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THE EFFECT OF SELF-ESTEEM ON STRESS AND ITS MEDIATION BY COGNITIVE
APPRAISAL IN RESPONSE TO AN ACUTE STRESSOR

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ABSTRACT

This study tests whether *Self-esteem* impacts subjective stress in response to an acute stressor and whether this association is transmitted by cognitive appraisals, as proposed by *the transactional theory of stress and coping*. Acute stress was induced with the *Trier Social Stress Test (TSST)*. Anticipatory appraisals were measured immediately before the *TSST* using the *Primary Appraisal Secondary Appraisal scale (PASA: threat/challenge; Self-concept of own abilities/Belief of control)*. Subjective stress was assessed with a visual analogue scale (*VAS*) around the task, and *Self-esteem* was measured at baseline with the *Rosenberg Self-Esteem Scale (RSES)*. The sample comprised healthy, naturally cycling women (N=38) tested in the follicular phase. Following a preregistered mediation analysis sequence, simple regressions were used to test the total and component paths. Because the total effect was non-significant, exploratory analyses of the cognitive appraisal subscales were conducted.

Self-esteem showed a small, nonsignificant negative relation to subjective stress. *Primary Appraisal* robustly predicted lower stress, whereas *Secondary Appraisal* did not. Disaggregating *Secondary Appraisal* revealed divergent facets: *Self-concept of own abilities* significantly predicted lower stress (moderate effect), but *Belief of control* showed a small, non-significant positive relation to stress. *Self-esteem* related significantly to more favorable *Primary Appraisals* and showed opposing trends with the two subscales of *Secondary Appraisal*.

Findings suggest that under a largely uncontrollable, socio-evaluative stressor, *Self-esteem* may confer protection chiefly via anticipatory meaning and capability beliefs rather than perceived situational control. Practically, capability-focused preparations (e.g., mastery inductions, self-affirmation) may be more stress-buffering than control-enhancing strategies. Replication with larger, mixed-gender samples and modern mediation methods is warranted.

Keywords

self-esteem, cognitive appraisal, primary appraisal, secondary appraisal, self-concept of own abilities, belief of control, Trier Social Stress Test (TSST), subjective stress, transactional theory of stress and coping, Primary Appraisal Secondary Appraisal scale (PASA).

INTRODUCTION

The psychological mechanics of subjective perceived stress has been an interest of research throughout the past decades and beyond. Psychological and physical stressors can produce physiological responses such as hypothalamic-pituitary adrenal axis responses and increases in neuroendocrine and cardiovascular measures (Dickerson & Kemeny, 2004). Chronic stress can cause alterations in these systems, which has been associated with the development of various stress related disorders (Chrousos, 2009). For example, findings have shown that cardiovascular disease alone accounts for about 30 percent of all global deaths (Gaziano & Gaziano, 2012). Therefore, researching the mechanisms leading to psychological stress, investigating the coping processes, and identifying key preventative aspects are of utmost importance for securing public health.

Throughout history, numerous studies have investigated the influence of stress, coping mechanisms, and their impact on health and well-being. Psychological stress, which is a complex phenomenon by itself, has been a focus of many researchers who have been trying to theorize models to explain the construct. The different postulated models can be sorted by how stress occurs and how stress experience is defined. Stress can be postulated as a response, as an external stimulus, as an environmental-individual interaction, or as an environmental-individual transaction (Brough, O'Driscoll, Kalliath, Cooper & Poelmans, 2009; Cox & Griffiths, 2010). In this thesis I mainly focus on the transactional theory of stress, even though all the mentioned postulates have their justifications. The theory of stress as a transaction between the individual and the environment highlights the cognitive interpretation that occurs when individuals attribute meaning to their environment. Those transactions inherent a bidirectional nature, which means that it is neither the individual nor the environment alone that produces stress, but a complex transaction between them (Lazarus & Folkman, 1984). Additionally, across those numerous studies, a certain lack of consistency regarding coping strategies can be found, which makes the topic even more difficult to grasp. However, Lazarus and Folkman (1984) could present a general agreement towards the definition of coping to solve this problem. From their point of view, coping refers to adaptively changing cognitive and behavioral efforts to manage psychological stress.

The transactional theory of stress and coping

The transactional theory of stress and coping developed by Lazarus and Folkman (1984) has been one of the most influential additions to the topic in the past decades. According to them, individuals are constantly appraising stimuli within their environment. The process of appraising creates emotions within the individual. Distress occurs when stimuli are appraised as threatening, challenging, or harmful (for example in form of a stressor) and exceed the individual's resources to cope with it. Consequently, coping strategies are set in motion to deal with the stressful stimuli by managing the emotion or attempting to directly address the stressor itself. The outcome of the first effort to resolve the stressful emotion (e.g., changing the person-environment relationship) is reappraised. The individual then reviews if the outcome is favorable, unfavorable, or unresolved. Positive emotions are released when the situation is favorable or resolved, whereas unfavorable or unresolved results evoke distress once again. As a result, the coping strategies are assessed and either changed or further approaches are considered to resolve the stressful situation (Folkman, 1997; Folkman & Lazarus, 1985; Folkman & Lazarus, 1988; Lazarus, 1990; Lazarus, DeLongis, Folkman & Gruen, 1985; Lazarus & Folkman, 1984). As a conclusion, stress is defined as exposure to stimuli appraised as harmful, threatening, or challenging, that exceeds the individual's capacity to cope (Lazarus & Folkman, 1984). The original theory postulates that the primary features of the transactional theory are cognitive appraisal and coping.

Cognitive appraisal is proposed to have a mediating role in the cognitive process that ascribes meaning to events or stimuli and consequently influences the intensity of the stress reaction (Boyd, Lewin & Sager, 2009; Lazarus & Folkman, 1984; Oliver & Brough, 2002). There are two important factors used for appraising individual-environmental transactions. On the one hand, the individual's personal agenda, that includes their values, goals, and beliefs and on the other side the environmental factors, like demands and resources (Lazarus, 1991). Regarding the present paper, it is important to note that according to Lazarus (1991) the variation of the individual agendas and the complex nature of external environmental contexts are the reasons why there is a great variation in the appraisal of people in the same environmental context. Moreover, in *the transactional theory of stress and coping* the key process (cognitive appraisal) highlights that it is more important, that the event is perceived as stressful rather than the event itself in order to feel the need to introduce coping strategies (Lazarus, 1991; Lazarus, 1999). In this work I specifically focus on the two types of cognitive

appraisal that were identified by Lazarus and Folkman (1984): *Primary Appraisal* and *Secondary Appraisal*.

Primary Appraisal gives meaning to a certain environmental-individual transaction and consequently weighs the severity of that transaction to the wellbeing of the individual. According to Lazarus and Folkman (1984), the transactions can be judged as positive (positive effect on wellbeing), irrelevant (no influence on wellbeing) and stressful (negative effect on wellbeing, in form of harm/loss, *threat*, or *challenge*). A judgement of positive or irrelevant does not release negative emotions according to *the transactional theory of stress and coping*. A stressful transaction can additionally be categorized as producing substantial harm/loss, threatened harm/loss, or challenge (Oliver & Brough, 2002). While threat and harm appraised transactions can lead to damage or provoke negative emotions, transactions that are appraised as challenging can also be interpreted positively, as they have the potential of reward and growth when successfully coped with (Hobfoll, 1989).

Secondary Appraisal in contrast to *Primary Appraisal* does not judge the stressor, but the own resources and consequently how to deal with a stressful situation based on oneself (Dewe & Cooper, 2007). Once a transaction is considered stressful, cognitive processes are set into motion to review one's own coping resources (e.g., self-efficacy), situational variables (e.g., job control), and coping styles (e.g., experience in dealing with similar events), in order to shape, manage, or resolve the stressful situation (Dewe & Cooper, 2007). Therefore, *Secondary Appraisal* takes place when judging the own resources and the possibility to cope with an acute stressor. Regarding both *Primary Appraisal* and *Secondary Appraisal*, it is important to note that both mechanisms work on the same level, and neither is superior to the other. They are not independent, sequential processes, but rather complex, dynamic, and simultaneous interchanged programs (Dewe & Cooper, 2007).

Multiple empirical studies have shown the connection of cognitive appraisal on the individual stress response. In their initial research, Lazarus and Folkman (1984) presented that *Primary Appraisal* is a predictor of mental health outcomes in the face of chronic stress. They have shown that individuals who appraised a chronic stressor as manageable were more likely to have better mental health outcomes compared to those who appraised the stressor as threatening or overwhelming. Folkman & Moskowitz (2004) pointed out that *Primary Appraisal* is related to coping strategies and mental health outcomes. They found that individuals who appraised a stressor as manageable were more likely to use adaptive coping

strategies, such as problem-focused coping, and had better mental health outcomes compared to those who appraised the stressor as threatening or overwhelming.

In case of *Secondary Appraisal*, Carstensen, Isaacowitz, and Charles (1999) have shown in a study of elderly individuals facing chronic illness, that those who reported a higher sense of control over their illness and greater access to social support experienced lower levels of stress. This suggests that perceived resources and coping options, as evaluated during the *Secondary Appraisal* process, can influence stress levels. In another study, Hammerfald et al. (2006) have shown that cognitive appraisal in general had a significant effect on cortisol response, which is a physiological indication of perceived stress. The indication was that the effect was largely mediated through *Primary Appraisal*, but not *Secondary Appraisal*. Similarly, another empirical research has shown that anticipatory cognitive appraisal is related to acute psychosocial stress, which was more the case for *Primary Appraisal* than *Secondary Appraisal* as well (Wirtz et al., 2006). Many other authors have agreed on the major role that cognitive appraisal plays in how people respond to a stressful situation such as Lee-Baggle et al. (2005) and Franks & Roesch (2006). Whereas there is multiple empirical research showing the effects of cognitive appraisal (especially *Primary Appraisal*) on the subjective stress response, only a few studies have shown the influence of *Secondary Appraisal*. Most studies theorize an influencing effect of *Secondary Appraisal* on the stress response but fail to show significant results, at least when *Secondary Appraisal* has been directly measured. Nonetheless, I am convinced that *Secondary Appraisal* can influence the subjective stress response postulated by Lazarus and Folkman (1984).

Self-esteem

As mentioned above Lazarus (1991) has highlighted that the variation of an individual's personal agenda (which includes their values, goals, and beliefs) is one of the reasons why there is a great variation in the appraisal of people in the same environmental context. In the present work I look specifically at the value one has for oneself. In the literature we find different terms describing how somebody can view themselves. In the field of psychology, self-views are typically analyzed in terms of two components: an evaluative component, which pertains to an individual's appraisal of themselves, and a knowledge component, which refers to a person's understanding or awareness of their own characteristics and attributes. Regarding those two

components, self-concept clarity is the widely used term for the knowledge component and *Self-esteem* reflects the evaluative component (Nezlek & Plesko, 2003). Campbell et al. (1996) described self-concept clarity in this regard, as the extent to which an individual's self-beliefs are clearly and confident defined, internally consistent, and temporally stable. In the present paper however, my focus stays on the evaluative component and therefore on the individual's appraisal of themselves.

Self-esteem, according to Tafarodi and Swann (1995), is defined as the person's perception of their own value or worth. This definition is in its core similar to most of the other authors who tried to define *Self-esteem*. Lee-Flynn et al. (2011), for example, described *Self-esteem* as the aspect that captures how positively one regards oneself. On the other side, prior to both, Rosenberg (1965) already defined *Self-esteem* as a person's positive or negative attitude towards oneself. It is important to note that *Self-esteem* by Rosenberg (1965) is presented as a two-dimensional influencing factor, hinting at the possibility that the lack of *Self-esteem* can be a potential risk factor as well. Including these definitions, *Self-esteem* can therefore be positioned within *the transactional theory of stress and coping* (Lazarus & Folkman, 1984) as a personal resource that influences both *Primary Appraisal* – the evaluation of a situation's potential harm or challenge – and *Secondary Appraisal* – the assessment of one's coping capacities. Because these appraisal processes determine whether and how stress is experienced, *Self-esteem* is expected to moderate the individual's stress response. Individuals with high *Self-esteem* tend to perceive stressors as challenges and to appraise themselves as capable of coping effectively, whereas those with low *Self-esteem* are more likely to interpret events as threats that exceed their resources (Major et al., 1998). In this way, *Self-esteem* provides a psychological framework through which experiences acquire meaning and emotional tone.

Empirical research consistently supports the centrality of *Self-esteem* for psychological adjustment, affect regulation, and health. A broad body of evidence links low *Self-esteem* to greater negative affect when confronted with threatening and uncontrollable stressors, whereas high *Self-esteem* predicts positive affect, persistence, and well-being (Lee-Flynn et al., 2011). Greenberg et al. (1992) provided experimental confirmation of the anxiety-buffering hypothesis: participants whose *Self-esteem* had been experimentally elevated reported less anxiety and exhibited lower physiological arousal when facing mortality reminders or physical threat. Such findings underline the function of *Self-esteem* as a psychological defense mechanism that sustains emotional stability in stressful situations. Longitudinal and daily-process studies have refined understanding of how *Self-esteem* operates

as a dynamic resource. Montpetit and Tiberio (2016) showed that both trait-like and daily fluctuations in *Self-esteem* predict perceptions of stress: individuals with higher and more stable *Self-esteem* appraised daily experiences as less threatening and reported lower perceived stress. Their results suggest that *Self-esteem* contributes to resilience, defined as adaptive functioning and recovery following adversity (Masten & Powell, 2003). Similarly, Juth et al. (2008) found that, in patients with chronic illness, higher *Self-esteem* predicted less negative affect, lower stress severity, and fewer physical symptoms in daily life. This data demonstrates that *Self-esteem* operates not only as a global trait but also as a day-to-day regulator of stress appraisal and emotional response. Additionally, Rutter (1987) proposed that *Self-esteem* may serve as a personal factor that contributes to an individual's resilience and ability to cope with difficult life circumstances.

A substantial body of empirical evidence supports the proposition that *Self-esteem* moderates the relationship between stress and well-being. Early laboratory research by Rector and Roger (1997) directly examined the stress-buffering effect of *Self-esteem*. Participants exposed to high-esteem manipulations exhibited lower subjective stress, better cognitive performance, and attenuated physiological reactivity (specifically, reduced heart-rate arousal) during stress-inducing tasks. These findings indicate that *Self-esteem* influences the *Primary Appraisal* of threat as well as downstream physiological responses. Participants with low *Self-esteem* showed greater autonomic activation and perceived the situation as more threatening, consistent with the view that *Self-esteem* shapes appraisal processes. Subsequent field- and clinical studies have replicated this buffering effect. Juth et al. (2008) reported that individuals with low *Self-esteem* experienced more frequent stress episodes and higher symptom severity across daily life. Conversely, high *Self-esteem* was associated with less perceived stress and greater positive affect, even under chronic health-related strain. Lee-Flynn et al. (2011) extended these findings in a 2-year longitudinal study: high *Self-esteem* ameliorated the effects of negative cognitive appraisals on daily affect, demonstrating that *Self-esteem* operates as a moderator in the short-term stress process and as a predictor of long-term adaptation.

Experimental stress paradigms provide further corroboration. In studies that used the *Trier Social Stress Test (TSST)*, a standardized task involving a psychosocial stressor, public speaking and an arithmetic task (Kirschbaum et al., 1993; von Dawans et al., 2012), participants with greater *Self-esteem* typically exhibit lower cortisol reactivity and recover more rapidly after stress exposure (Wirtz et al., 2006). Cognitive-behavioral stress-management interventions also reduce cortisol responses to acute stress (Hammerfald et al., 2006). These

findings bridge subjective appraisal with biological markers, demonstrating that the influence of *Self-esteem* extends to physiological systems implicated in stress regulation. Overall, empirical research converges on the conclusion that *Self-esteem* moderates the perception and physiological impact of stress. Individuals with high *Self-esteem* appraise stressful events as less threatening, experience lower stress intensity, and show more adaptive recovery patterns than those with low *Self-esteem*. Thus, *Self-esteem* functions as both a psychological and physiological buffer in the stress process.

Finally, a great number of empirical studies support the connection between *Self-esteem* and cognitive appraisal. As presented above Lazarus (1991) defined appraisal as the cognitive evaluation of person–environment transactions, integrating two sets of forces: (a) the individual’s personal agenda (values, goals, and beliefs) and (b) environmental demands and resources. Because *Self-esteem* reflects one’s perceived personal value and efficacy, it directly informs both *Primary* and *Secondary Appraisals*. A contextual model of stress and coping proposed by DeLongis and Holtzman (2005) identifies three key contextual factors that shape the appraisal and outcome of stress: the nature of the event, the social context in which stress occurs, and stable aspects of the self. Within this framework, *Self-esteem* represents a stable self-aspect that colors the appraisal process. People with high *Self-esteem* are predisposed to interpret potentially threatening events as challenges, while those with low *Self-esteem* perceive them as overwhelming.

Empirical work using daily-process methodology confirms this pattern: stable self-views provide a context within which both *Primary* and *Secondary Appraisals* influence daily affect (DeLongis & Holtzman, 2005; Lee-Flynn et al., 2011). Lee-Flynn et al. (2011) directly tested this mechanism in a sample of adults who recorded daily stressors and appraisals over seven days. Using multilevel modeling, they found that high *Self-esteem* attenuated the association between negative cognitive appraisal and negative affect, indicating that one pathway through which *Self-esteem* exerts beneficial effects is via cognitive appraisal. Individuals with high *Self-esteem* were less affected by negative appraisals, suggesting greater emotional resilience. Major et al. (1998) reached similar conclusions in a longitudinal study of women coping with abortion: *Self-esteem* and perceived control influenced pre-event appraisals of stressfulness and coping efficacy, which in turn determined post-event adjustment. Their model demonstrated that personality variables such as *Self-esteem* affect well-being indirectly through appraisal and coping processes. Rector and Roger (1997) further showed experimentally that *Self-esteem* influences *Primary Appraisal* (the perception of threat) by

altering autonomic and subjective stress responses. Participants with high *Self-esteem* reported less threat perception and lower physiological arousal when faced with evaluative challenges. These findings align with Tong's (2010) observation that, although stable traits are known to influence coping, the interplay between personality, affect, and appraisal remains underexplored. Together, these studies converge on the conclusion that *Self-esteem* functions as a cognitive lens that shapes both primary threat evaluation and secondary coping appraisal.

Across theoretical and empirical domains, *Self-esteem* emerges as a fundamental personal resource that shapes how individuals perceive, appraise, and respond to stress. Conceptually, it represents the evaluative core of the self-system, providing a sense of personal value and efficacy that informs both the perception of threat and the confidence to cope. Empirically, high *Self-esteem* consistently predicts reduced negative affect, lower perceived stress, and attenuated physiological reactivity under challenge. These effects operate largely through cognitive appraisal mechanisms that determine whether situations are viewed as threatening or manageable. Within Lazarus and Folkman's (1984) transactional model, *Self-esteem* can therefore be understood as a stable personal factor influencing the appraisal process, which in turn affects stress responses. The contextual perspective of DeLongis and Holtzman (2005) situates *Self-esteem* among the stable personal factors that interact with situational and social contexts to determine stress experiences. Finally, empirical work by Lee-Flynn et al. (2011), Major et al. (1998), and Rector and Roger (1997) provide converging evidence that *Self-esteem* exerts its beneficial effects primarily via cognitive appraisal pathways. Building on this conceptualization, the following section outlines the specific research gaps addressed by this thesis, focusing on the lack of direct tests of appraisal mechanisms, especially under controlled acute stress, which necessitates the specific hypotheses detailed below.

RESEARCH QUESTIONS AND HYPOTHESES

The preceding introduction outlined *the transactional theory of stress and coping* (Lazarus & Folkman, 1984) as the conceptual foundation of this thesis. According to this model, stress is not inherent in an external stimulus but arises from an ongoing transaction between person and environment, mediated by cognitive appraisal. When individuals encounter potential stressors, they appraise their significance (*Primary Appraisal*) and then evaluate the resources available to cope (*Secondary Appraisal*). These appraisals jointly determine the extent of subjective stress and guide the coping process.

As mentioned earlier, individual differences play a decisive role in this appraisal–coping sequence. Among these, *Self-esteem* has repeatedly been identified as a stable personal resource influencing how people perceive and respond to stressors (Taylor & Stanton, 2007; DeLongis & Holtzman, 2005). People with high *Self-esteem* typically evaluate demanding situations as less threatening and more manageable, whereas those with low *Self-esteem* tend to interpret identical situations as more harmful and less controllable (Major et al., 1998). Through this evaluative pathway, *Self-esteem* is expected to buffer the experience of stress and thereby protect psychological well-being.

Research across several decades corroborates this conceptual link between *Self-esteem*, appraisal, and stress. Early laboratory studies demonstrated that *Self-esteem* moderates physiological and affective reactivity to stressors: participants with higher *Self-esteem* exhibited lower subjective stress and smaller cardiovascular or cortisol responses than their *low Self-esteem* counterparts (Rector & Roger, 1997; Greenberg et al., 1992). In diary research, *Self-esteem* has predicted fewer daily negative appraisals and reduced affective distress (Lee-Flynn et al., 2011; Juth et al., 2008). At the same time, coping studies highlight the contextual nature of this relationship. DeLongis and Holtzman (2005) emphasized that coping unfolds within specific social and situational contexts and that personality factors interact with these contexts to shape coping effectiveness. Their “coping-in-context” approach therefore supports investigating stable person variables (such as *Self-esteem*) together with momentary appraisal processes.

Research Gaps, Limitations and Relevance

Despite consistent evidence for a buffering function of *Self-esteem*, several gaps remain. First, mechanistic clarity is limited: while *Self-esteem* has been shown to relate to lower stress, the mediating role of cognitive appraisal has rarely been tested directly. Second, experimental replications using acute-stress paradigms (Kirschbaum et al., 1993; Wirtz et al., 2006) are scarce. Much of the available research has examined chronically stressed or clinical populations rather than healthy participants. Third, prior findings diverge regarding which appraisal component -primary or secondary- accounts most for the stress-buffering effect. Studies of anticipatory appraisal often point to *Primary Appraisal (threat and challenge)* as the critical link (Wirtz et al., 2006), whereas trait models of the self suggest that *Secondary Appraisal (Self-concept of own abilities and belief of control)* should mediate the relation between *Self-esteem* and stress. Replicating and extending these results under controlled acute-stress conditions will therefore strengthen the empirical base and refine theoretical predictions.

Building on the reviewed evidence, this thesis addresses a core gap in the stress-and-coping literature: the lack of direct tests of how *Self-esteem* influences subjective stress through the two cognitive appraisal processes within an laboratory setting. Existing work provides indirect indications but seldom integrates all three constructs (*Self-esteem*, *Primary* and *Secondary Appraisal*, and subjective stress) within a single mediational framework. Many authors in the past already pointed out that it remains widely unclear how the mechanisms through which the components of the self influence the stress process work (Baumeister, Cambell, Krueger, & Vohs, 2003; Kernis, 2005; Swann, Chang-Schneider, & Larsen-McClarty, 2007). Furthermore, most studies employ retrospective or correlational designs, leaving open causal pathways. Following recent methodological advances in mediation analysis (Baron & Kenny, 1986; Preacher & Hayes, 2008), the present study will employ a mediation model to examine whether *Primary* and *Secondary Appraisals* jointly transmit the effect of *Self-esteem* on perceived stress.

Investigating these processes in a standardized social-evaluative stress task like the *Trier Social Stress Test* (Kirschbaum et al., 1993) allows precise control of situational demands and enables comparison by combining personality assessment through the *Rosenberg Self-Esteem Scale* (Rosenberg, 1965), momentary cognitive appraisals using the help of the *PASA* (Gaab, 2009), and self-reported stress intensity via the *VAS* (von Dawans et al., 2012).

The overarching aim is to clarify the mechanisms linking *Self-esteem* and subjective stress in response to an acute psychosocial stressor. Specifically, it seeks to replicate prior evidence that individuals with higher *Self-esteem* report lower subjective stress, to examine whether *Self-esteem* predicts more favorable *Primary Appraisal* (characterized by lower perceptions of *threat* and *challenge*) and stronger *Secondary Appraisal* (reflecting greater perceived coping resources) and to test a multiple-mediation model in which *Primary* and *Secondary Appraisal* transmit the effect of *Self-esteem* on subjective stress. Through this design, the thesis aims to integrate personality research with stress-appraisal theory and to evaluate whether the protective role of *Self-esteem* operates primarily through cognitive appraisal processes.

Hypotheses

Drawing on *the transactional model of stress and coping*, the cited empirical literature, and limitation and gaps, the following research questions and hypotheses are proposed to address the remaining open questions:

The first research question (Q1) is: Does *Primary Appraisal* mediate the effect of *Self-esteem* on stress? In order to answer this research question, the following hypotheses are postulated:

H1.1: Participants with higher levels of *Self-esteem* are expected to report lower levels of subjective stress. In this hypothesis, *Self-esteem* serves as the *independent variable*, whereas subjective stress represents the *dependent variable*.

H1.2: Participants scoring higher on *Self-esteem* will appraise the situation as less threatening and less challenging (*Primary Appraisal*). In this hypothesis, *Self-esteem* serves as the *independent variable*, whereas *Primary Appraisal* represents the *dependent variable*.

H1.3: The effect of *Self-esteem* on subjective stress is mediated by *Primary Appraisal*. In this hypothesis, the *independent variable* is *Self-esteem*, the *dependent variable* is subjective stress, and the *mediator* is *Primary Appraisal*.

The second research question (Q2) is: Does *Secondary Appraisal* mediate the effect of *Self-esteem* on stress? To answer this question, the following hypotheses are postulated:

H2.1 (H1.1): Participants with higher levels of *Self-esteem* are expected to report lower levels of subjective stress. In this hypothesis, *Self-esteem* serves as the *independent variable*, whereas subjective stress represents the *dependent variable*.

H2.2: Participants scoring higher on *Self-esteem* will appraise their coping resources as more adequate (*Secondary Appraisal*). In this hypothesis, *Self-esteem* serves as the *independent variable*, whereas *Secondary Appraisal* represents the *dependent variable*.

H2.3: The effect of *Self-esteem* on subjective stress is mediated by *Secondary Appraisal*. In this hypothesis, the *independent variable* is *Self-esteem*, the *dependent variable* is subjective stress, and the *mediator* is *Secondary Appraisal*.

Expected contribution and structure of the thesis

By combining personality assessment with real-time stress appraisal in an experimental setting, this thesis aims to bridge two domains that have often developed separately: individual differences and situational stress processes. Demonstrating that *Self-esteem* exerts its influence through distinct appraisal pathways would deepen understanding of stress resilience mechanisms (Montpetit & Tiberio, 2016) and inform preventive interventions that target self-evaluative and cognitive components of coping.

The remaining chapters of this thesis are structured as follows. The Method chapter outlines the research design, participant characteristics, measurement instruments, and analytical strategies employed to test the proposed hypotheses. The Results chapter presents the descriptive and inferential statistical analyses conducted to examine each hypothesized relationship. Finally, the Discussion chapter interprets the findings within the broader context of stress and coping research, highlights theoretical and practical implications, and addresses the study's limitations while offering suggestions for future research.

METHOD

Study Design

Participants were recruited through flyers posted on social media and displayed at Organizations and Facilities (for example at hotspots around the university of Vienna). The study consisted of telephone interviews (for screening purposes), questionnaires, and a stress induction test via the *Trier Social Stress Test (TSST)*. Participants who completed all stages of the study received a remuneration of 45 euros, directly transferred to their bank account. The study was conducted at the department of clinical psychology in Vienna, and therefore, the language of the procedure, as well as all questionnaires, was German. The study design, as well as all parameters regarding this thesis were gathered throughout a project at the music and health lab in Vienna with the name „How music gets under our skin: Effects of music on stress and skin barrier recovery” under the lead of Univ.-Prof. Dr. Urs Nater. A project that tries to find out whether listening to music can enhance bodily health.

Participants

In this study, only female participants in the same phase of their menstrual cycle were assessed to ensure comparability of stress induction and to control the influence of hormones and cortisol levels in this process. Furthermore, strict limitations were needed to secure a pool of healthy individuals as below detailed. During the screening process, individuals who expressed interest in the study were selected and those who met the requirements and verified their consent to volunteer in the study were given appointments at concurrent moments of their menstrual cycle.

The participant sample was restricted to female individuals aged between 18 and 35 years who reported regular menstrual cycles and fluency in the German language. Exclusion criteria included smoking, pregnancy or breastfeeding, being underweight or overweight, usage of hormonal contraceptives, presence of physical or mental health conditions, professional or academic involvement in music, absolute pitch, and significant auditory or visual impairments. Additionally, individuals with regular consumption of drugs, alcohol, or medication, as well as those with prior knowledge of the *TSST*, were excluded. All participants were tested during the follicular phase of their menstrual cycle.

A total of 38 German-speaking females with an average age of 24.87 years participated in the study. The majority of participants were of Austrian nationality (57.9%), with German (15.8%) and Croatian (5.3%) being the next largest groups. 20.8% of the participants had a different nationality. The educational level of the sample primarily consisted of university-educated individuals (76.3%), with 13.2% having no professional education. Furthermore 5.3% reported having an apprenticeship, 2.6% studied at an engineering school and 2.6% reported having a different professional education. A total of 57.9% of the participants were employed, while 42.1% reported having no professional activity at the moment. In addition, 47.3% of the participants reported being in a relationship, while 52.6% were single.

During data collection, two participants did not complete the *Primary Appraisal Secondary Appraisal questionnaire (PASA)*, which was necessary for analyzing the *Primary and Secondary Appraisal Scales*, and one participant did not complete the visual analog scale (*VAS*), which measured the stress response on the third occasion.

Procedure

Individuals first needed to pass the screening process, in which interested females responded to the flyers by contacting the clinical department of psychology via e-mail. A standardized response was provided, informing potential participants that they would be called to further assess their eligibility if they fulfilled the necessary preliminary requirements. To schedule a phone call, those individuals had to provide the timeslots in which they are available.

The telephone interview lasted approximately 20 minutes per individual and followed a scripted, standardized protocol. The interview questions focused on the individual's personal information, health status, and medical history to precisely assess their adherence to the study requirements and limitations. Furthermore, participants were informed that their input would be managed confidentially and that they were allowed to not answer certain questions or to completely terminate the interview at any point.

The project leader's contact details were provided in case recruits had further questions regarding their legal rights or general inquiries. Additionally, participants confirmed that they understood the instructions and gave their consent to volunteer in the study. Candidates who met the necessary requirements and conditions were given appointment timeslots for

conducting the study, which were calculated based on their previous menstruation dates (average cycle length, average menstruation length, and date of the last menstruation start) to ensure the study took place during the recruit's follicular menstruation phase. Once the appointment was agreed upon, participants were invited to the study via e-mail, which included the date and time, the location, notes regarding the current *COVID-19* regulations (*PCR test* no older than 48 hours and/or vaccination), a checklist, and a web link to an online questionnaire. Among other things, this questionnaire included the *Rosenberg self-esteem questionnaire*.

Participants arrived at the department of clinical psychology around 12:50 p.m. on the date of their appointment and were greeted by the experimental manager. To control for potential influencing factors, the experimental manager was always female, and all instructions were scripted, following a strict protocol. After an acclimatization phase of approximately 10 minutes, the baseline phase of the study commenced.

Firstly, participants had to complete a standardized *COVID-19* protocol, where the experimental manager took their temperature (twice, with 30 minutes in between), verified the *COVID-19* test and/or vaccination, and confirmed that they were indeed in their follicular phase of the menstrual cycle. Additionally, participants completed the declaration of consent to the study. Secondly, the subjects filled out the initial questionnaires to assess their baseline level of the psychological characteristics assessed in the study. Among others the *Visual Analog Scale (VAS1)* was included within those questionnaires to estimate the baseline stress level.

Following the baseline phase, participants were guided to another room, where the *Trier Social Stress Test (TSST)* was conducted. Subjects were given a standardized instruction for the *TSST*, followed by a 3-minutes preparation time in which participants can make notes on a piece of paper. Those notes, however, had to be left behind for the *TSST* itself. Once the 3-minute preparation time expired, but before the *TSST* performance commenced, participants completed another set of questionnaires, including the second assessment of the *Visual Analog Scale (VAS2)* and the *Primary Appraisal Secondary Appraisal Scale (PASA)*. After completing the surveys, the *TSST* was performed. Participants were then asked to fill out a third set of questionnaires, which included the third assessment of the *Visual Analog Scale (VAS3)*, before the experimental manager escorted them back to the starting room.

Finally, subjects received a debriefing about the assessments and the study itself, with the opportunity to provide their contact information to receive the study results. Additionally,

they submitted their bank information to receive their remuneration of 45 euros and were dismissed from the clinical department of psychology.

Measures

Within this study, all variables were calculated by analyzing standardized questionnaires completed by the participants. On three separate occasions during the assessment, and once at home before the appointment, subjects completed either printed questionnaires with a pen or digitally on their computer. The results were subsequently transferred to an Excel sheet for further analysis.

Subjective Stress

The construct of subjective perceived stress was captured by using a *Visual Analog Scale* (von Dawans et al., 2012) on three separate occasions during the study. These assessments occurred at the beginning to establish the participants' baseline level, as well as before and after the stress induction via the *Social Trier Stress Test (TSST)* (Kirschbaum et al., 1993). It is important to note that the subjects were aware of the *TSST* instructions before completing the second survey.

The *TSST*, originally proposed by Kirschbaum et al. (1993), is a standardized method for inducing an acute stress response in individuals within a laboratory setting. This frequently used and well-validated procedure reliably elicits subjective stress responses across all age groups (Kudielka et al., 2004; Dickerson and Kemeny, 2004). The *TSST* consists of an anticipation period, a mock job interview, and an arithmetic task.

The procedure begins with the experimental manager guiding the participants into a room where two committee members are seated behind a desk. These are designated as the active stressor (male) and the passive stressor (female). Their gender served as a control variable within the study. The subject received a standardized introduction from the experimental manager and is given 3 minutes to prepare for the interview. The instructions specify that participants should imagine they are in a job interview for a position they genuinely desire and must convince the committee members of their suitability. Additionally, they are informed that they are being video- and voice recorded, and that the committee members are trained in non-verbal behavioral analysis. It is important to note that no video or voice

recordings were made, and the committee members were not trained in non-verbal behavioral analysis. Furthermore, subjects are informed that there will be an arithmetic task, although the exact details are not provided. Once the preparation time is over, the experimental manager leaves the room, and the active stressor takes over.

The passive stressor switches on (and immediately off) the camera, and the active stressor instructs the participant to begin their presentation. The mock job interview lasts exactly 5 minutes and is timed with a stopwatch. According to the standardized protocol of the *TSST*, the active and passive stressors maintain a neutral facial expression throughout the task, without nodding, smiling, or any other interaction with the participant. Furthermore, the introductions from the active stressor, as well as responses to questions or pauses from the subject, are scripted. The passive stressor remains silent throughout the task. If the subject stops the presentation or asks questions, the active stressor is instructed to wait at least 20 seconds before giving a standardized response. Some of the possible responses include “You still have time, please continue with your characteristics and your presentation” and “Can you tell us something about your negative characteristics?”. After 5 minutes the active stressor ends the interview and proceeds to the arithmetic task.

A scripted introduction to the arithmetic task is presented by the active stressor. The subject is instructed to count backwards from the number 2043 in steps of seventeen. As soon as an error occurs, the active stressor tells the participant to start over again with the words: “Error, please start again from the beginning”. Additionally, the active stressor is instructed to further induce stress by repeatedly saying sentences like: “Please speak louder in the microphone”, “Please look in the camera”, or “Please try to calculate faster”. Once the 5 minutes have elapsed, the active stressor stops the task. The experimental manager then escorts the participant out of the room.

On the three occasions where the *Visual Analog Scale* was conducted (at the beginning, before the *TSST* and after) one item of the *VAS* was administered to assess the subjective stress. Participants had to rate the item “How stressed do you feel?” by drawing a line on the printed survey. The line was exactly ten centimeters long and represented a rating of 0 (not at all) to 100 (very much). The line on the questionnaire was later measured via ruler to capture the exact rating of the participant.

Originally, the plan was to calculate the difference between the baseline score (*VAS1*) and the score after the *TSST* (*VAS3*) to estimate the participants’ subjective stress induction.

The initial theory posited that the peak level of stress induction would occur at the point of measurement after the *TSST*. However, a preliminary analysis of the data revealed an error in this assumption, as the measurement after the *TSST* was not the peak score in the process. The reason for this phenomenon to arise could be due to a form of relaxation immediately after the subjects realized that the stress task was over. Therefore, the peak stress induction likely occurred during the *TSST* itself. As there were no measurements with the visual analog scale during the mock interview or the arithmetic task, which might have also distorted the assessment, the true peak score remained intangible. To address this problem, the average score of *VAS2* (score right before the *TSST*) and *VAS3* were calculated and subtracted from the baseline score (*VAS1*), to ensure comparability within the sample and statistically account for the peak score within those timeframes.

Primary and Secondary Appraisal

To capture cognitive appraisal, and thus the *Primary* and *Secondary Appraisal* scores of the participants, the *Primary Appraisal Secondary Appraisal (PASA)* was used. The *PASA* is a psychometric assessment of situation-related cognitive evaluations in the context of the transactional theory of Lazarus and Folkman (1984). This theory posits two distinct appraisal aspects in stress reactions. In the initial assessment (*Primary Appraisal*), situational conditions are evaluated regarding their potential to be threatening or challenging. It is important to note that the evaluation of a situation concerning potential loss, as mentioned in transactional stress theory, is not assessed in the *PASA*, as it only operationalizes anticipatory evaluation processes.

In the second assessment (*Secondary Appraisal*), the extent of perceived coping opportunities is evaluated by reviewing one's own abilities and the belief in one's capacity to control a situation. Within the *PASA* the two evaluation processes are operationalized by two subscales. *Primary Appraisal* captures threat and challenge, whereas the subscale for *Secondary Appraisal* codes *Self-concept of one's own abilities* and the *Belief of control*. For the execution of the *PASA*, it is crucial to note that for a valid result, the situation must be precisely defined and explained to elicit emotional activation within the subjects.

The *PASA* was evaluated on a non-clinical sample of 81 healthy male subjects (Gaab et al., 2005). The factor analysis confirmed its validity, showing that the items loaded onto their corresponding scales. Furthermore, the internal consistency, and therefore the reliability,

demonstrated good homogeneity (*Cronbach's α : primary appraisal: 0,61-0,83; secondary appraisal: 0,74-0,80*).

The *PASA* is a self-assessment tool with 16 items that can be rated on a 6-point scale from totally wrong to totally right. Examples of items include: "I feel not threatened by this situation", "It is mainly up to me if the rating of the experts is positive", "This task is challenging for me", and "I know many solutions to solve this task". The calculation of the four primary scales (threat, challenge, self-concept of own abilities, and belief of control) is performed using an Excel sheet. All items are coded from 1 (totally wrong) to 6 (totally right), whereby the items 1, 6, 7, 9 and 10 are negatively formulated. Those items need to be re-coded, so 1 becomes 6, 2 becomes 5, 3 becomes 4, and so on. Once all items are correctly coded, the sum of the specific items forms the four primary scales (*threat*: items 1 + 5 + 9 + 13; *challenge*: items 2 + 6 + 10 + 14; *Self-concept of own abilities*: items 3 + 7 + 11 + 15; *Belief of control*: items 4 + 8 + 12 + 16). The secondary scales, *Primary Appraisal*, and *Secondary Appraisal* are calculated by the averaging of the two forming primary scales (*Primary Appraisal*: *threat* and *challenge*; *Secondary Appraisal*: *Self-concept of own abilities* and *Belief of control*).

Self-esteem

To obtain a score for the construct *Self-esteem*, the *Rosenberg Self-Esteem Scale (RSES)* was used. The scale is the standard measure of *Self-esteem* in psychological research and provides a straightforward, short, and convenient way to capture global *Self-esteem*. While initially intended to measure *Self-esteem* in young adults, it has since been used across a wide spectrum of age groups.

Regarding reliability, the *RSES* indicated strong internal consistency, demonstrating a scale coefficient of reproducibility of .92. Additionally, over a period of 2 weeks, the test-retest reliability showed a correlation of .85 and .88. In terms of the validity, the *RSES* correlates significantly with the *Coopersmith Self-Esteem Inventory* and other measures of *Self-esteem*. It also demonstrates predictive, concurrent, and construct validity, as well as correlations in the predicted direction with measures of anxiety and depression (Rosenberg, 1965).

The *Rosenberg Self-Esteem Scale* is a Guttman scale with 10 items that can be rated from "strongly agree" to "agree" to "disagree" to "strongly disagree". Examples of items include: "At times I think I am not good at all", "I am able to do things as well as most other

people”, “I wish I could have more respect for myself”, and “I take a positive attitude towards myself”. The items are coded from 1 “strongly disagree” to 4 “strongly agree”. The *RSES* consists of two groups within the 10 items, that are poled in opposite ways to each other. This means that high *Self-esteem* responses involve strongly agreeing or agreeing with items 1, 3, 4, 7, and 10 and strongly disagreeing or disagreeing with items 2, 5, 6, 8, and 9. Therefore items 2, 5, 6, 8, and 9 are re-coded such that a score 1 becomes 4, 2 becomes 3, 3 becomes 2 and 4 becomes 1. Once the items are correctly re-coded, the sum of all items represents the general *Self-esteem* score. Subjects with a maximum score of 40 are therefore describing themselves as individuals with high *Self-esteem*, whereas participants with the lowest score of a minimum of 10 are describing themselves as low *Self-esteem* individuals.

In contrast to the other questionnaires within this study, *the Rosenberg Self-Esteem Scale* was conducted before the appointment at the department of psychology, immediately after the participant confirmed all necessary requirements. In an invitation, the subject received, among others, a link to a set of questionnaires to be completed at home on their computer.

Analysis

To analyze our hypotheses and thus our research questions, a mediation analysis was used. We followed the protocol described by Baron and Kenny (1986) to assess whether the variables indeed formed a true mediation relationship. They point out that the function of a mediator represents the reproductive mechanism through which the independent variable can influence the dependent variable.

Statistically, the relationship between the dependent, independent, and mediator variables can be analyzed by following three consecutive steps of simple and multiple regression analyses. In the first step, the dependent variable is regressed on the independent variable to confirm that the independent variable is indeed a significant predictor of the dependent variable. After that, the mediator is regressed on the independent variable to verify that the independent variable significantly predicts the mediator. If the mediator is not influenced by the independent variable, it cannot mediate the effect. These two steps constitute the simple regression analysis part of the mediation analysis. In the last step, the dependent variable is regressed on both the independent variable and the mediator to demonstrate two conclusions: the mediator significantly predicts the dependent variable, and the strength of the

coefficient of the significant independent variable in step one is now greatly reduced. The decrease in the coefficient is explained by the influence the mediator has on the main effect, and therefore the main effect is reduced by controlling the mediator. Baron and Kenny (1986) distinguish between full and partial mediation. A reduction in the effect of the independent variable on the dependent variable from step one to step three is postulated to be a partial mediation, whereas a full mediation is indicated by the effect dropping to zero.

In my study, the mediation analysis described above was used to analyze both research questions and hypotheses (H1.1-H1.3 and H2.1-H2.3). The independent variable is therefore *Self-esteem*, the dependent variable is subjective perceived stress, and the mediator is either *Primary Appraisal* or *Secondary Appraisal*. To demonstrate a full or partial mediation, hypotheses H1.1 and H1.2, as well as H2.1 and H2.2, must first be significant to perform the final step of the mediation analysis.

RESULTS

All the data was analyzed using IBM SPSS statistics software version 30.

Descriptive Analyses

Table 1 presents the descriptive analysis of the age and psychological characteristics of the 38 participants. The ages of the participants range from 18 to 33 years old with an average age of 24.87 ($SD = 3.62$).

Regarding cognitive appraisal, scores on the *PASA* subscales showed moderate variability with 36 valid data sets. Out of the possible range within the *PASA* from 1 to 6, the mean score for *PASA_threat* was 3.22 ($SD = 1.11$), suggesting a relatively low perception of threat among participants. *PASA_challenge* had a higher mean of 4.28 ($SD = 0.99$), indicating that participants were more likely to appraise stressors as challenges rather than threats. The *PASA_Primary Appraisal* subscale yielded a mean of 3.75 ($SD = 0.89$), reflecting a moderate appraisal of the situational relevance and significance. *PASA_self-concept of own abilities* had a mean of 4.17 ($SD = 1.03$), indicating a generally positive evaluation of one's own capabilities in dealing with stressors. *PASA_belief of control* showed the highest mean among the subscales at 4.39 ($SD = 0.83$), suggesting a strong perceived sense of control. Finally, *PASA_Secondary Appraisal* had a mean of 4.28 ($SD = 0.71$), reflecting participants' relatively high assessment of available coping resources.

Table 1. Descriptive Analysis of Age and Psychological Characteristics of the 38 participants.

	Descriptive Statistics						
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Error	Std. Deviation Statistic	Variance Statistic
Age	38	18	33	24,868	,587	3,618	13,090
VAS_Subjektive Stress Response	37	-28,50	90,00	36,811	4,203	25,569	653,755
RSES_Self Esteem	38	16	40	33,184	,929	5,727	32,803
PASA_threat	36	1,00	5,00	3,215	,185	1,110	1,233
PASA_challenge	36	1,75	5,75	4,278	,164	,985	,971
PASA_Primary Appraisal	36	1,75	5,00	3,747	,148	,888	,789
PASA_self-concept of own abilities	36	2,25	6,00	4,167	,171	1,028	1,057
PASA_belief of control	36	1,75	6,00	4,389	,138	,829	,687
PASA_Secondary Appraisal	36	2,75	5,75	4,278	,118	,707	,499
Valid N (listwise)	35						

The mean score for the *Visual Analog Scale (VAS)* assessing subjective stress response was 36.81 ($SD = 25.57$) with 37 full data sets, indicating a wide range of stress responses among participants (range = -28.50 to 90.00). *Self-esteem*, measured by the *Rosenberg Self-Esteem Scale (RSES)*, had a mean of 33.18 ($SD = 5.73$) taking all 38 participants into account, suggesting moderately high levels of *Self-esteem* within the sample.

Figure 1 presents the subjective stress ratings of participants assessed using the *Visual Analogue Scale (VAS)* at two points: before (*VAS2*) and after (*VAS3*) exposure to the *Trier Social Stress Test (TSST)*. *VAS2* scores are displayed in light blue and *VAS3* scores in dark red, with values ranging from 0 to 100, representing perceived stress intensity. The data shows that in 21 out of 38 cases (55.3%), participants reported higher stress levels following the *TSST (VAS3)*, suggesting that the procedure was effective in increasing acute subjective stress only in slightly over half of the cases. In 16 cases (42.1%), stress levels were higher before the *TSST (VAS2)*, and in 1 case (2.6%), the scores remained the same across both time points. It is important to note that one of the 16 times *VAS2* was higher than *VAS3* is due to a missing score on *VAS3*. As mentioned above, this notable proportion of participants who reported higher or unchanged stress levels before the *TSST* may reflect anticipatory anxiety. On the other hand, a relaxation effect right after the subjects realized that the stress task was over could have influenced the participants' rating of their subjective stress level after the *TSST*.

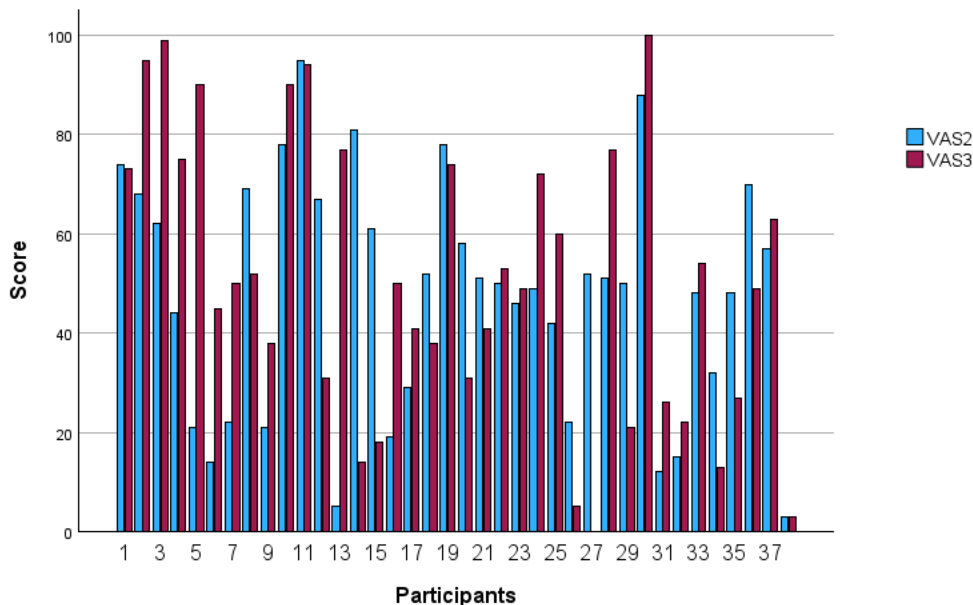


Figure 1. Comparison of participants' scores before (VAS2) and after (VAS3) the TSST.

Inferential statistical Analysis

Table 2 and Figure 2 present the results of a simple linear regression analysis examining the relationship between *Self-esteem* (as measured by the *Rosenberg Self-Esteem Scale, RSES*) and subjective stress responses (measured via the *Visual Analogue Scale, VAS*), analyzing the main hypotheses H1.1 and H2.1. The analysis revealed a negative association between *Self-esteem* and subjective stress, with a standardized regression coefficient $\beta = -.286$, indicating that higher *Self-esteem* tends to predict lower levels of subjective stress. However, this relationship did not reach conventional levels of statistical significance ($p = .086$), although it approached significance and may suggest a trend. The model accounted for approximately 8.2% of the variance in subjective stress ($R^2 = .082$), and the overall model fit was modest, with $F(1.35) = 3.122, p = .086$. The unstandardized regression coefficient ($B = -1.263$) suggests that for each one-point increase in *Self-esteem*, the subjective stress score decreases by approximately 1.26 points.

Table 2. Linear regression analysis of subjective stress response on Self Esteem.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.286 ^a	.082	.056	24,84696

a. Predictors: (Constant), Self Esteem (RSES)

b. Dependent Variable: Subjective Stress Response (VAS)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1927,170	1	1927,170	3,122	.086 ^b
	Residual	21608,006	35	617,372		
	Total	23535,176	36			

a. Dependent Variable: Subjective Stress Response (VAS)

b. Predictors: (Constant), Self Esteem (RSES)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	78,785	24,106		3,268	.002	29,848	127,723
	Self Esteem (RSES)	-1,263	,715	-.286	-1,767	.086	-2,713	,188

a. Dependent Variable: Subjective Stress Response (VAS)

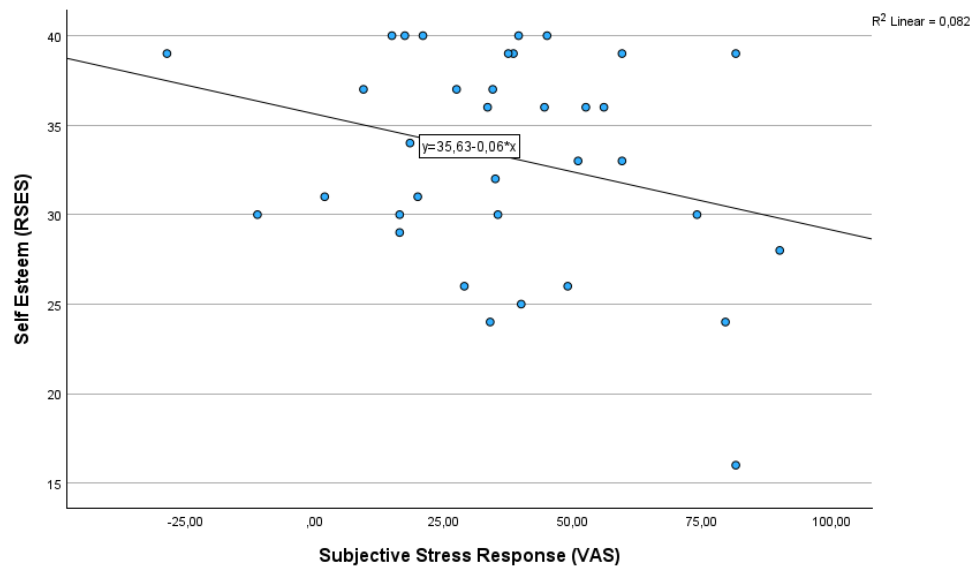


Figure 2. Scatter plot of linear regression analysis of subjective stress response on Self Esteem.

Figure 3 and Table 3 present the outcomes of a simple linear regression analysis exploring the association between *Primary Appraisal*, measured using the *PASA* (*Primary Appraisal Secondary Appraisal* scale), and the subjective stress response, evaluated through a *Visual Analogue Scale* (*VAS*).

The regression analysis revealed a statistically significant positive relationship between *Primary Appraisal* and subjective stress response, $F(1,33) = 18.756, p < .001, R^2 = .362$. This indicates that approximately 36.2% of the variance in subjective stress response can be explained by *Primary Appraisal*. The standardized beta coefficient ($\beta = .602$) further supports a moderate to strong effect size. The regression equation derived from the analysis suggests that higher levels of *Primary Appraisal* are associated with higher perceived stress levels.

This relationship is also visually depicted in Figure 3, where the scatter plot and regression line demonstrate a clear upward trend. The model's standard error of the estimate (21.207) reflects the average deviation of observed values from the regression line. Additionally, the predictor itself was highly significant ($p < .001$), confirming that *Primary Appraisal* is a meaningful predictor of subjective stress perception in this sample. These findings align with the *transactional theory of stress and coping*, emphasizing the critical role of *Primary Appraisal* in shaping stress responses.

Table 3. Linear regression analysis of subjective stress response on Primary Appraisal.

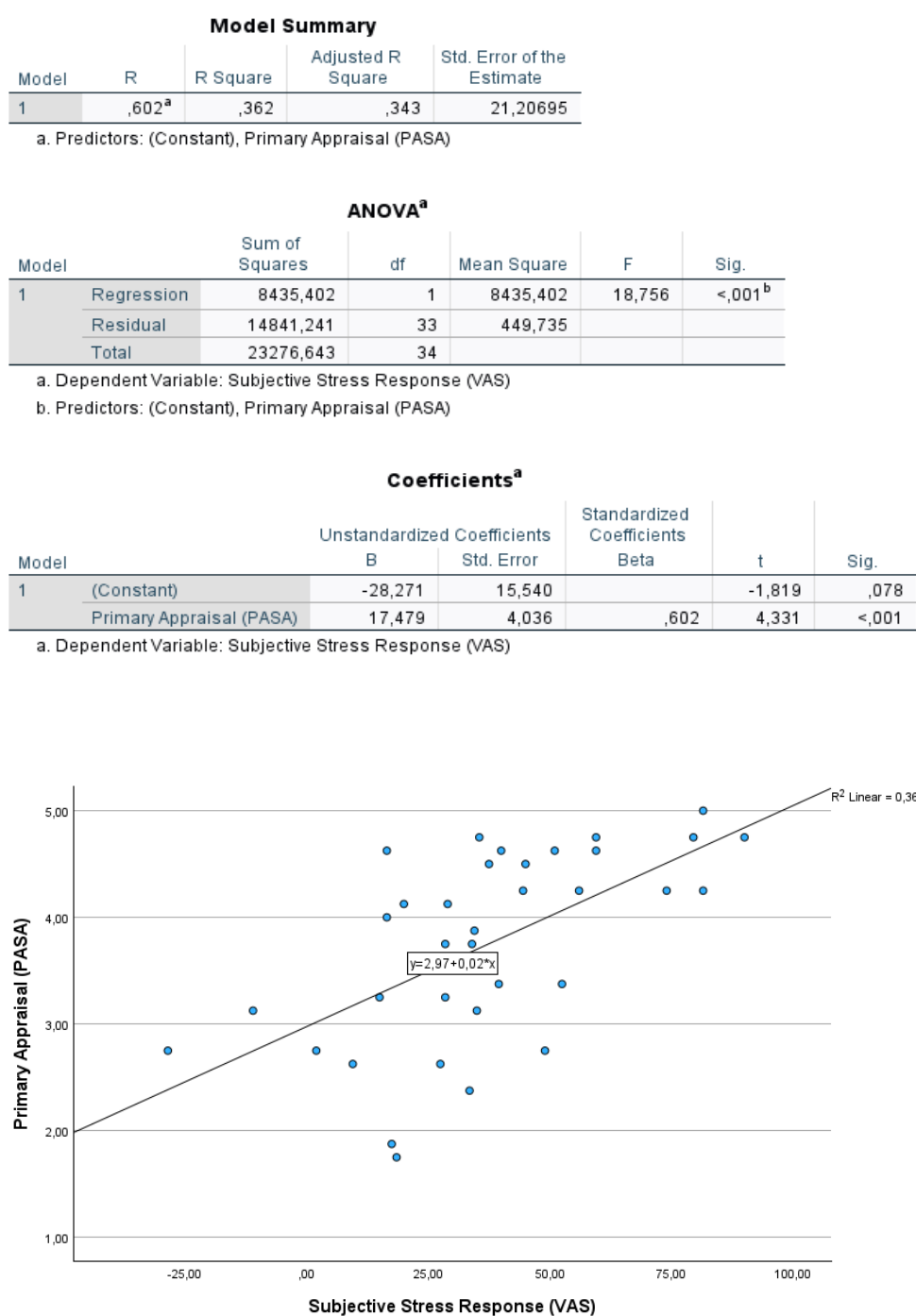


Figure 3. Scatter plot of linear regression analysis of subjective stress response on Primary Appraisal.

Additionally, Figure 4 and Table 4 display the results of a simple linear regression analysis conducted to examine the relationship between *Secondary Appraisal*, measured by the *PASA (Primary Appraisal Secondary Appraisal)* scale, and the subjective stress response, assessed through a *Visual Analogue Scale (VAS)*.

The analysis revealed that *Secondary Appraisal* was not a significant predictor of subjective stress response, $F(1.33) = 1.568, p = .219, R^2 = .045$. This indicates that only 4.5% of the variance in subjective stress response can be explained by differences in *Secondary Appraisal*. The standardized beta coefficient ($\beta = -.213$) suggests a weak and negative relationship, implying that higher levels of *Secondary Appraisal* are slightly associated with lower subjective stress levels; however, this effect did not reach statistical significance. The regression equation further reflects this non-significant negative trend. The constant term was statistically significant ($p = .014$), while the predictor variable was not ($p = .219$).

As visualized in Figure 4, the scatter plot and regression line indicate a flat and slightly downward trend, consistent with the minimal explanatory power of the model. Overall, these results suggest that, in contrast to *Primary Appraisal*, *Secondary Appraisal* does not play a significant role in predicting the intensity of subjective stress responses in this sample.

Table 4. Linear regression analysis of subjective stress response on *Secondary Appraisal*.

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.213 ^a	.045	.016	25,94923	
a. Predictors: (Constant), Secondary Appraisal (PASA)					

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1055,677	1	1055,677	1,568	.219 ^b
	Residual	22220,966	33	673,363		
	Total	23276,643	34			
a. Dependent Variable: Subjective Stress Response (VAS)						
b. Predictors: (Constant), Secondary Appraisal (PASA)						

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	71,038	27,367		2,596
	Secondary Appraisal (PASA)	-7,872	6,287	-.213	-1,252
a. Dependent Variable: Subjective Stress Response (VAS)					

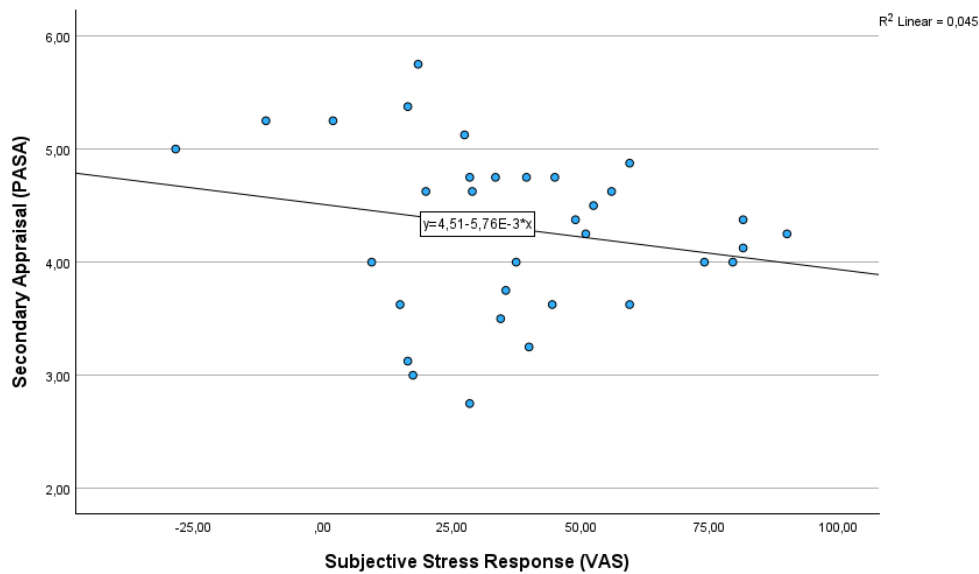


Figure 4. Scatter plot of linear regression analysis of subjective stress response on Secondary Appraisal.

Table 5 display the finding that *Self-esteem (RSES)* was significantly and negatively associated with *Primary Appraisal* on the *PASA*. A simple linear regression with *Primary Appraisal* as the outcome and *Self-esteem* as the predictor was significant, $F(1.34) = 4.90, p = .034, R^2 = .126$. Thus, individual differences in *Self-esteem* explained about 12.6% of the variance in *Primary Appraisal*. The standardized coefficient indicated a small-to-moderate effect, $\beta = -.36$, and the unstandardized slope showed that each one-point increase in *RSES* predicted a 0.055-point decrease in *Primary Appraisal*.

Consistent with this, the scatterplot of Figure 5 shows a clear downward trend (regression line $y = 41.33 - 2.27x$ when plotted with *RSES* on the y-axis), indicating that higher *Self-esteem* corresponded to appraising the upcoming stressor as less threatening and challenging. Although the effect size is modest and the dispersion around the line indicates substantial variability ($SEE = .84$), the pattern aligns with the hypothesis that *Self-esteem* relates to more favorable *Primary Appraisals* in the face of an acute psychosocial stressor.

Table 5. Linear regression analysis of Primary Appraisal on Self-Esteem.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,355 ^a	,126	,100	,84249

a. Predictors: (Constant), Self Esteem (RSES)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,476	1	3,476	4,897	,034 ^b
	Residual	24,133	34	,710		
	Total	27,609	35			

a. Dependent Variable: Primary Appraisal (PASA)

b. Predictors: (Constant), Self Esteem (RSES)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,568	,835		6,668	<,001
	Self Esteem (RSES)	-,055	,025	-,355	-2,213	,034

a. Dependent Variable: Primary Appraisal (PASA)

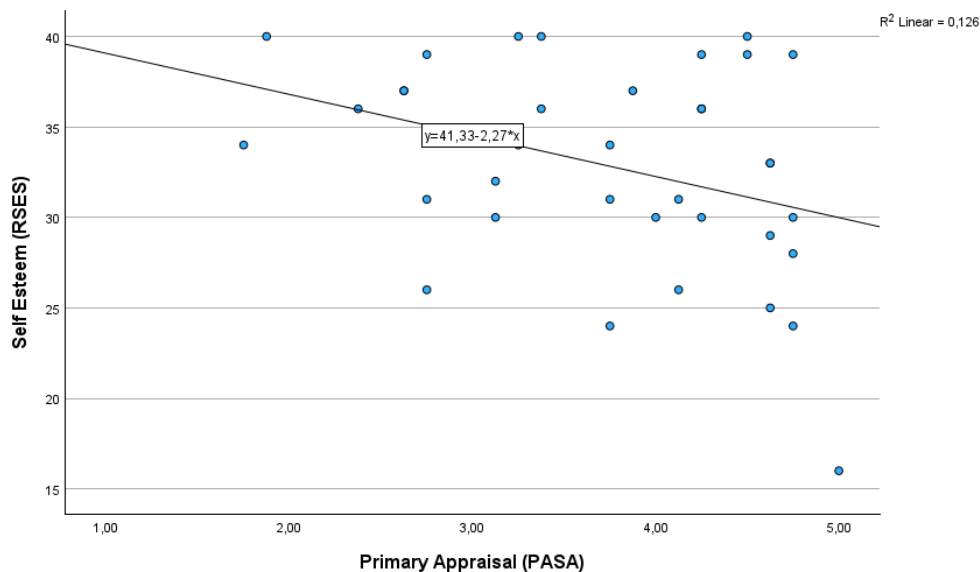


Figure 5. Scatter plot of linear regression analysis of Primary Appraisal on Self-Esteem.

Finally, in Figure 6 and Table 6, *Self-esteem (RSES)* was not meaningfully related to *Secondary Appraisal (PASA)*. A simple linear regression with *Secondary Appraisal* as the outcome and *Self-esteem* as the predictor was non-significant, $F(1.34) = 0.09, p = .764$, with a near-zero coefficient of determination ($R^2 = .003$). The unstandardized slope was $B = 0.006$, corresponding to a trivial standardized effect ($\beta = .052; p = .764$).

Consistent with the statistics, the scatterplot displays broad dispersion and only a shallow positive trend line ($SEE = 0.72$), indicating that individual differences in *Self-esteem* explained virtually none of the variance in perceived coping resources. Thus, unlike the significant link with *Primary Appraisal*, these data provide no evidence that higher *Self-esteem* is associated with stronger *Secondary Appraisal* in this sample.

Table 6. Linear regression analysis of Secondary Appraisal on Self-Esteem.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,052 ^a	,003	-,027	,71589

a. Predictors: (Constant), Self Esteem (RSES)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,047	1	,047	,092	,764 ^b
	Residual	17,425	34	,513		
	Total	17,472	35			

a. Dependent Variable: Secondary Appraisal (PASA)

b. Predictors: (Constant), Self Esteem (RSES)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4,066	,710		5,729	<,001
	Self Esteem (RSES)	,006	,021	,052	,303	,764

a. Dependent Variable: Secondary Appraisal (PASA)

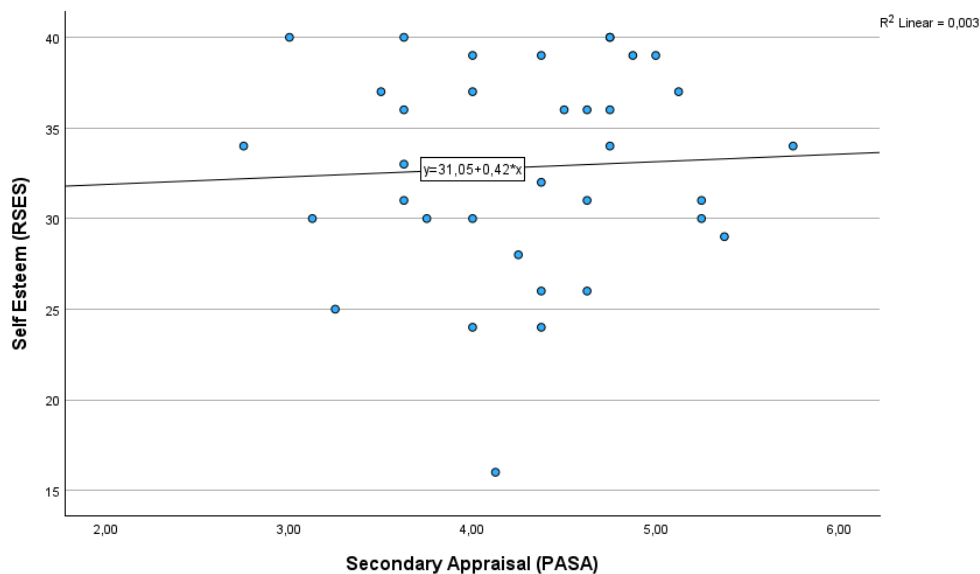


Figure 6. Scatter plot of linear regression analysis of Secondary Appraisal on Self-Esteem.

The inferential analysis revealed that the total effect of *Self-esteem* on subjective stress (H1.1 and H2.1) was directionally consistent but failed to reach statistical significance. Furthermore, *Secondary Appraisal* did not significantly predict subjective stress response (H2.2). Conversely, *Primary Appraisal* significantly predicted the subjective stress response, aligning with the *transactional theory of stress and coping*.

In line with the Baron and Kenny (1986) protocol used for hypothesis testing, mediation analysis was not formally pursued due to the non-significant total effect of *Self-esteem* on subjective stress. However, given the suggestive trend for the total effect and the theoretically inconsistent non-significance of the *Secondary Appraisal* pathway, I conducted an exploratory, fine-grained examination of the *PASA* subscales to clarify these observed relationships.

In-depth analysis

Contrary to expectation, *Secondary Appraisal* did not predict subjective stress during the acute psychosocial stressor (Figure 4; Table 4). This is theoretically noteworthy because, within the *transactional stress model* and the *PASA* framework, *Secondary Appraisal* (perceived coping resources and controllability) is posited to buffer stress responses. Given this pattern, a more granular approach is warranted: *Secondary Appraisal* within the *PASA* is composed of two subscales (*Self-concept of own abilities* and *Belief of control*) which may differentially relate to subjective stress and even *Self-esteem*. An in-depth analysis of these subcomponents is therefore necessary to clarify whether specific facets of *Secondary Appraisal* are obscured in the aggregate score and to refine the appraisal–stress linkage under acute social evaluation.

As presented in Figure 7 and summarized in Table 7, the *PASA* subscale *Self-concept of own abilities* showed a statistically significant and inverse association with subjective stress. A simple linear regression with perceived subjective stress as the criterion and *Self-concept of abilities* as the predictor was significant, $F(1.33) = 9.88, p = .004$, accounting for 23.0% of the variance in stress ratings ($R^2 = .230$). The unstandardized slope indicated that each one-point increase on this subscale predicted a 12.53-point decrease in subjective stress ($SE = 3.99$), corresponding to a moderate standardized effect ($\beta = -.48; p = .004$).

Consistent with these estimates, the scatterplot displays a clear downward trend with comparatively less dispersion around the regression line ($SEE = 23.30$) than observed for the overall *Secondary Appraisal* composite. In sum, participants who anticipated stronger personal

capabilities reported substantially lower subjective stress in response to the acute stressor, underscoring the specific role of perceived abilities within *Secondary Appraisal*.

Table 7. Linear regression analysis of subjective stress on Self-concept of own abilities (Subscale Secondary Appraisal).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,480 ^a	,230	,207	23,29976

a. Predictors: (Constant), Self-concept of own abilities (PASA)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5361,641	1	5361,641	9,876	,004 ^b
	Residual	17915,002	33	542,879		
	Total	23276,643	34			

a. Dependent Variable: Subjective Stress Response (VAS)

b. Predictors: (Constant), Self-concept of own abilities (PASA)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	90,025	17,260		5,216	<,001
	Self-concept of own abilities (PASA)	-12,531	3,988	-,480	-3,143	,004

a. Dependent Variable: Subjective Stress Response (VAS)

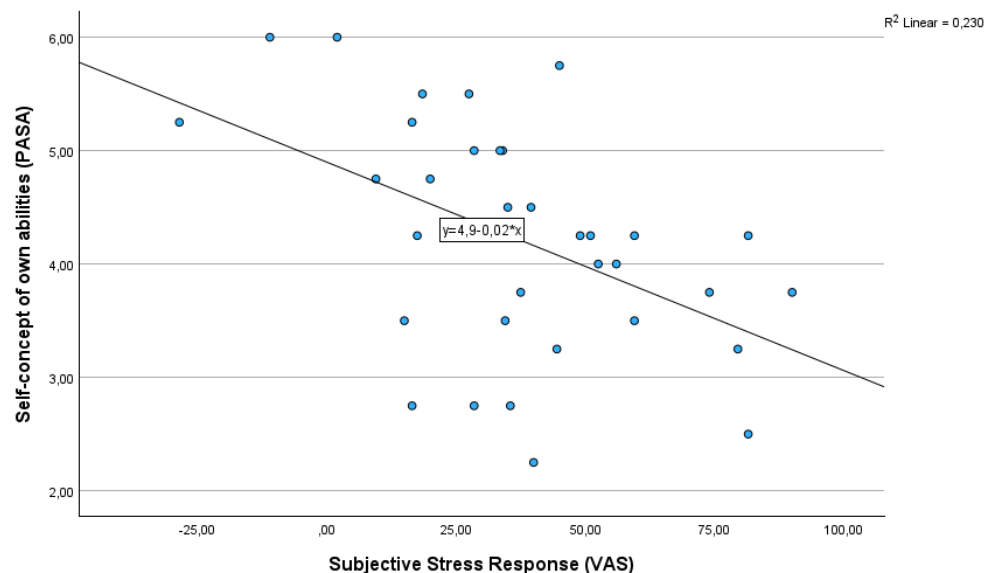


Figure 7. Scatter plot of linear regression analysis of subjective stress on Self-concept of own abilities (Subscale Secondary Appraisal).

In contrast, Figure 8 and Table 8 show the *Secondary Appraisal* subscale *Belief of control* exhibited a small, non-significant positive association with subjective stress. The regression model did not reach significance, $F(1.33) = 1.58, p = .217$, and explained little variance ($R^2 = .046$). The slope was shallow ($B = 6.67, SE = 5.30$), with a modest standardized coefficient ($\beta = .21; p = .217$), and the scatterplot shows wide dispersion around a slight upward trend ($SEE = 25.94$).

In other words, perceiving the situation as controllable did not reliably reduce subjective stress in this acute, socio-evaluative context and even tended to co-vary with higher stress. This pattern contrasts with the *Self-concept of own abilities* subscale (Figure 7, Table 7), which showed a significant inverse association with stress. The divergence between these two facets might help explain why the scale *Secondary Appraisal* score was non-significant. The stress-buffering effect of perceived abilities appears to be offset by a countervailing, non-protective control component.

Table 8. Linear regression analysis of subjective stress on *Belief of control* (Subscale *Secondary Appraisal*).

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.214 ^a	.046	.017	25,94342	
a. Predictors: (Constant), Belief of control (PASA)					

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1065,636	1	1065,636	1,583	.217 ^b
	Residual	22211,007	33	673,061		
	Total	23276,643	34			
a. Dependent Variable: Subjective Stress Response (VAS)						
b. Predictors: (Constant), Belief of control (PASA)						

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	7,990	23,636		.338
	Belief of control (PASA)	6,674	5,304	.214	1,258
a. Dependent Variable: Subjective Stress Response (VAS)					

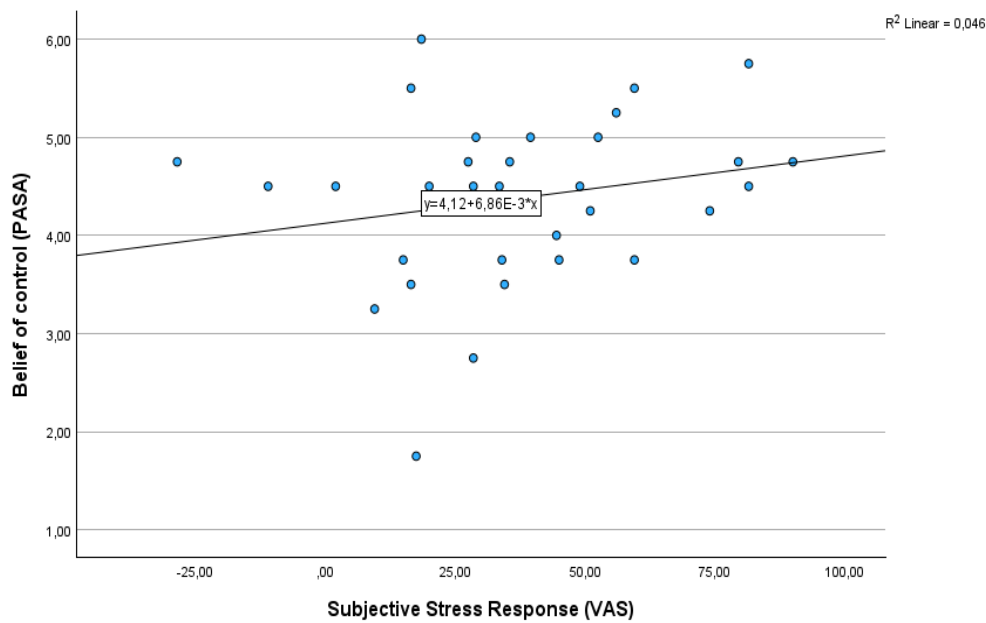


Figure 8. Scatter plot of linear regression analysis of subjective stress on Belief of control (Subscale Secondary Appraisal).

Because the two *Secondary Appraisal* subscales showed divergent associations with subjective stress, combining them into a single composite (*Secondary Appraisal*) likely attenuates or cancels potential effects. Relying solely on the *Secondary Appraisal* therefore risks obscuring mechanisms by which *Self-esteem* relates to stress responses. Accordingly, the relations between *Self-esteem* and each subscale (*Self-concept of abilities* and *Belief of control*) are examined separately.

As displayed in Figure 9 and Table 9, *Self-esteem* showed a positive -though only trend-level- association with the *Secondary Appraisal* subscale *Self-concept of own abilities*. The simple linear regression with *Self-concept of abilities* as the outcome and *Self-esteem* as the predictor approached significance, accounting for about 9.3% of the variance ($R^2 = .093$). The unstandardized slope indicated that each one-point increase in *Self-esteem* predicted a 0.055-point increase in perceived abilities ($SE = .30$), corresponding to a small-to-moderate standardized effect ($\beta = .31$; $p = .071$).

Consistent with these estimates, the scatterplot shows a gentle upward trend with considerable dispersion. Thus, participants with higher *Self-esteem* tended to appraise their personal capabilities more favorably, but this relation did not reach conventional levels of statistical significance in the present sample.

Table 9. Linear regression analysis of Self-concept of own abilities (Subscale Secondary Appraisal) on Self-esteem.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,305 ^a	,093	,066	,99362

a. Predictors: (Constant), Self Esteem (RSES)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,432	1	3,432	3,476	,071 ^b
	Residual	33,568	34	,987		
	Total	37,000	35			

a. Dependent Variable: Self-concept of own abilities (PASA)

b. Predictors: (Constant), Self Esteem (RSES)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,356	,985		2,392	,022
	Self Esteem (RSES)	,055	,030	,305	1,865	,071

a. Dependent Variable: Self-concept of own abilities (PASA)

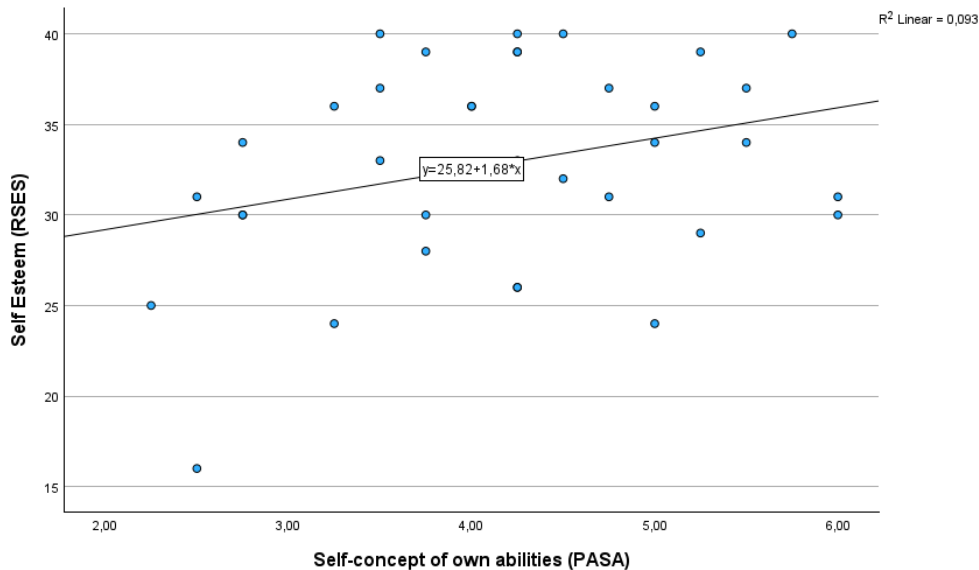


Figure 9. Scatter plot of linear regression analysis of Self-concept of own abilities (Subscale Secondary Appraisal) on Self-esteem.

Interestingly, illustrated in Figure 10 and summarized in Table 10, *Self-esteem* was negatively associated with the *Secondary Appraisal* subscale *Belief of control*, although this relation only approached significance. A simple linear regression with *Belief of control* as the criterion yielded $F(1.34) = 3.10, p = .087$, explaining 8.4% of the variance ($R^2 = .084$; $SEE = 0.81$).

The scatterplot mirrors this modest downward trend, indicating that higher *Self-esteem* tended to be associated with slightly lower perceived situational control in the *TSST* context. This pattern stands in contrast to the (positive) trend between *Self-esteem* and *Self-concept of own abilities* (Figure 9 and Table 9), suggesting that *Self-esteem* may differentially relate to the two facets of *Secondary Appraisal*: it aligns with confidence in personal capabilities, but not necessarily with perceived *Belief of control*.

Table 10. Linear regression analysis of *Belief of control* (Subscale *Secondary Appraisal*) on *Self-esteem*.

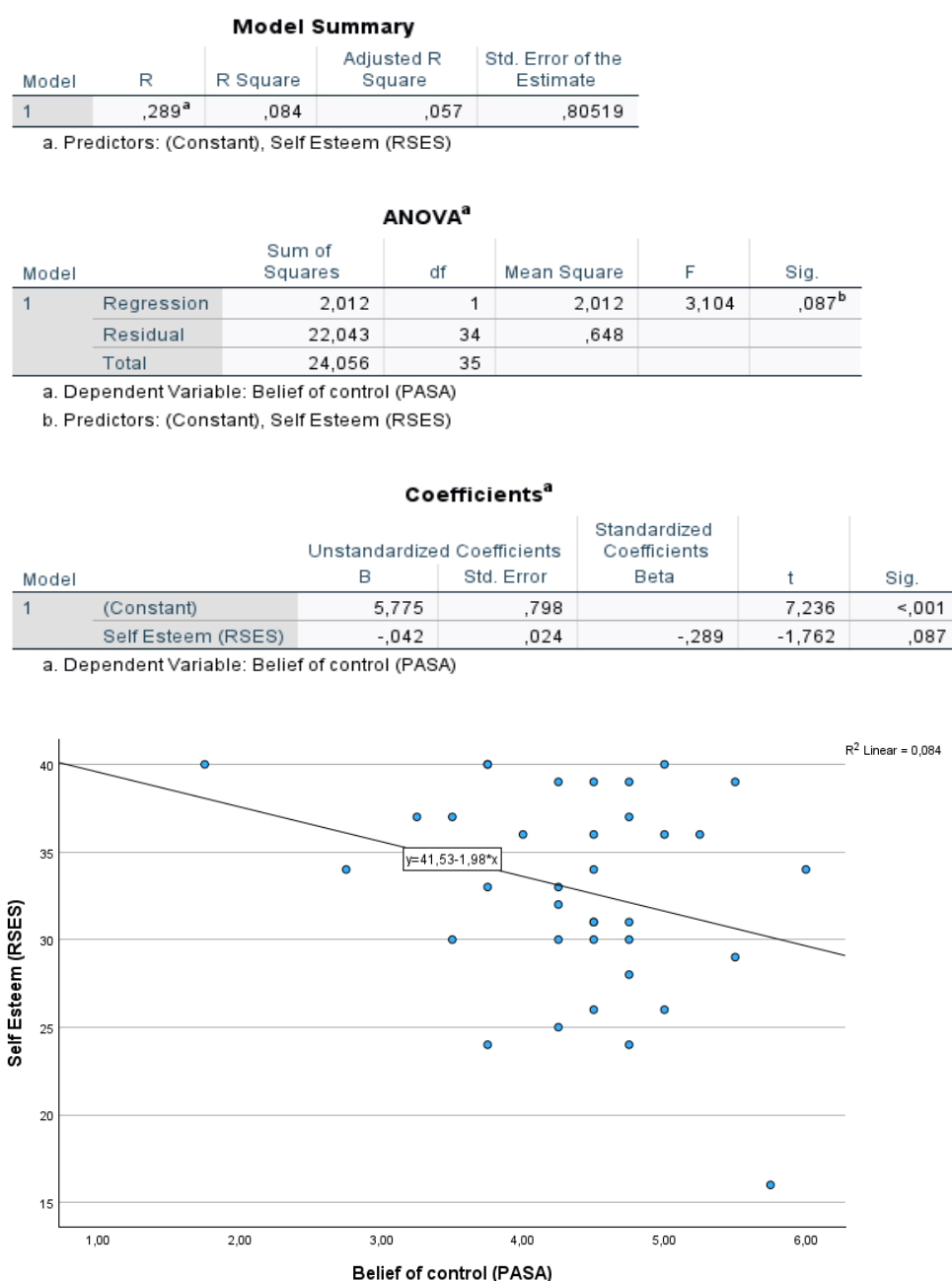


Figure 10. Scatter plot of linear regression analysis of *Belief of control* (Subscale *Secondary Appraisal*) on *Self-esteem*.

In contrast but predicted, the present dataset shows that the subscales of *Primary Appraisal* (*threat* and *challenge*) emerged as strong predictors of subjective stress. Each showed a clear negative association with the *VAS* ratings (i.e., higher values on the subscales were linked to lower perceived stress). This pattern is consistent with the central role of *Primary Appraisal* in the *transactional models of stress and coping*, whereby anticipatory evaluations of the upcoming task closely track immediate stress experience.

Moreover, *Self-esteem* showed meaningful tendencies in the expected direction: higher *Self-esteem* was associated with more favorable *Primary Appraisal*, reflected in lower scores on both *threat* and *challenge*. Together, these findings support the view that *Self-esteem* shapes how situations are appraised and, through those appraisals, relates to the intensity of subjective stress in response to an acute psychosocial stressor.

DISCUSSION

Grounded in the *transactional theory of stress and coping*, this thesis sets out to examine whether *Self-esteem* shapes subjective stress responses to an acute stressor via cognitive appraisal (primary and secondary). In this framework, stress is not a property of events per se but of person–environment transactions that are evaluated for their significance (*Primary Appraisal: threat/challenge*) and for one’s coping options (*Secondary Appraisal: Self-concept of own abilities and Belief of control*). Anticipatory appraisals were assessed with the *PASA* immediately before the *Trier Social Stress Test*, and subjective stress was captured with a visual analogue scale (*VAS*) administered around the stressor. *Self-esteem* was measured at baseline using the *Rosenberg Self-Esteem Scale*. The sample comprised healthy, naturally cycling women tested in the follicular phase to minimize biological variance in stress reactivity. Following the mediation analysis postulated by Baron and Kenny (1986), analyses first tested the main effect and then links to the mediation variables. Because the main effect was not significant, the planned mediation test was not pursued; instead, an in-depth analysis of the *PASA* subscales was performed to clarify inconsistent patterns within them. Together, this design allowed me to evaluate whether *Self-esteem* translates into lower acute subjective stress chiefly through how the situation is construed in advance (*Primary Appraisal* and *Secondary Appraisal*), in line with prior theory and evidence linking appraisal to stress responses and adjustment.

Findings

Within this study, mayor findings could be presented. First, the expected negative association between *Self-esteem* and subjective stress (H1.1/H2.1) was directionally consistent but did not reach conventional significance and accounted for a modest proportion of variance. In addition, *Primary Appraisal* was a robust predictor of subjective stress: higher ratings on the *Primary Appraisal* composite were associated with lower stress, explaining a sizeable share of variance (H1.2). This aligns with the central role of *Primary Appraisal* in acute stress responding proposed by the *transactional theory of stress and coping* and observed in laboratory work using acute stressors. Interestingly, and contrary to the transactional theory, *Secondary Appraisal* did not significantly predict stress (H2.2). In fact, the regression analysis showed negligible influence. This result is consistent with findings from many previous studies. Lastly,

Self-esteem was significantly related to *Primary Appraisal* (H1.2), indicating that higher *Self-esteem* resulted in more favorable *Primary Appraisal* (*threat* and *challenge*). Crucially, *Self-esteem* was not significantly related to the aggregate *Secondary Appraisal* score (H2.2).

Because the main effect was non-significant, mediation was not tested according to the priori plan. Instead, an in-depth analysis of *Secondary Appraisal* was conducted to investigate the lack of relationship between *Secondary Appraisal* and subjective stress, despite this pathway being postulated by *the transactional theory of stress and coping*. Disaggregating *Secondary Appraisal* revealed that *Self-concept of one's own abilities* was a moderate, significant negative predictor of subjective stress, meaning participants who anticipated stronger personal capabilities reported substantially lower stress from the *TSST*. By contrast, *Belief of control* showed a small, non-significant positive association with stress. When combined, these opposite-signed relations cancel out, producing the non-significant effect. This pattern is plausible in the *TSST* context: *The Trier social stress test* is intentionally designed to be largely uncontrollable for the participants (e.g., standardized timing, scripted panel behavior), despite its highly socio evaluative nature. In such settings, *Belief of control* may be incongruent with objective situational constraints and fail to buffer stress (or even covary with higher stress when control expectations are unmet). This becomes even clearer by looking at the specific items which load the subscale *Belief of control* (e.g., “It depends mainly on me whether the experts assess me positively” or “The best way to protect myself from failure in this job interview is through my own behavior”). By contrast, confidence in one's own abilities (e.g., “In this situation, I know what I can do” or “I can think of many solutions to this problem”) remains adaptive even under limited external control, fitting our finding that higher perceived abilities predicted lower stress.

Self-esteem showed corresponding tendencies at the subscale level: it was positively (not significantly) related to *Self-concept of own abilities*, but negatively (not significantly) to *Belief of control*. Together with the significant link between *Self-esteem* and *Primary Appraisal*, this pattern suggests that *Self-esteem* may lower stress primarily by shaping how the situation is construed in advance (less *threat*, more manageable *challenge*) and by strengthening capability beliefs, rather than by increasing perceived situational control in a task that is largely scripted and uncontrollable for the participants (*TSST*). This interpretation aligns with coping-in-context perspectives that stress person–situation fit and the central role of appraisal, and it is consistent with evidence that *Self-esteem* relates to day-to-day appraisals and stress in naturalistic settings. In summary, these findings reinforce the importance of analyzing the

subscales (especially with *Secondary Appraisal*) to present accurate results.

Limitations

Taken together, these findings (along with methodological constraints related to sample size, measurement timing, and task context) necessitate a careful consideration of the study's limitations.

Firstly, the sample was modest ($N = 36$), female-only, and restricted to the follicular phase. These decisions improved internal control but limit generalizability and reduce power to detect small effects, particularly for the *Self-esteem*–stress association and for subscale relations. The between-person, cross-sectional design around a single laboratory stressor also limits causal inference.

Additionally, the timing of the measurements could possibly limit this study. The *PASA* (cognitive appraisal) were assessed before the *TSST*; subjective stress was captured via *VAS* shortly before and after the *TSST*, and the outcome was computed as a derived score to approximate peak stress. Although this approach was justified by descriptive patterns, the lack of repeated in-task measures means true peak subjective stress may have been missed or diluted by immediate relief after task termination.

On another side, the operationalization of the constructs may present an opening for critique. The *PASA* operationalizes anticipatory (not post-hoc) appraisal and aggregates conceptually distinct elements into composites; as shown here, composites can obscure divergent subcomponents. Conversely, the *VAS* is a single-item measure of stress intensity. Multi-item state stress scales or concurrent physiological indices (e.g., cortisol, heart rate) would strengthen construct coverage. Finally, *Self-esteem* was assessed globally (*RSES*). On the one hand, given the nature of the study's recruitment (searching for participants for a stress-task-study), the mean *Self-esteem* score of the sample was high. On the other hand, daily or state *Self-esteem* might show stronger coupling with momentary appraisals in acute tasks.

Furthermore, the analytic choice limited this study, as I followed the classic Baron–Kenny sequence and did proceed to formal indirect-effect estimation because the total effect was non-significant. Modern recommendations emphasize that a significant total effect is not required for tests of mediation and advocate bootstrapped confidence intervals for indirect

effects (which are often better powered). Although adhering to plan preserves analytic integrity, it may have reduced sensitivity to detect indirect pathways consistent with the observed pattern.

Lastly, the *TSSST* intentional uncontrollability likely attenuated links between perceived control and stress. This is a feature, not a flaw, of the paradigm, but it narrows conclusions about contexts where exerting control is possible or required (e.g., problem-solvable stressors).

Future research

This thesis and the findings refine theory and measurement in several ways and suggest concrete next steps and further research in this topic. For example, the demonstration that *Self-concept of own abilities* and *Belief of control* diverge under acute social evaluation argues for analyzing *Secondary Appraisal* subscales separately rather than relying solely on composites in *TSSST* studies. Future work should test whether the abilities facet mediates *Self-esteem*'s protective effect, while control shows little or opposing association in uncontrollable tasks. Experimental manipulations that independently increase perceived abilities (e.g., skills priming, mastery induction) versus perceived control (e.g., choice, contingency) would provide causal leverage.

Consistent with theory and prior *TSSST* research, *Primary Appraisal* (threat/challenge) tracked subjective stress closely in this study, and *Self-esteem* predicted more favorable *Primary Appraisal*. Longitudinal or within-person designs assessing appraisals repeatedly across anticipation, performance, and recovery phases could test whether *Primary Appraisal* mediates the *Self-esteem*–stress link under social-evaluation and whether this pathway predicts faster recovery, a key facet of resilience.

Additionally, replications should aim for larger, gender-balanced samples across hormonal phases and include diverse cultural backgrounds, given known person and sociocultural differences in appraisal and coping.

Lastly, if perceived abilities are the active *Secondary Appraisal* ingredient in uncontrollable contexts, brief capability-focused interventions (e.g., implementation intentions, self-affirmation, practice runs) may be more effective than control-enhancing manipulations for reducing acute stress in evaluative settings (e.g., exams, interviews). More broadly, interventions that enhance *Self-esteem* have been linked to higher resilience, suggesting translational potential for improving appraisal patterns and stress outcomes

Conclusion

This thesis shows that, in the face of an acutely stressful, largely uncontrollable social-evaluative task, how the situation is construed matters greatly: *Primary Appraisals* and the subscale *Self-concept of own abilities* of *Secondary Appraisal* are reliably tied to subjective stress, whereas *Belief of control* are not. *Self-esteem* relates to more favorable *Primary Appraisals* and, by tendency, to stronger perceived abilities, sketching a plausible cognitive route for its protective role. By differentiating the subscales of cognitive appraisal and specifically demonstrating that *Self-concept of own abilities* is the active ingredient in this uncontrollable context, the present findings provide a critical refinement to the measurement and application of *the transactional model of stress and coping*. These insights point to concrete methodological and applied directions for advancing our understanding of stress, appraisal, and resilience.

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APPENDIX

Abstract (English)

This study tests whether *Self-esteem* impacts subjective stress in response to an acute stressor and whether this association is transmitted by cognitive appraisals, as proposed by *the transactional theory of stress and coping*. Acute stress was induced with the *Trier Social Stress Test (TSST)*. Anticipatory appraisals were measured immediately before the *TSST* using the *Primary Appraisal Secondary Appraisal scale (PASA: threat/challenge; Self-concept of own abilities/belief of control)*. Subjective stress was assessed with a visual analogue scale (*VAS*) around the task, and *Self-esteem* was measured at baseline with the *Rosenberg Self-Esteem Scale (RSES)*. The sample comprised healthy, naturally cycling women (N=38) tested in the follicular phase. Following a preregistered mediation analysis sequence, simple regressions were used to test the total and component paths. Because the total effect was non-significant, exploratory analyses of the cognitive appraisal subscales were conducted.

Self-esteem showed a small, nonsignificant negative relation to subjective stress. *Primary Appraisal* robustly predicted lower stress, whereas *Secondary Appraisal* did not. Disaggregating *Secondary Appraisal* revealed divergent facets: *Self-concept of own abilities* significantly predicted lower stress (moderate effect), but *Belief of control* showed a small, non-significant positive relation to stress. *Self-esteem* related significantly to more favorable *Primary Appraisals* and showed opposing trends with the two subscales of *Secondary Appraisal*.

Findings suggest that under a largely uncontrollable, socio-evaluative stressor, *Self-esteem* may confer protection chiefly via anticipatory meaning and capability beliefs rather than perceived situational control. Practically, capability-focused preparations (e.g., mastery inductions, self-affirmation) may be more stress-buffering than control-enhancing strategies. Replication with larger, mixed-gender samples and modern mediation methods is warranted.

Keywords

Stress, self-esteem, cognitive appraisal, primary appraisal, secondary appraisal, self-concept of own abilities, belief of control, Trier Social Stress Test (TSST), Transactional theory of stress and coping, Primary Appraisal Secondary Appraisal scale (PASA).

Abstract (German)

Diese Studie untersucht, ob *Selbstwertgefühl* einen Einfluss auf subjektiven Stress als Reaktion auf einen akuten Stressor hat und ob dieser Zusammenhang durch kognitive Bewertungen vermittelt wird, wie es die *Transaktionale Theorie von Stress und Bewältigung* nahelegt. Akuter Stress wurde mit dem *Trier Social Stress Test (TSST)* induziert. Kognitive Bewertungen wurden unmittelbar vor dem *TSST* mit Hilfe der *Primary Appraisal Secondary Appraisal Skala (PASA: Bedrohung/Herausforderung; Selbstkonzept der eigenen Fähigkeiten/Gefühl der Kontrolle)* gemessen. Der subjektive Stress wurde mit einer visuellen Analogskala (*VAS*) rund um die Aufgabe bewertet, und das *Selbstwertgefühl* wurde zu Beginn mit der *Rosenberg Self-Esteem Skala (RSES)* gemessen. Die Stichprobe umfasste gesunde Frauen mit natürlichem Zyklus ($N = 38$), die in der Follikelphase getestet wurden. Nach einer vorab registrierten Mediationsanalyse-Sequenz wurden einfache Regressionen verwendet, um die Gesamt- und Komponentenpfade zu testen. Da der Gesamteffekt nicht signifikant war, wurden explorative Analysen der kognitiven Bewertungssubskalen durchgeführt.

Selbstwertgefühl zeigte einen geringen, nicht signifikanten negativen Zusammenhang mit subjektivem Stress. Die *Primary Appraisal* sagte einen geringeren Stressstand zuverlässig voraus, während dies bei der *Secondary Appraisal* nicht der Fall war. Die Aufschlüsselung der *Secondary Appraisal* ergab unterschiedliche Facetten: Das *Selbstkonzept der eigenen Fähigkeiten* sagte einen geringeren Stressstand signifikant voraus (moderater Effekt), während das *Gefühl der Kontrolle* einen geringen, nicht signifikanten positiven Zusammenhang mit Stress aufwies. Das *Selbstwertgefühl* stand in signifikantem Zusammenhang mit günstigeren *Primary Appraisal* und zeigte gegensätzliche Trends bei den beiden Subskalen der *Secondary Appraisal*.

Die Ergebnisse deuten darauf hin, dass *Selbstwertgefühl* unter einem weitgehend unkontrollierbaren, sozial-evaluativen Stressor vor allem durch antizipatorische Bedeutungs- und Fähigkeitsüberzeugungen und weniger durch die wahrgenommene Situationskontrolle Schutz bieten kann. In der Praxis können fähigkeitsorientierte Vorbereitungen (z. B. Mastery Induktion, Selbstbestätigung) stresspuffernder wirken als kontrollverstärkende Strategien. Eine Replikation mit größeren, gemischtgeschlechtlichen Stichproben und modernen Mediationsmethoden ist gerechtfertigt.

Schlagwörter

Stress, Selbstwertgefühl, kognitive Bewertung, Primäre Bewertung, Sekundäre Bewertung, Selbstkonzept der eigenen Fähigkeiten, Kontrollüberzeugung, Trier social stress Test (TSST), Transaktionale Theorie von Stress und Bewältigung, Primary Appraisal Secondary Appraisal Skala (PASA).