# EXPLORATION OF THE RELATIONSHIP BETWEEN UNFINISHED TASKS AND PERCEIVED DISTRESS IN STUDENTS: DO PERSONAL RESOURCES PLAY A ROLE?

BACHELOR THESIS

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**Abstract**

Distress is a common problem among students leading to high societal and individual costs both financially and psychologically. However, the relationship between unfinished tasks and perceived distress has not yet been taken sufficiently into account. Therefore, the current research explores this circumstance and tries to bridge the gap in knowledge. As personal resources aid people to deal with distress, self-efficacy and conscientiousness as personal resources were examined for their mediating or moderating role on the main relationship. A cross-sectional correlational survey design was used and administered among a sample of 129 students. Unfinished tasks and perceived distress were moderately strong correlated with each other ($r$ =.45, $p$ <.01). Thus, unfinished tasks can be regarded as a stressor among students. Self-efficacy partially mediated the relationship between unfinished tasks and perceived distress ($b$ = 0.12, BCa CI [0.02, 0.26]). Conscientiousness did neither act as a mediator ($b$ = 0.08, BCa CI [-0.02, 0.2]) nor as a moderator ($b$ = -0.01, $p$ = .58, $R^2$ = .22; $\Delta R^2$ = .00). However, when relations with conscientiousness were considered separately, both unfinished tasks and perceived distress were significantly and moderately associated with conscientiousness ($r$ = -.43, $p$ <.01 and $r$ = -.31, $p$ <.01, respectively). Hence, it might be the case that people higher in conscientiousness naturally have fewer unfinished tasks. Overall, the current study shed light on a relatively unexplored field of research. With unfinished tasks, a crucial stressor has been found. In combination with personal resources, future investigations may help students to lower their perceived distress.

*Keywords:* students, unfinished tasks, perceived distress, personal resources, conscientiousness, self-efficacy

# Introduction

In recent years, awareness has grown regarding the detrimental effects of psychological distress. As Stallman (2010) found, the estimated prevalence for mental health problems among Australian university students was significantly higher than in the general population. Most of those students experienced subsyndromal symptoms (i.e. distress) which have been found to be associated with disability and lower academic achievement. A cross-sectional study from Dachew, Azale Bisetegn, and Berhe Gebremariam (2015) strengthens the results of Stallman by showing that the prevalence of mental distress is significantly higher among undergraduate students than among their community peers. Therefore, students can be regarded as an at-risk group for experiencing mental distress. Depression, burnout and distress are all related psychiatric symptoms contributing to the enormous societal costs next to high emotional burden like a shrink in the perceived quality of life. Statistics specifically related to students are not available. However, they will enter the work market after their studies, for which it has been estimated that work-related depression is responsible for costs up to 617 billion Euro a year in Europe (Matrix, 2013). This number includes the costs for the organization in terms of absenteeism and loss of productivity as well as health care costs. Therefore, it seems crucial to identify factors that may give rise to the perceived distress in students in order to lessen the costs for society and the individual.

## Unfinished tasks

It may seem to be intuitive and many may agree on the statement that if there are many tasks that still need to be completed, the level of distress may be higher. However, sufficient scientific evidence on this is missing. Syrek and Antoni were among the first researchers in the field of occupational health investigating the influences of unfinished tasks mainly in the process of recovery (i.e. re-establishing resources in absence of work demands). Vacation and break from the daily stressors of work seem to be crucial factors whereby the number of unfinished tasks act as a negative predictor of recovery disturbances, namely ruminating thoughts and sleep (Syrek & Antoni, 2014). Thereby, unfinished tasks are thought of as a “goal but whose pursuit has been left incomplete” (Syrek & Antoni, 2014).

Students, like employees, have tasks which remain unfinished from time to time especially in regard to the special structure of universities. Besides some classes, no fixed “working times” exist per day but rather students are responsible for organizing the time necessary to successfully complete the studies. The more unfinished tasks exist, the more one

needs to invest cognitive effort to successfully manage all duties, e.g. meeting the set deadlines for study assignments.

People have a general tendency to be overly optimistic in planning the time to complete tasks (Buehler, Griffin, & Ross, 1994). This could have detrimental effects on levels of distress when task completion is expected to fail or fails in the end since one was not able to deal with all tasks before deadline. Hence, to provide knowledge regarding the relation between unfinished tasks and distress, research is needed.

**Theoretical basis**

The link between perceived distress and unfinished tasks as a stressor has never been drawn scientifically and therefore, theoretical models are missing. However, Ragsdale, Beehr, Grebner, and Han (2011) proposed and confirmed a model in which stressors of studying predict the level of distress through their influence on several recovery-related factors (see Figure 1).

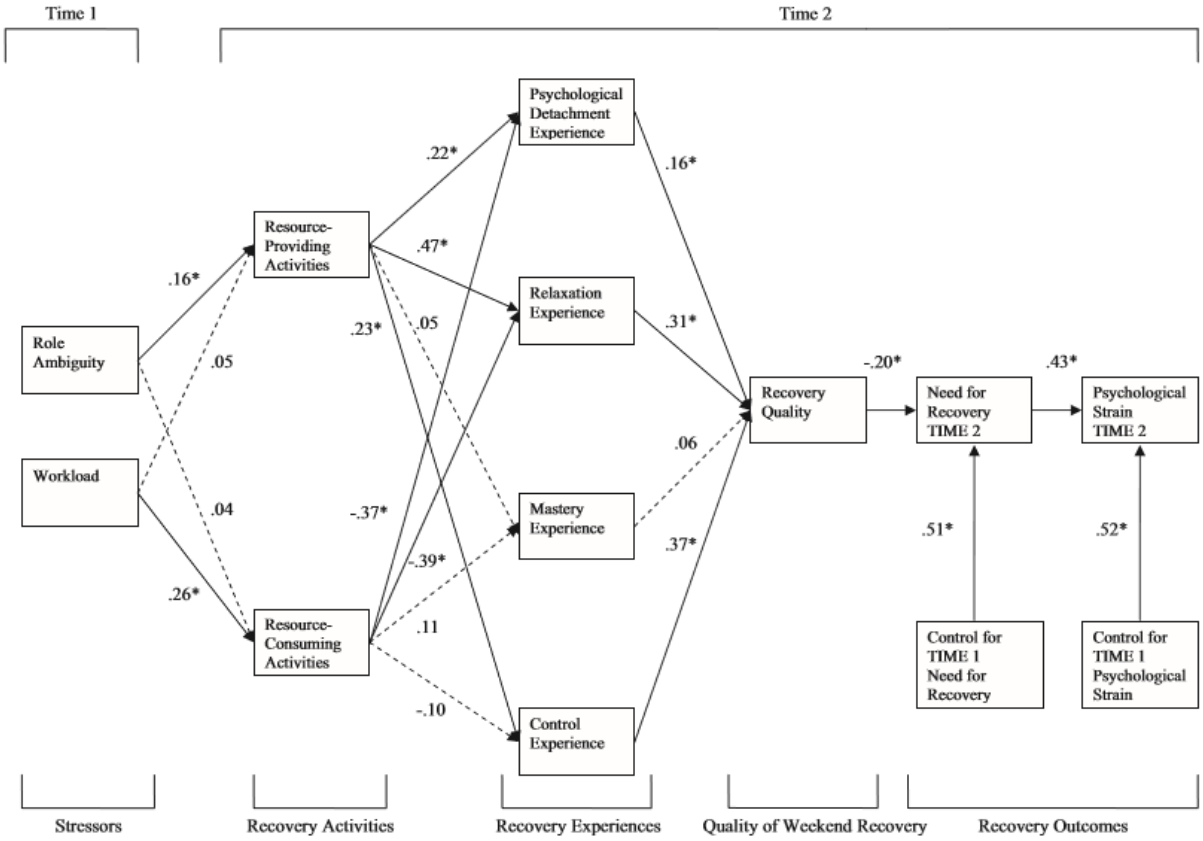


*Figure 1.* Path analytic betas of the "Integrated Weekend Recovery Model", whereby dotted lines indicate non-significant paths. From "An integrated model of weekday stress and weekend recovery of students" by J. M. Ragsdale, T. A. Beehr, S. Grebner, & K. Han, 2011, *International Journal of Stress Management, 18*(2), 153.

Because unfinished tasks have only been studied in relation to recovery so far, this "Integrated weekend recovery model" may provide additional information regarding possible related concepts. It has to be noted that parts of the model are based on the Conservation of resources theory (COR) by Hobfoll (1989), one of the leading theories in explaining distress. According to the COR-theory, there exist four categories of resources which predict strain (i.e. perceived distress) and on the other side well-being. The four categories of resources are objects, conditions, personal characteristics and energies. Objects (e.g. house or car) are linked to socio-economic status and conditions are the roles that one inherits (e.g. being married). Both are related to stress resistance depending on the value that is placed on each kind of object or condition. Personal characteristics can be thought of as traits that generally help in dealing with distress. By that, they influence the level to which one can resist stressors. Thereby, Hobfoll (1989) stresses the promising value of optimism, perceived control over experiences along with a positive view of one's own self and the perceived capability to master stressful situations. As one can see, personal characteristics in this context are not only those personality traits that are rather fixed for an individual but also those that are influenced by the appraisal and perception of one's self. The last category are energies (e.g. money, time, knowledge) which can be considered as secondary resources in that they promote the possibility to make use of resources that belong to one of the other categories.

The model of Ragsdale et al. (2011) predicts that stressors (i.e. role ambiguity and workload in the original study) are related to recovery activities during the weekend (resource-providing and resource-consuming activities). In other words, the more burden is experienced by the student, the more he or she will engage in activities that are perceived as promoting recovery. Thereby, it depends on the kind of stressor whether resource-consuming or resource-providing activities are enacted. Thereby, resource-providing and resource-consuming activities are assumed to lead to a gain or a loss of resources, respectively. Resource-consuming activities can be considered as additional demands placed on the individual either by their relation to work (or study) like preparing for classes or by personal or social problems, or duties of daily life like managing one's household. Among resource-providing activities are low-effort activities (those that do not deplete much of one's energies like watching TV), physical and social activities. In line with the COR-theory, a further depletion (i.e. loss) of resources by resource-consuming activities will lead to a higher level of distress and a rebuilding of resources (i.e. gain) by resource-providing activities to a lower

level of distress. Resource-providing activities are positively, and resource-consuming activities negatively related to recovery experiences (psychological detachment, control experience and relaxation experience). In other words, the model found that the more resource-providing activities one exercises, the more one can detach psychologically from the stressor and as a result has the feeling of control over the stressor. The reverse is true for resource-consuming activities. The original model included mastery experience (i.e. personal characteristics of the COR-theory like skills, self-efficacy and competencies) as a fourth recovery experience. However, correlations were non-significant for both kinds of activities. Following the paths of the model further, recovery experiences determine the quality of recovery which is then negatively related to the perceived need for recovery. Ultimately, the level of perceived need for recovery is positively correlated with the level of distress.

**Personal resources**

The model of Ragsdale et al. (2011) seems to be valuable in relation to the study of unfinished tasks because of several reasons. On the one hand, it is applicable in relation to the target group of students and includes a stressor as predictive factor and distress as the outcome. On the other hand, it incorporates various recovery-related factors. This is important because recovery is the only context in which unfinished tasks have been studied so far (Syrek & Antoni, 2014; Syrek, Weigelt, Peifer, & Antoni, 2016). Since the focus of the current study lies on exploring the relationship between unfinished tasks and perceived distress, it seems worth of breaking down the Ragsdale model to those few factors that might play an enhanced role in relation to perceived distress and unfinished tasks.

Parts of the model are based on the COR-theory, which is a leading theory in explaining distress. According to Alarcon, Edwards, and Menke (2011) only the category of personal resources is crucial in the recovery process and rebuilding resources by helping in coping with distress. Thus, personal resources within the “Integrated Weekend Recovery Model” (Ragsdale et al., 2011) combine the two lines of research of perceived distress and of recovery which provides the only established link to unfinished tasks so far.
Particularly, the relationship of recovery activities and experiences is theoretically grounded on the COR-theory and therefore, it seems valuable to focus on identifying personal resources within these factors. To date, there does not exist any research or indication for activities related to unfinished tasks, which is why this factor will be neglected for now. Thus, a focus lies on the recovery experiences in relation to distress. The model includes experiences of mastery, psychological detachment, relaxation and control. Although significant findings

emerged for psychological detachment, Ragsdale et al. (2011) suggested that thinking about study-related content in the free-time may also be an important tool for solving study-related tasks and problems. Therefore, lack of psychological detachment may also be positive for resolving the stressor of unfinished tasks. This comprehensible ambiguity leads to neglection of psychological detachment as a factor to study for the time being.

However, non-significant in relation to recovery activities and recovery quality, mastery experiences are particularly based on personal resources of the COR-theory. Therefore, it seems reasonable to re-test the non-significant findings of Ragsdale et al. (2011) in relation to unfinished tasks and not only include mastery experiences as a side factor but examine it as a main consideration. Examples of mastery experiences with its defining relation to personal resources are self-efficacy, skills and competencies. Hence, a special focus on self-efficacy as a personal resource and conscientiousness, which includes competencies and skills related to time management seem to be valuable. Incorporating the features of relaxation and control experience serve as enhanced theoretical grounding. The experience of relaxation is characterized by low activation (i.e. low arousal) and positive emotions, whereby control experience is defined by the perceived control that one feels to have over the organization of time outside fixed study schedules (Ragsdale et al., 2011).

**Perceived self-efficacy.** Perceived self-efficacy is defined as the beliefs about one's own capability to accomplish certain behaviors (Bandura, 2010). It is among the most consistent identified personal factors that are related to more distress when present at a low level (Litt, 1988; Saleh, Camart, & Romo, 2017) and to more well-being when present at a high level (Avey, Luthans, Smith, & Palmer, 2010). In relation to the academic context, Chemers, Hu, and Garcia (2001) found that high self-efficacious students were more likely to perceive themselves as being able to deal with the demands of college life than were low self-efficacious students who appraise those demands as threatful. The appraisal of the demands as a threat in turn leads to higher perceived distress (Chemers et al., 2001). Additionally, Ragsdale et al. (2011) suggest examining the influence of personal variables on their model and specifically named self-efficacy. In relation to recovery experiences, academic self-efficacy beliefs (i.e. that one thinks to be able to deal with study-related content and settings) have been found to be a determinant of positive affect regarding studying in undergraduate students (Putwain, Sander, & Larkin, 2013), whereby positive affect is a feature of relaxation experience. Therefore, it is expected that self-efficacy has a positive effect on levels of distress when faced with the stressor of unfinished tasks. However, there does not exist a clear

indication which kind of association self-efficacy has to the relationship between unfinished tasks and distress.

**Conscientiousness.** The second personal resource that is included in the current research is conscientiousness. It is defined as the extent to which the individual is organized, achievement-oriented, reliable, responsible, meticulous and self-determined (Alarcon et al., 2011; Bartley & Roesch, 2011). A meta-analysis of Connor-Smith and Flachsbart (2007) has shown that conscientiousness is related to an active, problem-oriented coping style. Thereby, the facets of conscientiousness have been shown to interact differently with certain coping styles in that some of them inhibit maladaptive avoidant coping strategies and some others promote the adaptive coping-styles (Connor-Smith & Flachsbart, 2007). As Bartley and Roesch (2011) found out, conscientiousness can be seen as a protective factor from stress in that it aids in the selection of coping mechanisms. Therefore, conscientiousness can be qualified as a personal resource. Another argument to include conscientiousness into the current research comes from the same study of Bartley and Roesch (2011) which showed that conscientiousness is positively related to positive emotions which is a defining characteristic of the relaxation experience.

In an experimental evaluation of the effectiveness of a time-management training, Häfner and Stock (2010) found that the ability to effectively manage one's own time is responsible for an increase in perceived control of time and a decrease in perceived distress. Since organization is one of the main characteristics of conscientiousness, it might be assumed that people high in conscientiousness feel themselves as having more control over their study time as well so that distress levels are lowered by a high control experience even in face of many unfinished tasks. Additionally, it has been shown that only if the enactment of a certain behavior requires more organization and structure and therewith, higher cognitive control (e.g. in unusual contexts or for more difficult activities), conscientiousness explains this relationship between intentions and behavior (De Bruijn, De Groot, Van den Putte, & Rhodes, 2009). It might be assumed that unfinished tasks require more cognitive control. Thus, people high in conscientiousness might be better able to deal with the stress that this might cause. However, these assumptions are only considerations that emerge from the literature in combination with intuitive thoughts about the nature and effects of unfinished tasks.

**Current study**

As research on distress has revealed, there is a great need for further studies among students. The model by Ragsdale et al. (2011) has been tested with the target group of students and includes the most important concepts of stressors, resources and perceived distress that inform the current research. Building on these insights, unfinished tasks is examined as the stressor in the current study and the ultimate outcome of perceived distress as the dependent variable. The findings of the model will integrate further propositions of the COR theory of Hobfoll in that personal resources of recovery experiences are included. Thereby, personal characteristics (i.e. mastery experiences) that are found to be related to distress levels and additionally, to the most important recovery experiences of control experience and relaxation with their defining features of low activation, positive emotions and perceived control over organization of study time, are chosen. Namely, these are self-efficacy in an academic context and conscientiousness.

The relevance of this research lies in obtaining information in a largely unexplored field of study. The current study may be used as a basis for universities to gain insights into the mechanisms that influence the high level of distress in their students and consequently design interventions. As already known, research in the field is sparse and, therefore, only assumptions can be made regarding possible associations with the relationship between unfinished tasks and level of perceived distress. In terms of the theoretical model by Ragsdale et al. (2011), unfinished tasks are therefore assumed to be a stressor which lead to more distress. Since no prior studies exist that might justify strong hypotheses, it may be more adequate to pose formulations in an explorative way:

*RQ 1: Are more unfinished tasks related to more perceived distress in students?*

*RQ 2: Is the relationship between unfinished tasks and perceived distress moderated or mediated by the level of self-efficacy?*

*RQ 3: Is the relationship between unfinished tasks and perceived distress moderated or mediated by the level of conscientiousness?*

Thereby, mediation or moderation are explored since they might explain how unfinished task and distress are related to each other. In case of a mediation, conscientiousness and self-efficacy might explain the assumed relationship between unfinished tasks and perceived distress. In other words, people who have more unfinished tasks perceive less distress because they are more self-efficacious or more conscientious. On

the other hand, there would be a moderation if unfinished tasks and self-efficacy or conscientiousness interact with each other to produce the levels of distress. This means that having unfinished tasks only leads to distress in students with low self-efficacy or a low level of conscientiousness.

The basic model of Ragsdale et al. (2011) focused on the recovery over the weekend. However, since the current study focuses on the level of perceived distress and personal resources, it seems more feasible to measure those factors at one point in time altogether.

## Methods

### Participants and Design

The participants were recruited through multiple channels. On the one hand via the SONA-system of the University of Twente which is available for psychology and communication science students. Participants were rewarded by 0.5 SONA points. Additionally, social media (i.e. the Facebook and WhatsApp accounts of the researchers) was used to reach students outside of the University of Twente. In total 170 participants started with the survey. Participants were excluded if they could not be assigned to the group of students, indicated to have a bad understanding of the questionnaire or if there were many missing data (Unfiltered $N$=170). The final sample consisted of 129 students. Table 1 provides characteristics of the sample. Thereby, it appeared that the average participants were mostly German females, enrolled in a Bachelor program and were in their third year of study. Noticeably, the majority of participants were enrolled in another study program than psychology or communication science.

Table 1

*Mean characteristics of the sample*

| Characteristic | Category | M (SD) or N (%) |
|---|---|---|
| Age[a] | | 21.84 (1.73) |
| Gender[b] | Female | 80 (62) |
| | Male | 49 (38) |
| Nationality[b] | | |
| | Dutch | 4 (3.1) |
| | German | 104 (80.6) |
| | Other | 21 (16.3) |
| Studies[b] | | |
| | Psychology | 48 (37.2) |
| | Communication science | 6 (4.7) |
| | Other | 75 (58.1) |
| Years of study[a] | | 2.96 (2.16) |
| Phase of study[b] | | |
| | Bachelor (B) year 1 | 29 (22.5) |
| | B2 | 20 (15.5) |
| | B3 | 32 (24.8) |
| | B4 or higher | 30 (23.3) |
| | Master (M) year 1 | 9 (7.0) |
| | M2 | 7 (5.4) |
| | M3 or higher | 2 (1.6) |

*Note.* N = 129

[a] M (SD), [b] N (%)

A within-subjects correlational survey design was used with unfinished tasks as the independent variable and perceived distress as the dependent variable. Conscientiousness and self-efficacy were tested for their possible associated value as moderators or mediators. The current study was part of a larger research project investigating the relationship between unfinished tasks and perceived distress in that two other studies explored alternative exploratory mechanisms or interactions.

## Materials and Procedure

An online questionnaire was designed comprised of scales of the different constructs. First, information about the purpose of the study was given and the participants had to give a declaration of consent. Afterwards, sociodemographic data were posed including age, gender, nationality, year and type of study. Since the study was aimed at students, the first question concerned the general status of participants (i.e. whether they are students or not). Then, the variables of unfinished tasks and perceived distress were incorporated, followed by the Psychological Capital Questionnaire (including items for self-efficacy), scales assessing rumination as a trait and as a state variable (for accounts of those variables, see the research of Schmeer and Taal (2019) and Gütges and Taal (2019)) and lastly, conscientiousness. In total, the questionnaire included 81 items and it was estimated to take between 15 and 20 minutes to be completed. After completing the survey, the students were asked to indicate their level of language proficiency to screen for possible outliers based on misunderstanding the English language. Finally, they were thanked for their participation.

## Measures

**Unfinished tasks.** The independent variable of unfinished tasks was assessed using the six items of Syrek et al. (2016) for example “I have not finished a large amount of due tasks this week.”. Thereby, participants were instructed to relate the content of the items to their study tasks at university. The items (for instructions and items see Appendix A) were scored on basis of a five-point Likert scale ranging from 1 (= strongly disagree) to 5 (= strongly agree). The item scores were summed up to obtain a total score. Higher scores indicate a higher degree of unfinished tasks. Cronbach’s alpha in the original study was .93. In the current study alpha was .81 and Lambda 2 .82.

**Perceived distress.** The dependent variable was measured using the Perceived Stress Scale by Cohen (1994). The ten items originally concern feelings of the last month. For the current research purposes, the scale was adapted so that items were related to feelings during

the previous week (see Appendix B; e.g. “In the last week, how often have you been able to control irritations in your life?”). A five-point Likert scale was applied ranging from 0 (= never) to 4 (= very often). The total score of the Perceived Stress Scale was obtained by summing all items after reversing scores of items 4, 5, 7 and 8. Higher perceived distress is revealed through a higher score. Cronbach’s alpha was .90 and Lambda 2 .91 in the current study. The original study reported Cronbach’s alpha to range from .84 to .86 in three different samples (Cohen, Kamarck, & Mermelstein, 1983).

**Self-efficacy.** Self-efficacy was assessed using the respective scale of the Psychological Capital Questionnaire (Liran & Miller, 2017) which was used in total for the study of Gütges and Taal (2019) as part of this common research. The scale for self-efficacy consisted of six items (see Appendix C; item numbers: 1, 6, 10, 16, 21, 24; e.g. “I feel confident helping to set study-related targets/goals”). The score was obtained by summing items of the five-point Likert Scale ranging from 1 (= strongly disagree) to 5 (= strongly agree). Thereby, a higher score indicated a higher level of self-efficacy. Cronbach’s alpha and Lambda 2 revealed reliabilities of .75 and .76 respectively for the current study, whereas original alpha was .87.

**Conscientiousness.** The short version of the Conscientiousness Scale by Goldberg (1992) was taken from the International Personality Items Pool (IPIP). The ten items (see Appendix D; e.g. “I am always prepared.”) were scored on basis of a five-point Likert Scale ranging from 1 (= very inaccurate) to 5 (= very accurate). Items 3, 5, 7 and 10 were reversely scored before summing all item scores in order to obtain a total scale score. Thereby, a higher score was indicative of being more conscientious. Thus, reliability scores of Cronbach’s alpha and Lambda 2 both had a score of .80 and .81 respectively in the current study. Original alpha was .79.

## Data analysis

Firstly, participants who indicated not to be students or having a very bad linguistic understanding of the questionnaire, were excluded from analyses. Additionally, those who answered only questions about their demographics or only questions of the first scale were filtered out. The remaining descriptives were analyzed using raw or sum scale scores. Thereby, mean, standard deviation, minimum and maximum scores and Pearson correlations between variables were provided (Table 2). Nationality and type of study were excluded from these analyses since these are nominal variables with no ranking so that these values were not

useful for analyses. Additionally, variables that were part of the other two studies are not shown (for full accounts of these, see Schmeer and Taal (2019) and Gütges and Taal (2019)).

Principle component analyses with varimax rotation were conducted for the scale of perceived distress since this was adapted in wording to fit the purpose of the study. Kaiser's criterion (Eigenvalues >1) indeed identified one factor and thus confirmed the scale's validity. Cronbach's alpha and Guttman's lambda 2 were obtained to test for reliability of all scales.

In order to answer the first research question, the Pearson correlation between unfinished tasks and perceived distress was calculated. Regression analyses with the PROCESS-tool of Hayes (Hayes, 2012) were conducted to test for moderating and mediating effects of self-efficacy and conscientiousness on the main relationship. Thereby, variables were automatically centered. Furthermore, mediation and moderation analyses were run independently of each other and for self-efficacy and conscientiousness separately. Mediation could be established when firstly, significant relations between the predictor, mediator and outcome (measured for each pair of variables separately) existed. Secondly, the indirect effect should not include 0 in the confidence interval. Moderation is said to be established when the interaction effect of the predictor and moderator is significant.

It was checked for normality by means of looking at skewness and kurtosis of scales. The scores all seemed to be approximately normally distributed besides the scale of self-efficacy. The negative skewness score ($z$= -2.82, $p$= .01) was indicative of many high scores of the scale and the significant positive kurtosis ($z$= 2.7, $p$= .01) signified a heavy-tailed distribution. However, the PROCESS-tool of Hayes corrected for this issue by application of bootstrapping. Additionally, confidence intervals were automatically "bias-corrected and accelerated" (BCa-procedure) so that neither differences in the mean of bootstrapped sample distributions nor skewed distributions could distort confidence intervals. For other analyses, non-normal distribution was not a problem because of the large sample size.

## Results

### Descriptives

All scale scores were significantly correlated with each other (see Table 2). The correlation between unfinished tasks and perceived distress was positive and moderate, meaning that more and urgent unfinished tasks were related to more distress that was perceived by participants. Conscientiousness and self-efficacy were both negatively correlated with unfinished tasks and perceived distress. Thereby, correlations between conscientiousness

and both variables (i.e. unfinished tasks and perceived distress) and self-efficacy and perceived distress were moderately strong. For, self-efficacy and unfinished tasks, the significant negative correlation was on a low level. Overall, these findings indicated that the more conscientious or self-efficacious students were, the less unfinished tasks they had, and the less distress was felt. Conscientiousness and self-efficacy were small and positively correlated meaning that people who were more conscientious also had higher self-efficacy scores.

The correlations between scales and demographic variables all were non-significant indicating that the factors this research was interested in were independent of background variables of participants. Phase of study, years of studying and age all three correlated significantly on a moderate to high level with each other, reflecting that older students had already studied longer and reached a higher phase within their studies.

For unfinished tasks, scores could have possibly ranged from 6 to 30 of which all were found in the current sample. Thus, a score of 18 indicated the theoretical mean. Although the mean score of the current study was somewhat lower ($M$=16.33), it does not deviate much from the theoretical mean since 18 is within the range of the found standard deviation. However, the current findings indicated that students in the sample on average did not have many unfinished tasks.

For perceived distress, a possible range would have included scores from 0 to 40. Besides the very first and last values, all scores were observed in the current study. Applying the same interpretation for the mean as above to this scale, the observed mean was slightly lower than the optimal mean of 20 ($M$=18.71), which means that the perceived distress was commonly on an average level among the sample. However, the high standard deviation indicated that scores of unfinished tasks varied greatly among the sample ($SD$=7.4).

Conscientiousness could take values between 10 and 50 with a mean of 30. The current sample included only scores between 21 and 49, leaving out the very low values of conscientiousness. Considering the mean score of 34.08, students seemed to have a certain level of conscientiousness but mostly on a moderate level.

Self-efficacy was scored in the same manner as unfinished tasks and thus, the possible range could entail values from 6 to 30 with a mean of 18. Comparing this to the observed mean score, it appeared that students were in the upper range considering the standard deviation ($M$=21.09).

Table 2

*Means (M), Standard Deviations (SD), Minimum, Maximum and Correlations between Variables*

| Variables | M | SD | Min | Max | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Unfinished tasks[a] | 16.33 | 5.55 | 6 | 30 | | | | | | | |
| 2. Perceived distress[a] | 18.71 | 7.4 | 3 | 39 | **.45**** | | | | | | |
| 3. Conscien-tiousness[b] | 34.08 | 6.34 | 21 | 49 | **-.43**** | **-.31**** | | | | | |
| 4. Self-efficacy[c] | 21.09 | 3.94 | 6 | 29 | **-.28**** | **-.43**** | **.22*** | | | | |
| 5. Gender[a] | 1.62 | 0.49 | 1 | 2 | .05 | .11 | .02 | -.14 | | | |
| 6. Age[a] | 21.85 | 1.73 | 18 | 29 | .09 | -.02 | .00 | -.09 | -.17 | | |
| 7. Phase of study[a] | 3.0 | 1.52 | 1 | 7 | -.15 | -.05 | -.01 | -.03 | .11 | **.43**** | |
| 8. Years of studying[a] | 2.9 | 2.06 | 1 | 21 | -.09 | .01 | -.06 | -.06 | .03 | **.45**** | **.58**** |

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

[a] *N*=129, [b] *N=114,* [c] *N=120*

**Research questions**

**Unfinished tasks and perceived distress.** The first main research question was whether more unfinished tasks are related to more perceived distress. This could be confirmed by a moderately strong significant correlation ($r$=.45, $p$<.01) between the two scales (see Table 2).

**Conscientiousness.** It was analyzed whether conscientiousness moderates or mediates the relationship between unfinished tasks and distress. Mediation analysis revealed that conscientiousness did not act as a mediator, as can be seen by inclusion of zero in the confidence intervals for indirect effects ($b$= 0.08, BCa CI [-0.02, 0.2]). Interestingly, conscientiousness and perceived distress were significantly moderately correlated ($r$= -.31, $p$<.01), but when combined within a model together with unfinished tasks as a predictor (see Table 3, Model 2), this relation became non-significant. Since the path from unfinished tasks to conscientiousness ($b$= -0.49, $t$= -5.01, $p$= .00) was significant, this indicated that a great

proportion in the relation between conscientiousness and perceived distress was explained by unfinished tasks.

Table 3

*Mediation Analysis Predicting Perceived Distress from Unfinished Tasks and Conscientiousness*

| | | | | | | 95% BCa CI | |
|---|---|---|---|---|---|---|---|
| | $R^2$ | b | SE | t | p | LL | UL |
| Model 1 (Outcome: Conscientiousness) | 0.18 | | | | | | |
| Constant | | 42.17 | 1.7 | 24.75 | .00 | 38.8 | 45.55 |
| Unfinished tasks | | -0.49 | 0.1 | -5.01 | .00 | -0.68 | -0.3 |
| Model 2 (Outcome: Perceived Distress) | 0.21 | | | | | | |
| Constant | | 15.88 | 5.00 | 3.18 | .00 | 5.98 | 25.78 |
| Conscientiousness | | -0.16 | 0.11 | -1.51 | .13 | -0.38 | 0.05 |
| Unfinished tasks | | 0.51 | 0.12 | 4.13 | .00 | 0.27 | 0.76 |
| Total Effect Model (Outcome: Perceived distress) | 0.2 | | | | | | |
| Constant | | 8.93 | 1.98 | 4.52 | .00 | 5.01 | 12.84 |
| Unfinished tasks | | 0.6 | 0.11 | 5.25 | .00 | 0.37 | 0.82 |
| Indirect Effect Model (Mediation) | | 0.08 | 0.06 | | | -0.02 | 0.2 |

Note. *N=114*

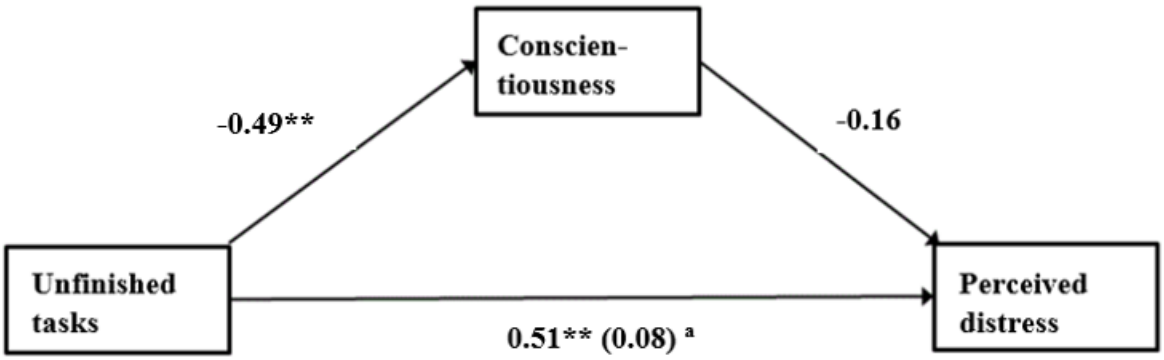


*Figure 2.* Unstandardized regression coefficients for the relationship between unfinished tasks and perceived distress as mediated by conscientiousness.

[a] Indirect path coefficients in parentheses.

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

As became apparent, moderation analysis for conscientiousness revealed a non-significant interaction (*b*= -0.01, *t*= -.56, *p*=.58). The moderation model (see Table 4) was compared to Model 2 of Table 3 which did not include the interaction term but was equal in all other respects. Thereby, comparisons of $R^2$ (.21 and .22, respectively) strengthened the rejection of a moderation effect of conscientiousness.

Table 4

*Moderation Analysis Predicting Perceived Distress with Inclusion of an Interaction Effect of Unfinished Tasks and Conscientiousness*

| Variables | $R^2$ | B | $SE_B$ | t | Sig. | 95% BCa CI for B | |
|---|---|---|---|---|---|---|---|
| | | | | | | LL | UL |
| Model (Outcome: Perceived Distress) | .22 | | | | | | |
| (Constant) | | 10.75 | 10.51 | 1.02 | .31 | -2.82 | 35.56 |
| Unfinished tasks | | 0.82 | 0.56 | 1.46 | .15 | -0.05 | 1.79 |
| Conscientiousness | | -0.02 | 0.28 | -0.07 | .95 | -1.12 | 0.62 |
| Unfinished tasks x Conscientiousness | | -0.01 | 0.02 | -.56 | .58 | -0.06 | 0.02 |

*Note.* $\Delta R^2 = .00$

**Self-efficacy.** As for conscientiousness, it was analyzed whether self-efficacy may moderate or mediate the relationship between unfinished tasks and perceived distress. Results indicated that self-efficacy partially mediated the relationship between unfinished tasks and perceived distress since zero is not included in the 95%-Confidence Interval of the indirect effect (*b*= 0.12, BCa CI [0.02, 0.26]). In other words, participants who had more unfinished tasks were less likely to held self-efficacious beliefs regarding their studies and through low levels of self-efficacy more likely to perceive higher levels of distress. Since the mediation was of partial nature, there was still a significant direct effect of unfinished tasks on perceived distress.

Table 5

*Mediation Analysis Predicting Perceived Distress from Unfinished Tasks and Self-efficacy*

| | | | | | | 95% BCa CI | |
|---|---|---|---|---|---|---|---|
| | $R^2$ | b | SE | t | p | LL | UL |
| Model 1 (Outcome: Self-efficacy) | .08 | | | | | | |
| Constant | | 24.43 | 1.11 | 22.11 | .00 | 22.25 | 26.62 |
| Unfinished tasks | | -0.2 | 0.06 | -3.19 | .00 | -0.33 | -0.08 |
| Model 2 (Outcome: Perceived Distress) | .29 | | | | | | |
| Constant | | 24.16 | 4.16 | 5.8 | .00 | 15.91 | 32.41 |
| Self-efficacy | | -0.62 | 0.15 | -4.06 | .00 | -0.92 | .68 |
| Unfinished tasks | | 0.47 | 0.11 | 4.29 | .00 | 0.25 | 0.68 |
| Total Effect Model (Outcome: Perceived distress) | .19 | | | | | | |
| Constant | | 8.99 | 1.95 | 4.6 | .00 | 5.13 | 12.86 |
| Unfinished tasks | | 0.59 | 0.11 | 5.32 | .00 | 0.37 | 0.81 |
| Indirect Effect Model (Mediation) | | 0.12 | 0.06 | | | 0.02 | 0.26 |

Note. *N=120*

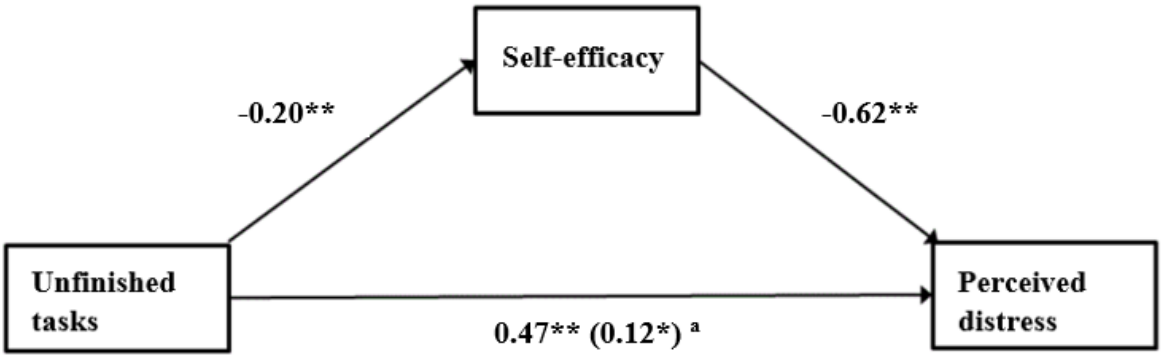


*Figure 3.* Unstandardized regression coefficients for the relationship between unfinished tasks and perceived distress as mediated by self-efficacy.

[a] Indirect path coefficients in parentheses.

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

Tests for moderation revealed a non-significant interaction of self-efficacy (*b*=-0.02, *t*=-.89, *p*=.38). The moderation model (see Table 6) was compared to Model 2 of Table 5

which did not include the interaction term but was equal in all other respects. Thereby, comparisons of $R^2$ (.29 and .30, respectively) strengthened the rejection of a moderation effect of self-efficacy.

Table 6

*Moderation Analysis Predicting Perceived Distress with Inclusion of an Interaction Effect of Unfinished Tasks and Self-efficacy*

| Variables | $R^2$ | b | $SE_b$ | t | Sig. | 95% BCa CI for B | |
|---|---|---|---|---|---|---|---|
| | | | | | | LL | UL |
| Model (Outcome: Perceived Distress) | .30 | | | | | | |
| (Constant) | | 16.37 | 9.69 | 1.69 | .09 | -2.82 | 35.56 |
| Unfinished tasks | | 0.87 | 0.46 | 1.87 | .06 | -0.05 | 1.79 |
| Self-efficacy | | -0.25 | 0.44 | -0.58 | .56 | -1.12 | 0.62 |
| Unfinished tasks x Self-efficacy | | -0.02 | 0.02 | -.89 | .38 | -0.06 | 0.02 |

*Note.* $\Delta R^2 = .00$

## Conclusion and Discussion

### Overview of findings

Results indicate that more unfinished study tasks are associated with more perceived distress in students. Students who experience to have many or urgent undone tasks, perceive a higher level of distress. It was found that the level of distress that is perceived in response to unfinished tasks is due to the level of self-efficacy. However, conscientiousness does not explain the relationship between unfinished tasks and perceived distress, nor does it interact with unfinished tasks to influence levels of perceived distress.

As was assumed from previous research about associations between stressors and conscientiousness, more unfinished tasks are related to being less conscientious. Additionally, and confirming the literature, the less conscientious people are, the higher is their perceived distress. However, when unfinished tasks and conscientiousness are taken together to predict levels of perceived distress, the path coefficient from conscientiousness to unfinished tasks became non-significant. Thus, conscientiousness seems to overlap with factors belonging to unfinished tasks to such a great extent that the variance that is explained by conscientiousness alone does not add much value when unfinished tasks is taken as a second predictor. That means that having fewer unfinished tasks might be inherent to high conscientiousness.

Furthermore, conscientiousness did not explain enough variance in the relationship between unfinished tasks and perceived distress as to explain it. Additionally, there is no interaction between conscientiousness and unfinished tasks which means that the association between unfinished tasks and perceived distress is independent of how conscientious students are.

Self-efficacy partially explained the relationship between unfinished tasks and perceived distress. In other words, people who felt more distress in response to more unfinished tasks do so, because they are less self-efficacious. As for conscientiousness, the relationship between unfinished tasks and perceived distress is independent of an interaction between unfinished tasks and self-efficacy. In case of this interaction in the assumed direction, only low self-efficacious students would have perceived higher levels of distress. However, this is not the case.

Furthermore, neither age, gender, nationality, years and type of study nor phase of study showed a significant relation to one of the studied factors. Hence, they do not confound the research in any way.

**Implications**

Foremost, the seemingly important role of unfinished tasks as a stressor among students should be noted. The current study is the first to find scientific evidence that unfinished study tasks and distress are moderately strong related among students. Additionally, the findings within a sample of diverse studies and nationalities may be an indication for a universal effect among the target group of students.

Comparisons with the provided norm groups (both male and female, the age group of 18-29 and white race) of the Perceived Stress Scale (Cohen, 1994) revealed that our student sample perceived rather high stress on average. This supports the argumentation of studying distress in students since they seem to be an at-risk group. However, when compared with two student samples of the study of Cohen et al. (1983) that originally used the Perceived Stress Scale, our sample experienced rather low levels of distress. Possibly, the findings could be explained by the fact that the scale was adapted in terms of the time frame. Participants were instructed to answer questions in relation to the previous week and not in relation to the previous month as in the original version. Possibly, the perceived stress was lower in this rather short time frame, especially because it was measured outside the exam period at German universities, as most of the participants were German.

The current study was based on the "Integrated Weekend Recovery model" (Ragsdale et al., 2011). Thereby, a focus was set on personal resources of the COR-theory which are incorporated in the recovery experiences and essentially, in mastery experiences. Thus, two lines of research, firstly, the established link between unfinished tasks as stressor and recovery (Syrek & Antoni, 2014; Syrek et al., 2016) and secondly, the link of personal resources and perceived distress in students (Hobfoll, 2012) were combined. In doing so, it was aimed to provide a sound theoretical basis for this research. Following this approach, the focus on mastery experiences was set against the findings of Ragsdale et al. (2011), who found that mastery experiences do not mediate the relation between recovery activities and recovery qualities. However, there were good reasons to believe that in relation to unfinished tasks the results may deviate from the model of Ragsdale. Considering that the found relations between all variables were moderately strong and most importantly, self-efficacy acted as a partial mediator, the model should be revised for unfinished tasks. As Ragsdale et al. (2011) noted in relation to recovery activities, these may be stressor-dependent (i.e. whether and which resource-providing or resource-consuming activities are enacted, depend on the kind of stressor). Consequently, the stressor defines which experiences of psychological detachment, mastery, control or relaxation are most important for that specific stressor. However, it may be the case that there are groups of stressors that share the same set of important recovery experiences as for the two stressors in the original study of Ragsdale et al. (2011) where mastery experiences were found to be useless.

Additionally, the current research has shown that it might be enough to limit the model to stressors, recovery experiences and distress and thus, exclude factors of recovery quality and need for recovery of the original "Integrated Weekend Recovery Model" (Ragsdale et al., 2011). Furthermore, since studying is always possible and not only limited to working days, it might be more adequate not to set the weekend as the only point of recovery and limit measurement points to this time frame but to take the week into account as well. Nevertheless, the model of Ragsdale et al. (2011) has been the best model to inform the current research because it includes all factors that were thought to be of relevance.

Conscientiousness as a personal resource was found to be important in relation to both unfinished tasks and perceived distress although it does not mediate or moderate the relationship. However, it seems that students who are less conscientious have more tasks that still need to be completed than students with a higher level of conscientiousness. This indicates that the current research has found a factor (i.e. unfinished tasks) that might explain

previous findings of relations between conscientiousness and perceived distress (Bartley & Roesch, 2011; Häfner & Stock, 2010). Furthermore, findings showed that students already seem to have a certain degree of conscientiousness (i.e. the found scores did not include low values). Thus, it is possible that in other groups, e.g. workers, also low scores of conscientiousness may be found. A wider range would make it possible to detect significant differences between lower and higher levels of conscientiousness. Then, conscientiousness could indeed mediate or moderate the relationship between unfinished tasks and perceived distress.

However, in students, the beliefs of being able to cope with study-related demands (i.e. academic self-efficacy beliefs in relation to unfinished tasks) seem to be of greater importance than conscientiousness. In this regard, the current research showed that self-efficacy partially explains the relationship between unfinished tasks and distress. Thereby, the indirect effect was much smaller than the direct effect of unfinished tasks which indicates that nevertheless, unfinished tasks remains the main factor in association with perceived distress. In support of Chemers et al. (2001), students were better able to deal with demands of student life (i.e. unfinished tasks) when they were more self-efficacious which, as a consequence, lowers the levels of perceived distress. Thus, in order to help students to cope with distress in response to more unfinished tasks, universities could try to strengthen the level of academic self-efficacy by increasing mastery experiences in relation to unfinished tasks. Van Dinther, Dochy, and Segers (2011) have found that especially interventions which are based on social cognitive theory are effective in enhancing students' self-efficacy. Thereby, mastery experiences were identified as one of the most powerful factors. It has to be noted that generating self-efficacy beliefs in students is dependent on how comparable the learned mastery experience is in relation to the real-life situation (Van Dinther et al., 2011), and hence, in relation to unfinished tasks. Furthermore, the authors pointed out that goal setting and self-reflection as features of self-regulation can cause the perception of learning progress, so that mastery experience can occur. Thus, it might be useful to include self-regulation in interventions of academic self-efficacy.

**Limitations and strengths**

The most important strength of the current research is the opening of a new research field regarding unfinished tasks as a stressor in students. No evidence regarding this relationship has been gathered beforehand and thus, a new perspective is provided. Since the purpose of the study was to explore whether the assumed relationship exists, a cross-sectional

correlational survey design was used. Therefore, no causality can be inferred. However, considering the aim of the study and the fact that no theories exist in relation to unfinished tasks and distress, an experimental design would have been unjustified.

The basis of the study was provided by the model of Ragsdale et al. (2011). It was mostly valuable because of its validity in students, the link between a stressor as predictor, perceived distress as an outcome and the association of the model to recovery, which was until then the only known association to unfinished tasks. Therefore, even if other models could have accounted for the link between a stressor and strain in students, it was only the "Integrated Weekend Recovery model" (Ragsdale et al., 2011) that included all the theory-based important factors. Since almost nothing was known of unfinished tasks, for purpose of ease and exploration, it was deviated from the findings of the model and focus points were set. This might have caused the impression that some links were drawn arbitrarily. In this regard, the highly explorative nature of the study should be considered. Additionally, it should be noted that it was tried to base suggested relations between unfinished tasks and other factors to the greatest extent possible on scientific evidence.

Regarding survey design, it should be noted that all scales achieved high internal consistency, as indicated by Cronbach's alpha and Lambda 2 the lowest being .76 and .75, respectively. In comparison with original reliability scores, Cronbach's alpha was almost similar for the scale of conscientiousness and slightly lower for scales of unfinished tasks and self-efficacy. This could be due to differences in sample characteristics as for example, the items for unfinished tasks were designed with the aid of focus groups for the target sample of workers. Noticeably, the adapted scale for perceived distress achieved higher internal consistency values than the original measure. Hence, conclusions regarding scores of perceived distress are strengthened. Furthermore, it was already suggested that exam periods may influence the levels of perceived distress. As Cohen (1994) indicated, daily or current events and situations affect scores of the Perceived Stress Scale which lowers its predictive validity. Nevertheless, this fact enhances the current results because significant links were found even in absence of exam periods for most of the participants.

Another strength of the current research can be found in the sample characteristics. There were many participants of diverse nationalities and studies. Nevertheless, the participants were mainly Germans and since no question has verified the place of study, it cannot be differentiated between Germans that study in the Netherlands or in Germany. This could have helped in exploring whether differences exist between university/study systems.

Another strength regarding the sample is that most participants studied other things than psychology or communication science. Therefore, it can be concluded that the majority participated out of intrinsic and not of extrinsic motivation (i.e. to gain SONA-points).

**Future research**

Since the theoretical basis for a new perspective in a rather unexplored field of study is established by the current study, there are many future directions for more research. First, the relationship of unfinished tasks and perceived distress should be tested with experiments to establish causality. This could be done by forming two groups of students, of which one gets many tasks to do for university for the following week. The other group gets no tasks at all. Then, stress levels could be measured and compared the day before the set deadline. Next, it could be investigated whether the effect for this main association is generalizable to other groups, e.g. workers.

Furthermore, the current research provided a differentiated view on the "Integrated Weekend Recovery Model" (Ragsdale et al., 2011). Implications stimulate adaptations in order to make the model more feasible. This could be done by excluding the factors of recovery quality and need for recovery and testing for more possible stressors of student life. Thereby, sets of stressors may be defined that share the same recovery experiences. Additionally, it should be tested which recovery activities are related to unfinished tasks. This may aid in preventing high levels of distress related to unfinished tasks by providing interventions or information about the best recovery activities during leisure time. In this regard, the model should also take measurement points during the week and not only in relation to the weekend into account since studying is mostly not limited to working days. The goal should be to provide a model that sophisticatedly fits the target group of students. Additionally, it may inform future interventions to set better focus points and better help students to cope with unfinished tasks.

Considering the influence of current situations and daily hassles (e.g. exam periods) on the levels of perceived distress, it is important to find stable factors that generally help the individual when stressful study-related situations arise. The current research has provided insights into the mechanisms regarding self-efficacy and conscientiousness. Based on these findings, it could be investigated whether interventions to strengthen academic self-efficacy beliefs help students to better cope with unfinished tasks. Regarding conscientiousness, studies could explore whether there is a causal relationship between conscientiousness and unfinished tasks. Since conscientiousness is more of a trait than a state variable, it could be

assumed that being more conscientious leads to having less unfinished tasks. Furthermore, personal resources are defined by their quality in helping to deal with distress, so that it could be worth of exploring which coping mechanisms can aid in coping with more unfinished tasks.

Another direction for future research that emerged during the discussion was the investigation of whether the results would differ regarding different university/study systems (e.g. Netherlands vs. Germany). If such a difference would be found, it could be focused on helping students not only by interventions to strengthen personal factors, but also by the design of the study context. Thereby, factors of that system which seemingly cause less distress in response to unfinished tasks would need to be examined. Then, it could be tried to implement these factors in the respective other study system.

The initial goal of the current study was to bridge the gap of knowledge regarding unfinished tasks as a stressor for students. Additionally, it was aimed to find out whether personal resources play a role in the relationship between unfinished tasks and perceived distress. Thereby, the “Integrated Weekend Recovery Model” (Ragsdale et al., 2011) provided the theoretical basis. Finally, and most importantly, the current research can be seen as the first scientific evidence of this relationship. In conclusion, there are many opportunities that could and should be taken to gain insights into the mechanisms related to unfinished tasks as a stressor.

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## Appendix A: Items for unfinished tasks

In the following statements, consider the tasks of you had to do for your study at the university in the **past week**. Please check the answer that is most appropriate.

1. “I have not finished important tasks that I had planned to do this week.”,
2. “I have not finished a large amount of due tasks this week.”
3. “I have not completed this week’s urgent tasks.”
4. “I have not even started with important tasks, I wanted to fulfill this week.”
5. “I need to carry many of this week’s due tasks into the next week.”
6. “I have not started working on urgent tasks that were due this week.”

Response options:

1 = Strongly disagree

2 = somewhat disagree

3 = Neither agree nor disagree

4 = Somewhat agree

5 = Strongly agree

## Appendix B: Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the **last week**. In each case, you will be asked to indicate how often you felt or thought a certain way.

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

Response options:

0 = Never
1 = Almost never
2 = Sometimes
3 = Fairly often
4 = Very often

## Appendix C: Psychological Capital Questionnaire - Self-efficacy

The following statements describe how you may think about yourself right now. Please indicate by means of the options how strongly you agree or disagree with each statement from your perspective as a higher education student.

1. I feel confident analyzing a study-related long-term problem to find a solution
6. I feel confident in representing my position at meetings related to my studies
10. I feel confident in contributing to discussions about my study domain
16. I feel confident helping to set study-related targets/goals
21. I feel confident contacting other students to discuss problems
24. I feel confident presenting information to other students or my lecturers

Response options:

1 = Strongly disagree
2 = Disagree
3 = Somewhat agree
4 = Agree
5 = Strongly agree

## Appendix D: Conscientiousness

How Accurately Can You Describe Yourself?

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate Nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you.

1. Am always prepared.
2. Pay attention to details.
3. Leave my belongings around.
4. Get chores done right away.
5. Make a mess of things.
6. Like order.
7. Often forget to put things back in their proper place.
8. Follow a schedule.
9. Am exacting in my work.
10. Shirk my duties.