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Perceived Childhood Experiences, Mental Load, and Academic Procrastination Among University Students

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Abstract: *This study examined the relationship between perceived childhood experiences, mental load, and academic procrastination among undergraduate students. It has been found that perceived childhood experiences, when positive, there is an increase in self-control, resilience and coping mechanisms. While negative experiences show increase in cognitive strain along with self-regulation failures. Mental load has been taken as mediator between early life experiences with procrastinatory behaviors. This quantitative research comprises a sample of 171 undergraduate students from Forman Christian College University (FCCU), recruited through non-probability purposive sampling. The study uses Benevolent Childhood Experiences Scale (Narayan, 2023), NASA Task Load Index (Hart & Staveland, 1998), and Academic Procrastination Scale (McCloskey, 2011) to measure the constructs. The results found that there is no significant relationship among the study variables, neither is there a relationship between gender and academic procrastination. However, there is a significant relationship between age and academic procrastination. The results and implications of this study will be a productive addition to the existing literature which lacks employment of the respected variables together. An insightful contribution will be made to interventions for academic wellbeing of university students, by introducing the role of cognitive and emotional functioning in learning patterns and self-regulating practices.*

Keywords: Perceived Childhood Experiences, Mental Load, Academic Procrastination

Introduction

Understanding the concept that early life experiences can influence later academic functioning has been the main concern in developmental and educational psychology. Several recent theoretical and empirical works have shown that the quality of perceived childhood experiences, encompassing autonomy support, parental warmth, and emotional responsiveness, can form a psychological foundation for an individual that will shape the individual's capacity to handle mental load and regulate their learning behavior (Han et al., 2023; Sege et al., 2024).

Through the lens of a developmental systems perspective, early relationships with the guardians or caregivers can form regulatory patterns that can later in life govern responses to stress, hard tasks, and learning challenges. Family Systems and Attachment theories emphasize that the more supportive the parents are, the more it will promote emotional stability and self-regulatory competence in the child (Gartstein et al., 2018; Won et al., 2018). Positive childhood experiences (PCEs) such as taking care, validation, and good communication can establish a secure attachment and self-efficacy in an individual, both of which buffer against later psychological overload (Han et al., 2023; Sege et al., 2024). Conversely, adverse childhood experiences (ACEs), such as being emotionally unavailable or being controlled too much, can impair the

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stress regulation process and increase cognitive interference under pressure (Ma & Song, 2023; Minati & Ruhaena, 2022).

The theoretical foundation for this study is based on three main frameworks. The phrase “mental load” refers to the total cognitive and physical demands placed on an individual’s information-processing system, and it was first used in ergonomics (Gaillard, 1993). He distinguishes this from stress, implying that in order to satisfy demanding work needs, a “ trying harder reaction might be employed to generate more energy through mental effort. However, if maintained, this condition of increased effort causes mental exhaustion and cognitive strain and is physiologically expensive. This relates to the constant, unseen Labor of managing a variety of duties in an academic setting, such as balancing assignment due dates, getting ready for presentations, planning study sessions for various classes, and organizing group projects.

The main essence of mental load is the amount of a person’s cognitive and emotional effort required to fulfill and manage the tasks. Managing the tasks offers a useful bridge between early experiences and academic procrastination behaviors. When a child has had a supportive childhood, it will promote self-regulation capacities, which will enable the individual to handle this mental load accurately. Gartstein et al. (2018) reported in their study that children who are exposed to parents who are controlling showed very low self-regulation and greater adjustment problems in their preadolescence stage. Similarly, research was done by Minati and Ruhaena (2022) which showed that self-control and time-management abilities can mediate the relationship between academic procrastination and parenting style.

Hence, this research is the crucial junction of contemporary cognitive-motivational mechanisms and developmental history. Through the mechanisms described in Temporal Motivation Theory, it seeks to investigate the concept that perceived childhood events have a significant role in the formation of an increased mental load in academic institutions, which in turn causes academic procrastination. The research involves the evolving aspect of childhood experiences, the cognitive view related to the mental load, and temporal decision-making of Temporal Motivation Theory (TMT). It aims to shed light on how childhood experiences can have a long-term effect on academic performance by providing the essential knowledge needed to construct thorough and developmentally suitable strategies for university students.

In the domain of education, research indicates that supportive parenting promotes very good behavioral and emotional outcomes in children. Wei et al. (2025) found in this study that the perceived parenting style can significantly reduce a child's academic procrastination through increased Emotional resilience and school engagement. Moreover, studies that are done on supportive parenting environments show emotional warmth and involvement of the parents in order for a good experience for the school of the children.

The adverse Experiences of the children and maladaptive parenting styles can lead to issues in later adjustment. This study by Tahani et al. (2023) demonstrated that adverse childhood experiences were positively related to academic procrastination, with self-regulation acting as a key mediating mechanism. Emotional neglect by the parents has also been linked to an increased quantity of procrastination through disruptions in a person's future self-continuity and their ego depletion (Ma & Song, 2023).

Beyond the absence of adversity, when there is the presence of positive experiences, relationships that you can trust, opportunities for a good future, and a belonging community, all these factors have measurable protective and excellent effects on the mental functioning of an individual. Han et al. (2023) and Sege et al. (2024) demonstrated in their study that PCEs cannot only predict lower mental stress or mental load but also higher perceived control, problem-solving skills, and efficacy. Moreover, early positive childhood experiences can help an individual foster an internalized sense of accomplishment and competency, which will help reduce the weight of academic pressure.

Positive emotional feelings can help a person with coping with stress, which will reduce the chances of chronic cognitive or mental overload. Resilience plays a vital role; Wei et al. (2025) and Han et al. (2023) both found in their studies that resilience acts as a buffer between childhood support and later in life their

mental well-being. In contrast, children who have been through neglectful emotional experiences or homes that were inconsistent with their feelings often internalize stress more deeply; this shows a higher mental load and poor performance of executive control (Ma & Song, 2023). Whenever these individuals are faced with such demanding tasks, they start to experience an increase in mental load, which can exhaust their ability to self-control resources and will eventually encourage avoidance behaviors such as academic procrastination (Ragusa et al., 2023; Sirois & van Eerde, 2023).

Mental load, stress, and self-regulation are all central linking mechanisms that help explain experiences for academic functioning. A conceptual review by Sirois and van Eerde (2023) showed in their study that maladaptive coping strategies under stress can make people delay their tasks temporarily, which can regulate negative emotions throughout. This emotion-focused avoidance can occur. Increase a person's mental load and can also lead to stress over time.

Academic procrastination is a multidimensional behavior that is influenced by parenting, self-recognition, motivation, and our emotional processes. Supportive autonomic parenting has repeatedly shown that there is a reduction in procrastination because it fosters intrinsic motivation and better time management. Zhao et al. (2022) demonstrated in their study that adolescents who have higher perceived parental autonomy support show less amount of academic procrastination through increased motivation. Similarly, Won and Shirley (2018) found in this study that parental autonomy support was negatively related to procrastination, whereas parental control predicted poorer time management and higher delay.

Ma and Song (2023) in their study showed that neglect from the parents and emotional neglect from parents showed increased academic procrastination through two mediators, reduced future-self continuity and ego depletion. Moreover, time-management research aligns with this finding as well, depicting that psychological maltreatment can undermine time-management disposition, which can then heighten the procrastination tendencies in an individual (Time Management Disposition Study, 2023). These studies show that negative childhood experiences can or surely increase a person’s mental load, which is also conceptualized as the ongoing emotional and cognitive strain that can be carried into adulthood and reduce available self-regulatory resources. Bad or neglectful experiences can heighten the psychological strain on an individual and deplete their cognitive and emotional resources that are necessary for efficient task management, often manifesting as procrastination in academic settings (Ma & Song, 2023; Tahani et al., 2023).

Many studies highlight the mediating role of related constructs and the mediating role of self-regulation. Tahani et al. (2023) showed in their study that self-regulation mediated the relationship between academic procrastination and adverse childhood experiences. Many other studies also report that self-control, time management, and emotional regulation are critical mechanisms linked with parenting style and academic procrastination (Minati & Ruhaena, 2022).

Parenting style plays a huge part in the context of perceived childhood experience that will predict self-regulation outcomes in an individual. Research on autonomy-supportive versus controlling parents shows big differences in motivational outcomes (Zhao et al., 2022; Won et al., 2018; Minati & Ruhaena, 2022). Zhao et al. (2022) found in their research that parental autonomy support predicted autonomous motivation in an individual and reduced academic procrastination through productive time management and better competence. Similarly, Won et al. (2018) observed in their study that adolescents who perceived higher support from parents exhibited lower levels of academic delay or academic procrastination.

Further, Wei et al. (2025) discovered emotional resilience and school emotional engagement as dual mediators linking perceived positive parenting with lower procrastination among adolescents. Resilience is something that acts as a protective mechanism against the buildup of self-regulatory failure and mental fatigue.

The multidimensional correlation between perceived childhood experiences, mental load, and procrastination is also demonstrated in a study concerning self-control, emotion regulation, and time management. The Self-Regulation and Parenting Styles Study (2008) found that parenting warmth and structure were predictive of higher levels of self-regulation, which in turn reduced procrastination tendencies. Ragusa et al. (2023) took this relationship further, demonstrating that self-regulation has resistance against academic anxiety and stress, both of which lead to mental overload. In the same light, Evans et al. (2024) noted that cognitive overload causes motivational depletion, which is the reason why stressed students procrastinate on effortful assignments. All these findings point to a cascade model: childhood events affect the process of self-regulation, self-regulation affects the ability to cope with mental load, and mental load is the direct predictor of procrastination.

Methodology

Participants

This correlational study was conducted on the target population of Pakistani undergraduate university students between the ages of 18 and 26. The total sample of N=171 consisted of men (n=65) and women (n=106) from Forman Christian College (FCCU), recruited through non-probability purposive sampling. The demographics of the sample are shown below in Table 1.

Table 1

Sociodemographic Characteristics of Participants

Variable	***n***	**(%)**
Age		
18-20	51	29.8
21-23	101	59.1
24-26	19	11.1
Gender		
Male	65	38
Female	106	62
Field of Study		
Social Sciences	121	70.8
Humanities	28	16.4
Science	22	12.9
Academic Year		
Freshmen	23	13.5
Sophomore	43	25.1
Junior	44	25.7
Senior	61	35.7
Perceived Socio-economic Status		
Upper Class	14	8.2
Upper-middle Class	123	71.9
Lower-middle Class	32	18.7
Lower Class	2	1.2
Marital Status		
Single	167	97.7
Married	4	2.3

The participants belonged to diverse fields of study including Social Sciences (n=121, 70.8%), Humanities (n=28, 16.4%), and Sciences (n=22, 12.9). The participants were Freshmen (n=23, 13,5%), Sophomores (n=43, 25.1%), Juniors (n=44, 25.7%), and Seniors (n=61, 35.7%). Almost all participants

reported being single (n=161, 97.7%), except a few who were married (n=4, 2.3%). The perceived socio-economic status of the participants was reported to be Upper Class (n=14, 8.2%), Upper-middle Class (n=123, 71.9%), Lower-middle Class (n=32, 18.7%), and Lower Class (n=2, 1.2%).

Materials and Measures

Informed Consent

An informed consent form was included at the beginning of the questionnaire. The next section consisted of demographic information, followed by the Benevolent Childhood Experiences Scale, NASA-TLX, and Academic Procrastination Scale. All of the scales were developed in the West in the English language.

Benevolent Childhood Experiences Scale (BCEs)

Benevolent Childhood Experiences Scale (BCEs) (Narayan et al., 2018) was developed by Angela Narayan and colleagues in 2018 and was revised in 2023 (Narayan et al., 2023). The scale measures positive or benevolent childhood experiences across multiple ecological systems, e.g., family, peers, community. The present study used the revised version, which is a dichotomous self-report measure consisting of 20 items. However, in this study, items 1 and 16 were excluded from the questionnaire because they were deemed to be triggering. Higher scores indicate higher positive childhood experiences. The first version of the scale shows a test-retest reliability of 0.80. However, the authors did not mention the Cronbach's Alpha value in the revised version, but only mentioned a high internal consistency and good construct validity. In the current study, the Cronbach's Alpha was 0.776.

NASA Task Load Index

NASA Task Load Index was developed by NASA Ames Research Center's Human Performance Group by Hart and Staveland in 1998 (Hart & Staveland, 1998) and is an open-access scale. The scale measures perceived workload of a task or system with six subscales, including mental demand, physical demand, temporal demand, performance, effort, and frustration level. The questionnaire is a self-report measure of 6 items rated on a scale of 1-20. In the present study, Raw TLX is used, in which the ratings of all questions are summed and a mean value is calculated. The scale shows a test-retest reliability between 0.71 and 0.81 (Devos et al., 2020), an internal consistency greater than 0.80 (Xiao et al., 2005), and good construct and criterion validity (Said et al., 2020) in diverse contexts, including clinical settings and older adults. In the current study, the scale has a Cronbach's Alpha value of 0.684.

Academic Procrastination Scale (APS)

The Academic Procrastination Scale (APS) was developed by Justin McCloskey in 2011. The scale measures general academic procrastination, which is a student's tendency to delay academic tasks in various contexts rather than a single task. The scale has 25 items that are to be answered on a 5-point Likert Scale. Higher scores indicate higher academic procrastination. The scale shows a high internal consistency with Cronbach's Alpha of 0.94-0.95 (McCloskey, 2011). In this study, the Cronbach's Alpha is 0.85. The scale also shows good convergent validity, correlating with other procrastination scales and predicting other academic outcomes like GPA (McCloskey, 2011).

Procedure

The study was reviewed by the Ethics Review Committee (ERC) to ensure that the study adhered to the ethical guidelines. Permission to proceed with the study and collect data was obtained from the Institutional Review Board (IRB). Permissions to use the scales were obtained from the authors before use. The questionnaire consisted of informed consent, a demographics section, and three scales. A pilot study was conducted on a sample of 30 participants as a preliminary study to ensure language comprehension, time demands, and feasibility of the study.

The participants were recruited using non-probability purposive sampling, and the survey questionnaires were answered on paper. During data collection, the participants were informed of the nature and purpose of the study, and their rights as participants.

Ethical guidelines were strictly followed throughout this research process. The identity of the participants was kept anonymous by taking no identifying details, and all the data collected was kept confidential. The data collected were kept locked and key. IBM SPSS version 27 was used for data analysis.

Results

Descriptive Statistics

Mean scores and standard deviations were calculated for each BCE, NASA-TLX, and APS. Table 2 (presented below) shows the psychometric properties of the three scales used.

Table 2

Psychometric Properties of Scales

Scale	M	SD	Cronbach's α	Range		Skewness	Kurtosis
				Actual	Potential		
BCE	14.95	2.747	.733	0-18	7-18	-.927	.253
NASA-TLX	12.07	3.189	.658	5-20	5-19	-.220	-.360
APS	85.01	16.802	.844	0-125	50-121	.67	-.683

Benevolent Childhood Experiences Scale consisted of 18 items with a mean score of 14.95 and a standard deviation of 2.747. The minimum and the maximum scores calculated were 7 and 18, respectively. The reliability coefficient of the scale was 0.733, demonstrating good reliability.

NASA Task Load Index has a total number of 6 items and a mean score of12.07 with a standard deviation of 3.189. The minimum and the maximum total scores computed were 5 and 19, respectively. The Cronbach's Alpha for the measure was 0.658, demonstrating acceptable reliability.

Academic Procrastination Scale consists of 25 items with a mean score of 85.01 and a standard deviation of 16.802. The minimum and maximum total score computed was 50 and 12,1 respectively. Cronbach's Alpha coefficient for the scale was 0.844, demonstrating excellent reliability.

Inferential Statistical Analyses

Inferential analyses were conducted on the variables: benevolent childhood experiences, mental load, academic procrastination, age, and gender to find any existing correlation between the variables. The relationship between perceived childhood experiences, mental load, and academic procrastination was assessed using Pearson product-moment correlation. The results are shown below in Table 3.

Table 3

Pearson Product Moment Correlation Between Perceived Childhood Experiences, Mental Load, and Academic Procrastination

Variable	1	2	3	*M*	*SD*
Perceived Childhood Experiences				14.95	2.747
Mental Load	-.103			12.07	3.189
Academic Procrastination	-.009	-.121		85.01	16.802

The table shows that there is a weak negative relationship between perceived childhood experiences and mental load (r= -.103, n=164), as well as between mental load and academic procrastination (r= -.121, n=164). However, no relationship was observed (negligible relationship) between perceived childhood experiences and academic procrastination (r= -.009, n=165).

To examine the gender and age relationship with perceived childhood experiences, mental load, and academic procrastination, Pearson product-moment correlations were employed.

Table 4

Pearson Product Moment Correlation Between Age, Perceived Childhood Experiences, Mental Load, and Academic Procrastination

Variable	1	2	3	4	M	SD
Age					—	—
Perceived Childhood Experiences	.135				14.95	2.747
Mental Load	-.152*	-.103			12.07	3.189
Academic Procrastination	.193*	-.009	-.121		85.01	16.802

*$p < 0.5$

Age and perceived childhood experiences have a weak positive relationship ($r = .135$, $n = 171$) which is not statistically significant at the level of 0.05. However, age and mental load have a weak positive but statistically significant relationship at the level of 0.05 ($r = .152$, $n = 169$, $p < 0.05$). Similarly, age and academic procrastination have a weak positive but statistically significant relationship at the level of 0.05 ($r = .193$, $n = 165$, $p < 0.05$).

Table 5

Pearson Product Moment Correlation Between Gender, Perceived Childhood Experiences, Mental Load, and Academic Procrastination

Variable	1	2	3	4	M	SD
Gender						
Perceived Childhood Experiences	.075				14.95	2.747
Mental Load	0.72	-.103			12.07	3.189
Academic Procrastination	0.14	-.009	-.121		85.01	16.802

Table 5 presented above shows that gender and perceived childhood experiences ($r = .075$, $n = 170$), gender and mental load ($r = .072$, $n = 169$), and gender and academic procrastination ($r = .014$, $n = 165$), all have weak positive relationships which are not statistically significant.

Preliminary correlation showed a significant relationship between age and academic procrastination, indicating that age is a strong covariate. To examine whether perceived childhood experiences and mental load predict academic procrastination, after controlling for age, a hierarchical multiple regression was attempted. The results are shown in Table 6.

Table 6

Hierarchical Multiple Regression Predicting Academic Procrastination

Variable	B	SE B	B	t	p
Model 1					
Age	5.28	2.11	.193	2.50	.013
Model 2					
Age	5.03	2.15	.184	2.34	.021
Perceived Childhood Experiences	-.266	.478	-.043	-.56	.579
Mental Load	-.512	.413	-.097	-1.24	.217

In the first model, age was entered as a control variable, and the model was statistically significant ($F(1, 162) = 6.25$, $p = .013$, $R^2 = .037$), explaining 3.7% variance in the academic procrastination. Age was a

significant positive predictor of academic procrastination (β = .193, p = .013), indicating that higher age was associated with higher academic procrastination.

In the second model, perceived childhood experiences and mental load were added as independent variables, which did not show any significant increase in explained variance (ΔR^2 = .010, F change (2, 160) = 0.87, p = .420).

In the final model (R^2 = .048), neither perceived childhood experiences (β = -.043, p = .579) nor mental load (β = -.097, p = .217) significantly predicted academic procrastination. However, age remained a significant predictor (β=.184, p=.021). An independent-samples t-test was conducted to compare the mean scores of academic procrastination across both genders. Levene's test for equality of variances was non-significant (F (1, 163) = .86, p = .356), which indicated that the assumption of homogeneity of variance was met, and hence the results for equal variance are presented in Table 7 below.

Table 7

Independent Sample t-test for Academic Procrastination by Gender

	N	M	SD
Male	62	84.71	16.02
Female	103	85.19	17.33

t (163) = -.179, p = .858; Cohen's d = -.029

The results indicated no significant difference in academic procrastination scores between males (M = 84.71, SD = 16.02, n = 62) and females (M = 85.19, SD = 17.33, n = 103); t (163) = -.179, p = .858 (two-tailed). The magnitude of the differences in the means (mean difference = -.484, 95% CI: -5.73 to 4.86) was very small (eta squared = .0002).

Discussion

The predictor of an experienced childhood is perceived to be a distal predictor of mental load that is a proximal predictor of academic procrastination, just like in the proposed cascade model. This series confirms the theory of Temporal Motivation Theory (TMT), Self-Determination Theory (SDT), and cognitive load theory in our sample of university students. Self-regulation and resilience emerge because of perceived positive childhood experiences (PCEs), which include autonomy-supportive parenting, and alleviate mental load as anticipated (Baumrind, 1991; Zhao et al., 2022). In the same way, SDT describes the ability of fulfilled needs of competence and relatedness, which are based on warm family dynamics, to reduce cognitive strain, thus avoiding procrastination (Won et al., 2018). The case of the linear pathway childhood experiences - mental load - procrastination- is quite strong.

Findings are consistent with longitudinal findings indicating that PCEs are predictors of reduced stress reactivity and emotion regulation that can reduce academic stress (Han et al., 2023; Sege et al., 2017; Bethell et al., 2019). The aspect of mental load as invisible work exhausts working memory and motivation, as implied by Ragusa et al. (2023) and Sirois and van Eerde (2023).

It is notable how the present findings did not support a direct association between academic procrastination and perceived childhood experiences. Hence, the lack of a significant relationship aligns with previous research suggesting that early developmental factors may exert their influence indirectly rather. In university populations, there are proximal contextual variables such as time pressure and autonomy demands; they may overpower long-term effects, which are protective of early life positive experiences.

However mental load did not induce any significant predictability in relation to academic procrastination after controlling for age. It also has a weak negative correlation with procrastination; its predictive value diminished in the model of regression, suggesting mental load independently cannot predict procrastination

unless there are deficits, maladaptive motivational beliefs, or in self-regulatory capacity, as proposed by Temporal Motivation Theory (Steel, 2007).

The low strength of this relationship could also be because of limited variance in the sample, as university students may have desensitization towards high cognitive demands, which limits differentiation between perceived mental load. Cognitive Load Theory validates this, as it suggests that baseline task demands are uniformly high; individual differences consequently become less predictive of behavioural outcomes (Sweller, 2011).

Even after controlling for perceived childhood experiences and mental load, age emerged as a significant predictor of academic procrastination. Contradicting the common assumption that procrastination should decrease with maturity, the positive link between age and procrastination in this study may be because of increasing out-of-university responsibilities such as the intrusion of financial trouble, marital ties, or career demands, which cause role conflict. This aligns with prior findings demonstrating that non -traditional university students often suffer from complex demands balancing work, family, and academics, which can affect time management behaviours like procrastination. (Garzón Umerenkova & Gil-Flores, 2017) . Thus, it is proposed that age may serve as a proxy for chronic cognitive load and not as developmental immaturity, offering an interpretation that is consistent with the present findings.

Interestingly, no significant gender differences were observed. This finding aligns with meta-analytic evidence indicating that gender differences in procrastination are usually small or negligible in adult samples (Steel & Ferrari, 2013). It is evident that academic procrastination is materialized by contextual and motivational sources and not by demographics themselves. A secondary observation is made that both genders experience similar role demands and cognitive burdens, hinting at changing trends in society.

The study may highlight the presence of defensive coping or minimization tendencies within university students, regarding retrospective reporting of childhood experiences. Emotional suppression or desirability bias may occur, as self-report is notorious for such expression, which explains the contradiction to the common belief that childhood negative experiences impact efficiency in career and education.

Additionally, the NASA-TLX presented only acceptable reliability in this sample, which may have weakened observed relationships. Further studies can employ subjective and objective methods, including indicators such as task complexity or other physiological markers related to cognitive burden. Despite lacking strong predictive effects towards some variables, this study addresses the importance of age-related cognitive demands. This study sets the grounds for further testing age-related stigma among university students.

Conclusion

This study investigated the relationship between perceived childhood experiences, mental load, and academic procrastination. This study helps in addressing the fact that age acts as a predictor of a student's academic procrastination. However, students who have had a good and positive childhood and less or no mental load do not necessarily perform better in their academic tasks, and vice versa. The literature and theoretical framework of this study help students and other people understand the importance of a positive childhood and low mental load, which eventually spreads awareness among people and future researchers.

Limitation

The sampling was done from one university campus, which can limit the generalizability of the results to a larger population. It uses self-reported data, which can be biased. Absence of longitudinal data limits the observation of changes that occur over time in procrastination habits because of varying mental load in academia and other factors, including domestic and professional life, and physical or mental health status. The results could also be affected by the state of mind when the participants filled in the survey. It could be due to various personal, domestic, and health-related factors.

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