.3 Sense of agency and subjective well-being

We hypothesized that sense of agency was positively associated with subjective well-

being. Our initiated plan was to conduct a MANOVA, with sense of agency as predictor and

the four measures of subjective well-being as outcome variables. However, sense of agency is

a continuous predictor, and using a median split on this variable could compromise the power

of the analysis. Therefore, to test this hypothesis we conducted four separate linear

regressions, in which sense of agency was the continuous predictor and the four measures of

subjective well-being (perceived stress in life circumstances, positive psychological well-

being, psychosomatic symptoms and body image), were the outcome variables.

The analyses yielded a negative significant association with life stress $\beta = -.62$, t (206)

$= -4.00$, $p < .001$ and psychosomatic symptoms, $\beta = -.50$, t (206) $= -3.02$, $p = .003$, and a

positive significant association with psychological well-being, $\beta = .36$, t (206) $= 3.28$, $p =$

.001. Life stress, $R^2 = .072$; F (1, 206) $= 16.00$; $p < .001$, psychological well-being, $R^2 = .050$;

F (1, 206) $= 10.74$; p $= .001$, and psychosomatic symptoms $R^2 = .042$; F (1, 206) $= 9.12$; p

=.003. also explained a significant proportion of variance in depression scores. However, the

analysis did not yield body image as a significant predictor of sense of agency, $\beta = .16$, t

(206) $= 1.19$, $p = .236$.

According to above results, this means that a higher sense of agency indicates less life

stress, less psychosomatic symptoms, and more psychological well-being. Thus, a higher

sense of agency predicts a higher subjective well-being. Apart from the nonsignificant body

image analysis, we can say that the results are in line with our third hypothesis.

3.4.4 The moderating role of rumination on aversive activity plans and sense of agency

Finally, we tested the hypothesis that rumination moderates the relationship between aversive activity planning and sense of agency. More specifically, we expected that ruminators experience more stress when planning aversive activities and therefore experience a lower sense of agency, compared to non-ruminators. We conducted an ANOVA, with the stress conditions as categorical predictor, individual differences rumination as continuous predictor and sense of agency as the outcome variable. There was a main effect of rumination on sense of agency, $F(1, 208) = 3.02$, $p = .00$, $\eta^2 = .175$, and a main effect of group on sense of agency, $F(1, 208) = 4.14$, $p = .02$, $\eta^2 = .046$. However, there was no significant interaction effect of stress condition on sense of agency after controlling for the effect of rumination, $F(22, 208) = 1.23$, $p = .23$. Meaning, there was no moderation effect of rumination. This is not in line with our last and fourth hypothesis and is therefore rejected. This implied that we could not perform the intended moderation mediation analysis.

Discussion

Our first hypothesis was that planning aversive activities, both with and without the use of implementation intentions, lowered subjective well-being, compared to planning fun activities. The results showed that aversive activity planning did not have a significant effect on subjective well-being. In other words, there was no difference in subjective well-being between the aversive, stress conditions and fun, control condition.

Our second hypothesis was that planning aversive activities, with and without the use of implementation intentions, lowered sense of agency, compared to planning fun activities. Confirmative with the expectation, aversive activity planning decreased feelings of sense of agency, compared to the fun activity planning. However, there was no difference found between the two aversive activity conditions. This showed that aversive planning, and thus planning for stressful activities, can decrease feelings of agency, but differences in the way individuals plan aversive activities (intention vs implementation intention planning) did not matter for the effect on sense of agency.

Our third hypothesis was that sense of agency is positively associated with subjective well-being, in that a higher sense of agency predicts a higher subjective well-being. The results showed that individuals who reported a higher sense of agency, also reported less life stress, less psychosomatic symptoms, and higher psychological well-being. This indicates that participants with a higher sense of agency, also experienced a higher subjective well-being. This means that our expectation was supported for the biggest part. However, sense of agency did not predict body vitality.

Our fourth and last hypothesis was that individuals who scored high on rumination, also experienced more stress and therefore less sense of agency, compared to individuals who scored low on rumination. Contrary to the expectations, individual differences in rumination did not moderate the relationship between aversive activity planning and sense of agency.

The results did not reveal the predicted relationship between aversive activity planning and subjective well-being. This contradicts our expectation based on previous research and theories about the self-concordance of goals and well-being (Sheldon & Kasser, 1998; Sheldon, 2014) and aversive activity planning specifically (Schlinkert & Koole, 2017; Schlinkert & Koole, 2018). Based on the latter, making plans for aversive activities should act as a mild stressor, which suggests a link with a lowered well-being as well. The contrasting results in this study are remarkable, because based on our stress manipulation the aversive activity conditions did induce mild stress, compared to the fun plan condition. An alternative explanation could be that participants still endorsed a self-concordant form of motivation in the aversive activity conditions. After all, an aversive activity is not automatically self-discordant (incongruent with the personal interests and values of an individual, Sheldon & Elliot, 1998). It is possible that individuals filled out plans for activities by which they felt reluctant, but still relied on a mostly self-concordant form of motivation. This could interfere with the effect, because self-discordant goals specifically are likely to generate intrapersonal conflict, which can cause a decrease in well-being.

The current study did reveal that aversive activity planning lowered sense of agency. This is in line with the study that found a weak relationship between self-identity and task aversiveness (Blunt & Pychyl, 2000) and the study of Damen et al., (2015). Interestingly, the results from this study broaden the findings of Damen et al., (2015) by showing that it does not matter if an individual used implementation intention planning or only formed intentions. Either way their sense of agency was reduced, compared to the fun activity condition. An alternative explanation for not finding a difference between the two aversive activity conditions is that participants may used implementation intention planning in the intention aversive plan condition as well. Gollwitzer (1999) stated that 67% of the time people spontaneously set implementation intentions. When people recognize the difficulty of their

goals, which may happen when planning aversive activities, this percentage may be even higher. If this happened in this study, it would have mitigated the effects of only forming implementation intentions in the supposed condition. In future studies this could be prevented by asking participants at the end of the planning task if they had spontaneously used implementation intention planning.

Furthermore, a positive relationship between sense of agency and subjective well-being was observed in this study, which also is in line with SDT that states that autonomous motivation is reliably related to psychological well-being (Deci & Ryan, 2008). And that autonomous motivation is more evident when people experience satisfaction of their basic psychological needs for competence and autonomy, which are related constructs of sense of agency.

Lastly, we did not find any interaction effects of rumination on the relationship between aversive activity planning and sense of agency. This is in contrast with research that states that ruminators are a stress sensitive group, that may experience even more difficulties and stress regarding aversive goal attainment (Brosschot et al., 2006; Verkuil et al., 2010). However, in this study, ruminators did report a lower subjective well-being, a more negative mood, and higher levels of life stress, compared to non-ruminators. The correlations are thus in the right directions, which supports the above research. The lack of moderation is also in contrast with research that states that ruminators are more likely to prioritize less integrated goals (Baumann, Kaschel, & Kuhl, 2005). However, Baumann & Kuhl (2002) found that ruminators are more likely to label an aversive task as self-chosen, even when the task was assigned to them by an authority figure. There is a possibility that ruminators experienced a smaller difference between aversive and fun activities and thus autonomous and controlled motivation, compared to non-ruminators (Deci & Ryan, 2008), which could be an explanation for the lack of effect.

Some additional methodological concerns are noted as well. First, the sample size was too small, so we lacked statistical power. Because of this, we could not find a direct effect of aversive goal planning on subjective well-being, which also meant we could not perform a mediation analysis with sense of agency. Second, we developed our own sense of agency scale because there was no scale yet to be found for planning specifically. The reliability was low, so future research should focus on developing a validated scale for sense of agency focused on planning behavior.

Furthermore, our data collection took place during the global pandemic, also known as the Corona crisis, which was an a-typical environment. We recognize that this could have several implications. First of all, some people in the fun activity condition did not have anything fun to plan due to social distancing, which resulted in more exclusions. Other people stated their fun plans were not as fun as usual. This could have interfered with our stress manipulation.

It is likely that the stress manipulation was not as effective compared to a normal situation, because people were more stressed due to fear of infection, uncertainty, loss of social contacts, inadequate information, loss of outdoor activities, loneliness and financial loss among others (Brooks et al., 2020; Jiménez-Pavón, Carbonell-Baeza, & Lavie, 2020; Matias, Dominski, & Marks, 2020; Xiang et al., 2020). Unfortunately, we did not include an adequate measure to conduct stress prior to the planning task. We did ask if people experienced psychological problems in their life, in which 46.9% of the sample responded that they did. But it would be more helpful if we asked explicitly about current psychological problems.

Although the current study did not result in a clear picture of the effects and underlying mechanism of aversive activity planning on subjective well-being, which may be due to methodological issues. This study did contribute to the existing literature on healthy

planning and the use of implementation intentions. It is inevitable that some point in our lives

aversive plans must be made, and its effect on well-being is important to consider when

promoting such planning techniques. Especially, for vulnerable and stress sensitive groups

like chronic ruminators, that may experience even more difficulties and stress regarding

aversive goal attainment.

More research is needed to shed light on the influence of aversive activity planning on

sense of agency and subjective well-being. A better understanding of these factors can

contribute to facilitate less stressful, and thus healthier planning.

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Appendices

Appendix A

A priori power analysis
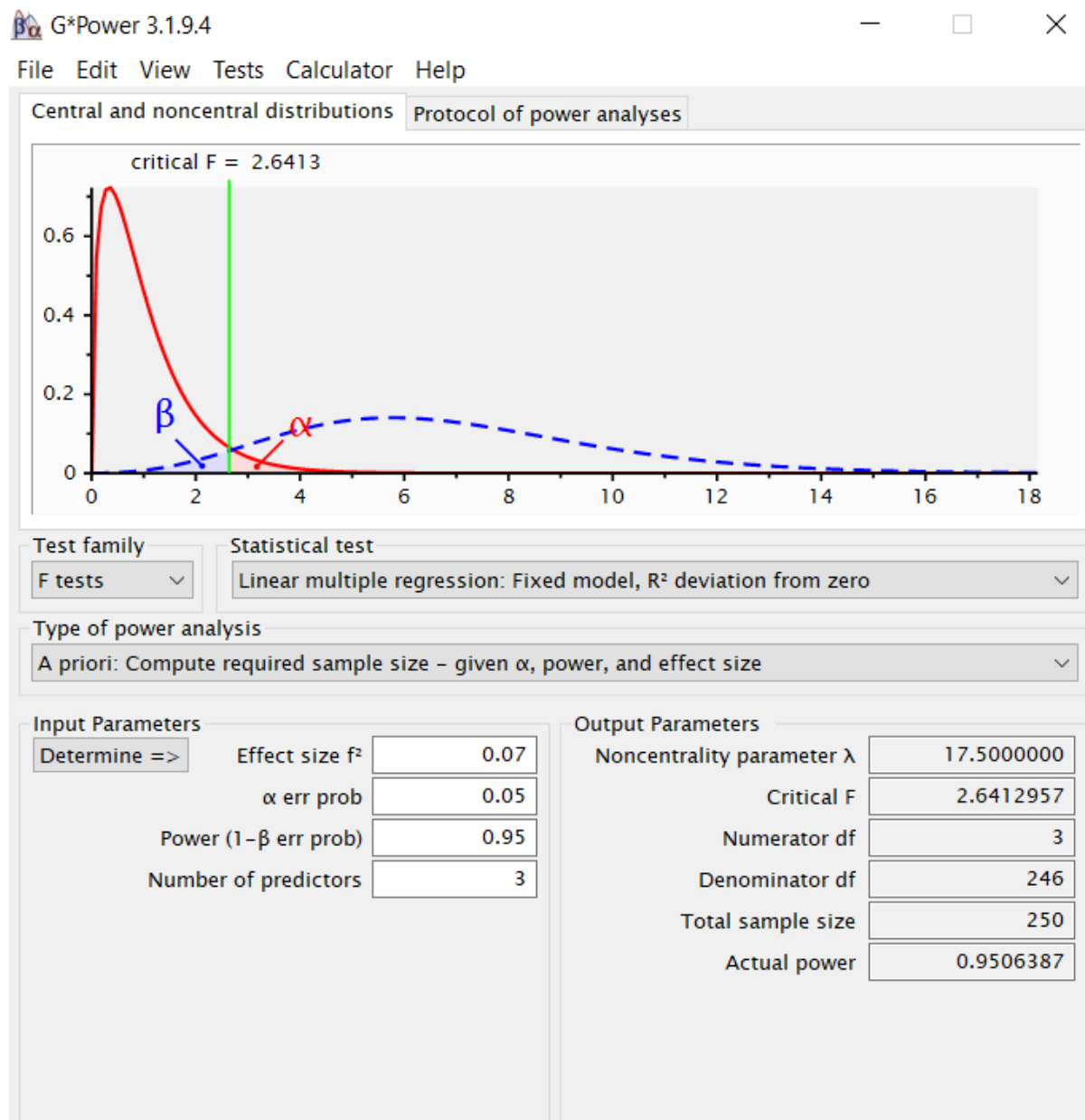
Prior to conducting the actual research, our idea was to test the analyses with regressions. For

that reason, the a priori power analysis was conducted with linear multiple regressions.

However, during the study, we decided to chose for ANOVAs, because we were more

interested in the differences between groups and our preference was towards ANOVAs.

Appendix B

Instructions planning task

Aversive conditions instructions

PLANNEN EN VOORNEMENS

Voor deze vragenlijst willen we graag te weten komen hoe mensen plannen maken in hun

dagelijks leven. We willen je vragen om aan iets te denken wat je van plan bent om in de

komende 2 weken te gaan doen, maar waar je tegelijkertijd erg tegenop ziet. Een activiteit die

je met heel veel tegenzin zult uitvoeren en waar je liever helemaal niet aan wilt beginnen.

Noteer hier je voorgenomen plan:

Global implementation intention format questions

Waar ben je precies van plan om dit voornemen uit te voeren?

Wanneer (welke dag, hoe laat) ben je precies van plan om dit voornemen uit te voeren?

Beschrijf hier de stappen die je moet maken om dit voornemen uit te voeren:

Fun control condition instructions

PLANNEN EN VOORNEMENS

Voor deze vragenlijst willen we graag te weten komen hoe mensen plannen maken in hun

dagelijks leven. We willen je vragen om aan iets te denken wat je van plan bent om in de

komende 2 weken te gaan doen en waar je erg veel zin in hebt. Een activiteit die je met heel

veel plezier zult uitvoeren en waar je het liefst zo snel mogelijk aan wilt beginnen.

Noteer hier je voorgenomen plan

Appendix C

Instructions stress manipulation

De volgende vragen gaan over het voorgenomen plan dat je zojuist hebt beschreven. Geef aan

wat voor jou van toepassing is bij de volgende vragen:

In hoeverre voel je je verplicht om je plan uit te voeren?

In hoeverre voel je je gespannen als je aan het plan denkt?

In hoeverre heb je zin om te gaan beginnen aan je plan?

Appendix D

Instructions and items for the Preoccupation subscale of the Action Control Scale

(Kuhl, 1994)

Hieronder volgen korte beschrijvingen van situaties met twee mogelijke reacties.

Kies bij elke vraag de reactie die het beste weergeeft wat je het vaakst doet in die situatie, A

of B. Er zijn geen goede of foute antwoorden. Ga gewoon af op je gevoel.

1. Wanneer ik iets kwijtraak dat heel waardevol voor me is en ik het nergens kan vinden:

A. Vind ik het moeilijk om aan iets anders te denken.

B. Zet ik het na een tijdje uit mijn gedachten.

2. Wanneer ik wekenlang aan een project heb gewerkt en vervolgens alles misgaat:

A. Dan kost het me veel tijd om mezelf aan te passen.

B. Dan heb ik daar even last van, maar daarna denk ik er niet meer aan.

3. Wanneer ik aan een wedstrijd mee doe en telkens verlies:

A. Dan kan ik het verliezen makkelijk uit mijn gedachten zetten.

B. Dan blijft de gedachte aan het verliezen door mijn hoofd gaan.

4. Wanneer ik een nieuw apparaat heb gekocht (bijvoorbeeld een smartphone) die per

ongeluk op de grond valt en niet meer te repareren is:

A. Zal ik daar weer snel overheen zijn.

B. Zal het lang duren voordat ik daar overheen ben.

5. Wanneer ik iets belangrijks met iemand moet bespreken en die persoon steeds niet te

bereiken is:

A. Moet ik er onophoudelijk aan denken, zelfs wanneer ik iets anders aan het doen ben.

B. Vergeet ik het gemakkelijk totdat ik die persoon weer zie.

6. Wanneer ik veel dingen heb gekocht en thuis merk dat ik teveel heb betaald- en ik het geld

niet terug kan krijgen:

A. Kan ik me nergens anders op concentreren.

B. Vergeet ik dat weer gauw.

7. Wanneer mij wordt verteld dat mijn werk volledig te kort schiet:

A. Trek ik me daar niet erg lang wat van aan.

B. Voel ik me verlamd.

8. Wanneer ik door het verkeer of het openbaar vervoer een belangrijke afspraak heb gemist:

A. Vind ik het de eerste tijd daarna moeilijk om aan iets anders te beginnen.

B. Vergeet ik dat snel en ga ik iets anders doen.

9. Wanneer iets erg belangrijk voor me is, en het me maar niet lijkt te lukken:

A. Raak ik langzaam de moed kwijt.

B. Laat ik het gewoon zitten en begin ik aan iets anders.

10. Wanneer iets me echt ontmoedigd heeft:

A. Vind ik het moeilijk om ook maar iets uit te voeren.

B. Vind ik het makkelijk om mezelf af te leiden met andere dingen.

11. Wanneer verschillende dingen op dezelfde dag misgaan:

A. Weet ik gewoonlijk niet hoe ik daar mee om moet gaan.

B. Ga ik gewoon door alsof er niets is gebeurd.

12. Wanneer ik me volledig heb ingespannen om heel goed werk te leveren en het

desondanks allemaal misgaat:

A. Vind ik het niet erg moeilijk om aan iets anders te beginnen.

B. Heb ik moeite om ook nog maar íets anders te doen.

Appendix E

The Profile of Mood Scales (POMS; McNair et al., 1971)

Cronbach's alphas

Table 2.

Reliability statistics of the Profile of Mood Scales

Profile of Mood subscale	Cronbach's alpha	
	Timepoint 1	Timepoint 2
Tension	.876	.907
Depression	.918	.930
Anger	.849	.868
Fatigue	.909	.924
Vigor	.849	.844

Items

Hoe voel je je op dit moment?

Neerslachtig

Slecht gehumeurd

Uitgeput

Actief

Zenuwachtig

Hulpeloos

Geërgerd

Helder

Paniekerig

Droevig

Opstandig

Vermoeid

Levendig

Gespannen

Eenzaam

Aan het eind van mijn krachten

Ongelukkig

Woedend

Lusteloos

Vol energie

Rusteloos

Onwaardig

Knorrig

Dood op

Opgeruimd

Angstig

Droefgeestig

Kwaad

Afgemat

Onzeker

Wanhopig

Mopperend

Appendix F

Sense of Agency scale instructions, items and factor analysis

De volgende vragen gaan over het plan wat je net hebt bedacht. Geef aan wat van toepassing

is.

 Als ik aan dit plan denk, dan…

1. ... heb ik het gevoel dat anderen om mij heen bepalen of ik het haal of niet.

2. ... heb ik het gevoel dat mijn acties niet te voorspellen zijn.

3. ... bepaal ik wanneer ik er aan begin.

4. ... ben ik verantwoordelijk voor het resultaat.

5. ... heb ik ondersteuning van anderen nodig om het succesvol af te ronden.

Factor analysis

Communalities

	Initial	Extraction
agc1r	1,000	,637
agc2r	1,000	,452
agc5r	1,000	,523
... bepaal ik wanneer ik er aan begin.	1,000	,691
... ben ik verantwoordelijk voor het resultaat.	1,000	,809

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	1,923	38,456	38,456	1,923	38,456	38,456	1,793
2	1,189	23,787	62,244	1,189	23,787	62,244	1,424
3	,782	15,639	77,882				
4	,628	12,555	90,437				
5	,478	9,563	100,000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Scree Plot
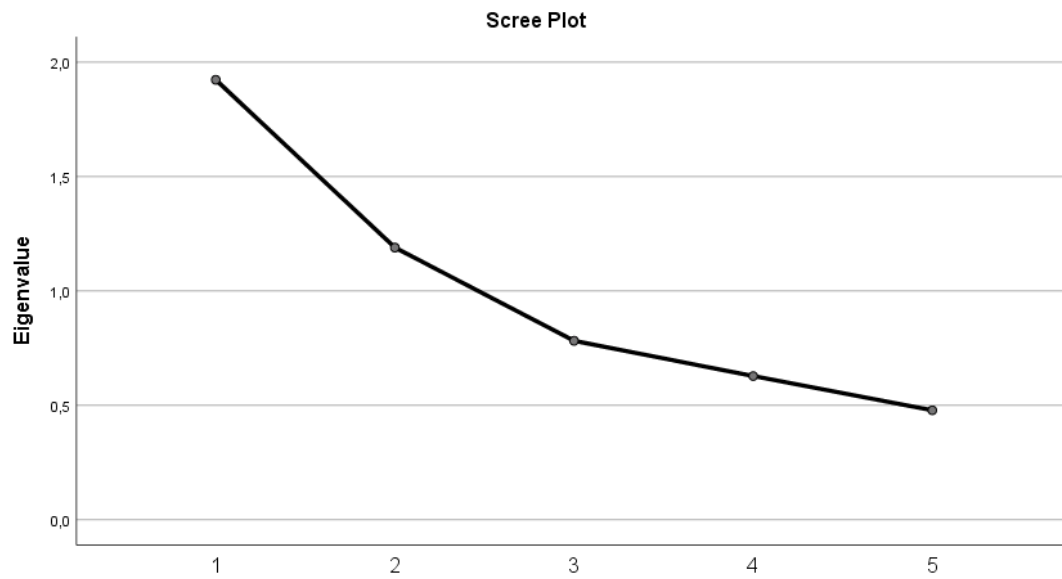
Component Matrix[a]

	Component	
	1	2
agc1r	,734	-,313
agc2r	,582	-,336
agc5r	,670	-,271
... bepaal ik wanneer ik er aan begin.	,690	,464
... ben ik verantwoordelijk voor het resultaat.	,346	,831

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Appendix G

Items of the five subjective well-being measures

We measured well-being by assessing (a) physical health (Derogatis, 1992), (b) perceived stress in life circumstances (Kuhl & Fuhrmann, 2004) and (c) positive psychological well-being (World Health Organization: Regional Office for Europe, 1998). The inclusion of the latter measure is consistent with research that states that both positive and negative aspects of well-being should be equally included to fully understand psychological distress and well-being (Wood & Tarrier, 2010).

Instructions and items for body vitality. The Vital Body Dynamics subscale (VBD) of the Body Image questionnaire (FKB-20; Clement & Löwe, 1996)

De volgende vragenlijst beschrijft het fysieke gevoel en de houding ten opzichte van het eigen lichaam. Geef aan in hoeverre onderstaande stellingen OP DIT MOMENT op jou van toepassing zijn. Er zijn geen goede of foute antwoorden.

1. In het algemeen voel ik me robuust en sterk.

2. Ik ben gezond.

3. Soms voel ik een onstuitbare energie in mij.

4. Ik voel mij voel kracht.

5. Ik voel mij vaak vol met erotische spanning.

6. Ik heb genoeg energieke spanning in mij.

7. Ik voel mij top fit.

8. Ik ben graag bezig met mijn seksuele wensen.

9. Ik durf lichamelijk best wat aan.

10. Ik ervaar plezier als ik uitgelaten ga dansen.

Instructions and items for psychological well-being. The WHO-5 (World Health

Organization: Regional Office for Europe, 1998)

De volgende vragen gaan over jouw gemoedstoestand tijdens dit moment. Geef aan wat van

toepassing is. Op dit moment:

1. Voel ik me vrolijk en in een opperbeste stemming.

2. Voel ik me rustig en ontspannen.

3. Voel ik me actief en doelbewust.

4. Voel ik me fris en fruitig als ik wakker word.

5. Is mijn dagelijkse leven gevuld met dingen die me interesseren.

Instructions and items for psychosomatic symptoms. A short version of the symptom

checklist (SCL-90-R; Derogatis, 1992)

In onderstaande vragenlijst wordt gevraagd in welke mate je last hebt van lichamelijke en

psychische klachten. Wil je voor elk van deze onderstaande klachten aangeven in hoeverre je

er last van hebt, door het antwoord te selecteren wat het meest van toepassing is?

Het gaat er hierbij steeds om hoe je je gedurende de afgelopen week, met vandaag erbij,

voelt.

In welke mate ben je gehinderd door...

1. Hoofdpijn

2. Duizeligheid

3. Pijn in borst of hartstreek

4. Pijn onder in de rug

5. Misselijkheid of een maag die van streek is

6. Pijnlijke spieren

7. Moeilijk adem kunnen halen

8. Je soms erg warm, dan weer erg koud voelen

9. Een verdoofd of tintelend gevoel ergens in je lichaam

10. Een brok in je keel

11. Je lichamelijk ergens slap voelen

12. Zwaar voelen in armen of benen

13. Trillen

14. Hartkloppingen

Instructions and items for self-perceived life stress. The self-regulation inventory (SSI-K3; Kuhl & Fuhrmann, 2004)

Nu volgen een aantal vragen over je huidige levenssituatie. Kies het antwoord dat het beste bij jouw levenssituatie past. Er zijn geen goede of foute antwoorden.

1. Ik vind het moeilijk om te voldoen aan alle verschillende verwachtingen en eisen die er aan mij worden gesteld.

2. Mijn huidige leven valt mij echt zwaar.

3. Ik moet een hoop moeilijkheden overwinnen.

4. De laatste tijd loop ik tegen veel moeilijkheden in mijn leven aan.

5. Er zijn veel dingen in mijn leven veranderd die ik nog moet verwerken.

6. Ik moet met grote veranderingen in mijn leven leren omgaan.

7. Ik heb de laatste tijd een hoop narigheid meegemaakt.

8. Ik moet mezelf op een volledig nieuwe situatie in mijn leven instellen.

Appendix H

Procedure

The questionnaire was distributed in two different ways to ensure enough responses. First, access could be gained to the questionnaire via a link posted on Facebook, Instagram, WhatsApp and other social media channels. For people without social media the link was sent to their email. Second, individuals volunteered themselves by responding to the online survey on a Social and Behavioural Sciences research participation system from the university, named Sona Systems.

Before accessing the survey, participants were asked to read and agree to the informed consent (see Appendix I), in which the rights of the participant were explained during and after the questionnaire. It was emphasized that the answers would be processed anonymously, and that participation was free of obligation.

After the declaration of consent, participants completed a Dutch translation of the Rumination scale (Kuhl, 1994). Participants then filled out the Profile of Mood States scale (POMS; McNair, Lorr, & Droppleman, 1971; Wald & Mellenbergh, 1990) to assess their current mood on six mood items (tension, depression, anger, fatigue and vigor). Thereafter, participants completed a planning exercise. The specifics instructions depended on the condition they were randomly assigned to (see Appendix B). This was followed by an assessment of the sense of agency questions. Then, the POMS was again assessed, to check if the questionnaire affected their mood. Participants then filled in the subjective well-being questionnaires. Lastly, participants answered general demographic questions concerning their gender, age, and education level. This was followed by two additional questions, if they ever experienced physical or psychological problems in their life, measured with a binary format (*yes / no*). Finally, participants were thanked and debriefed (see Appendix J). This study took about 30 minutes to complete.

The study was programmed in Dutch in Qualtrics Survey Software (Qualtrics, Provo, UT). Participants could choose to end the study at any given time. In this case, their results were excluded from further analyses.

Appendix I

Informed consent

TOESTEMMINGSFORMULIER

Dit is een toestemmingsformulier voor de onderzoek deelname. Het bevat belangrijke

informatie over dit onderzoek en wat u kunt verwachten als u besluit deel te nemen.

Uw deelname is vrijwillig.

Deze studie maakt deel uit van een onderzoeksprogramma dat wordt uitgevoerd door

Caroline Schlinkert, onderzoeker aan de Universiteit Utrecht. Als u vragen, opmerkingen of

klachten heeft over het onderzoek of als u denkt dat u op enige manier schade heeft geleden

door uw deelname, neem dan gerust contact met haar op via e-mail op c.schlinkert@uu.nl.

A. DOEL

Het doel van dit onderzoek is om meer te weten te komen over persoonlijkheid en plannen

van mensen.

B. PROCEDURES

U staat op het punt deel te nemen aan een studie waarin u wordt gevraagd vragen over dit

onderwerp te beantwoorden. Deze vragen richten zich vooral op de manier waarop u uzelf

ervaart en behandelt.

Er zijn geen goede of foute antwoorden! Wees in uw reacties alstublieft zo eerlijk mogelijk

door uw eigen persoonlijke voorkeur aan te geven. Uw antwoorden zijn vertrouwelijk. U kunt

op elk moment weigeren om deel te nemen of de deelname beëindigen zonder verlies van

voordelen. Deze enquête duurt rond de 30 minuten.

C. RISICO'S EN VOORDELEN

Er zijn geen voorzienbare risico's bij het invullen van deze enquête. De studie zal de

samenleving ten goede komen door ons begrip van het zelfbeeld van mensen te vergroten. U

ontvangt 0.75 proefpersoon uren (PPU) voor het invullen van de enquête.

D. VERTROUWELIJKHEID

De gegevens die worden verzameld zullen vertrouwelijk worden behandeld. Er zullen geen

namen of andere persoonlijke informatie over uw identiteit worden gevraagd, gebruikt of

opgeslagen.

E. DEELNEMINGSVOORWAARDEN

Deelname is volledig vrijwillig. Ik ben vrij om mijn toestemming in te trekken en mijn

deelname op elk moment te beëindigen zonder boete of verlies van voordelen. Mijn

antwoorden zijn volledig anoniem. De gegevens van deze studie kunnen worden gepubliceerd

in wetenschappelijke tijdschriften.

Appendix J

Debriefing

Bedankt voor je deelname aan dit experiment. In dit experiment ben je random toegewezen tot een van de condities, waarbij je een aversieve of leuke activiteit moest plannen. Het doel van deze studie is om te kijken of en wanneer plannen voor aversief activiteiten fungeren als een stressfactor. En dus wanneer plannen je welzijn kan beïnvloeden.

Jouw deelname wordt niet alleen gewaardeerd door de onderzoekers, maar de data die is verzameld kan mogelijk helpen bij het onderzoeken van de negatieve effecten van plannen.

Tot slot vragen we je om deze studie niet te bespreken met anderen die ook meedoen of eventueel gaan meedoen op een later moment.

Heb je naast deze informatie nog overige vragen of onduidelijkheden? Of ben je geïnteresseerd in de onderzoeksresultaten? Dan kan je ons altijd bereiken via onderstaande gegevens.

Nogmaals bedankt voor je deelname!

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Appendix K

Correlation matrix

Tabel 3.

Pearson correlation matrix of rumination, sense of agency, body vitality, psychological well-being, symptom checklist, life stress and negative mood.

Variables	1	2	3	4	5	6	7
Rumination	-	.30*	-.38*	-.45*	.29*	.37*	.40*
Sense of Agency		-	.08	.22*	-.21*	-.27*	.24*
Body Vitality			-	.65*	-.34*	-.39*	-.39*
Psychological well-being				-	-.50	-.58*	-.58*
Symptom checklist					-	.46*	.63*
Life stress						-	.61*
Negative mood							-

Note. $N = 208$ *$p < .05$

Note that we used the total sum scores of each scale. For the variables rumination and body vitality we used subscales, which were also used in the statistical analysis, described in section 2.2. We did perform separate analysis for the body vitality scale including both subscales. However, these results were also not significant.

Appendix L

Mood manipulation check POMS one-way ANOVAS

Table 4.

Means and standard deviations of the POMS tension subscale by stress condition

	Stress condition	Mean	SD	N
POMS 1	Aversive intention	9.83	4.40	72
	Aversive + II	9.63	3.73	68
	Fun control	10.10	4.55	68
	Total	9.86	4.23	208
POMS 2	Aversive intention	10.19	4.82	72
	Aversive + II	10.13	3.78	68
	Fun control	9.57	4.17	68
	Total	9.97	4.28	208

Table 5.

Means and standard deviations of the POMS depression subscale by stress condition

	Stress condition	Mean	SD	N
POMS 1	Aversive intention	11.92	5.94	72
	Aversive + II	12.02	4.50	68
	Fun control	12.59	5.94	68
	Total	12.17	5.38	208
POMS 2	Aversive intention	11.49	5.28	72
	Aversive + II	11.01	3.90	68
	Fun control	11.79	5.97	68
	Total	11.43	5.11	208

Table 6.

Means and standard deviations of the POMS anger subscale by stress condition

	Stress condition	Mean	SD	N
POMS 1	Aversive intention	9.35	3.95	72
	Aversive + II	9.41	3.43	68
	Fun control	9.81	3.08	68
	Total	9.52	3.51	208
POMS 2	Aversive intention	8.96	3.86	72
	Aversive + II	9.03	2.88	68
	Fun control	9.10	2.79	68
	Total	9.03	3.21	208

Table 7.

Mean and standard deviations of the POMS fatigue subscale by stress condition

	Stress condition	Mean	SD	N
POMS 1	Aversive intention	10.71	5.26	72
	Aversive + II	10.32	4.26	68
	Fun control	10.93	5.17	68
	Total	10.65	4.90	208
POMS 2	Aversive intention	9.90	5.48	72
	Aversive + II	9.52	4.20	68
	Fun control	9.72	4.82	68
	Total	9/72	4.85	208

Table 8.

Mean and standard deviations of the POMS vigor subscale by stress condition

	Stress condition	Mean	SD	N
POMS 1	Aversive intention	14.92	4.29	72
	Aversive + II	14.71	3.79	68
	Fun control	14.44	4.35	68
	Total	14.70	4.14	208
POMS 2	Aversive intention	13.82	4.63	72
	Aversive + II	13.66	4.13	68
	Fun control	14.34	4.28	68
	Total	13.94	4.35	208

Table 9.

One-way ANOVA results of mood by stress condition

POMS subscale	Sum of squares	df	Mean square	F value	p
Tension	2.354	2	1.117	.035	.966
Depression	33.28	2	16.64	.310	.734
Anger	7.003	2	3.502	.161	.851
Fatigue	14.317	2	7.159	.154	.857
Vigor	3.505	2	1.752	.052	.949