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Sistematik Derleme/Systematic Review

The Effect of Mindfulness-Based Approaches on Work Stress in Nursing: A Systematic Review

Farkındalık Temelli Yaklaşımların Hemşirelerde İş Stresi Üzerine Etkisi: Sistematik Bir İnceleme

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ÖZET

Amaç: Bu çalışma, hemşirelere verilen farkındalık temelli eğitim programlarının mesleki stres üzerindeki etkilerini araştıran randomize kontrollü çalışmaların incelenmesi ve çalışmalardan elde edilen verilerin sistematik olarak değerlendirilmesi amacıyla yapıldı.

Yöntem: Farkındalık temelli eğitim programlarının hemşirelerde mesleki strese etkisini belirlemek amacıyla PubMed, Web of Science, Science Direct, Google Scholar, EBSCO host ve Cochrane veri tabanları tarandı. Arama İngilizce olarak, 3 anahtar kelime (hemşire, farkındalık, mesleki stres) kullanılarak yapıldı. Literatür taraması sonucunda 7.382 makaleye ulaşıldı ve 5 araştırma çalışmaya dahil edildi. Çalışmalar PRISMA kontrol listesi kullanılarak değerlendirildi. Literatür taraması sonucunda 380 katılımcının yer aldığı 5 araştırma çalışmaya dahil edildi.

Bulgular: Bu çalışmaya dahil edilen 5 çalışmanın içeriği incelendiğinde, eğitim sonrasında hemşirelerin farkındalık düzeylerinin arttığı, mesleki stres düzeylerinin azaldığı, iş tatminlerinin ve hasta bakım kalitelerinin arttığı dikkat çekmektedir. MBSR eğitiminin hemşirelerin depresyon ve kaygı düzeylerini azalttığı, farkındalık düzeylerinin ve uyku kalitelerinin artmasında önemli ölçüde rol oynadığı belirlendi. Ayrıca elde edilen verilerle farkındalık temelli stres eğitimi programının uyku sorunlarını ve yorgunluk düzeylerini de azalttığı tespit edildi.

Sonuç: İncelenen çalışmalar, farkındalık temelli stres azaltma programının hemşirelerde mesleki stresi düzeyini anlamlı derecede azalttığını göstermektedir. Bu nedenle hemşirelik hizmet içi eğitiminde MBSR programının kullanılması önerilebilir.

Anahtar Sözcükler: Farkındalık, hemşire, mesleki stresi

ABSTRACT

Purpose: This study was conducted to examine the randomized controlled studies investigating the effects of mindfulness-based training programs given to nurses on occupational stress and to systematically evaluate the data obtained from the studies.

Methods: In order to determine the effect of mindfulness-based training programs on occupational stress in nurses, PubMed, Web of Science, Science Direct, Google Scholar, EBSCO host and Cochrane data bases were searched. The search was in English and was conducted using 3 key words (nurse, mindfulness, occupational stress). As a result of the literature rewiew, 7.382 articles were reached and 5 studies were included in the study. Studies were evaluated using the PRISMA checklist. As a result of the literature review, 5 articles including 380 participants were included in there view.

Results: When the content of the 5 studies included in this study is examined, it is noteworthy that after the training, the awareness levels of nurses increased, their job stress levels decreased, their job satisfaction and patient care quality increased. It was determined that MBSR education reduced the depression and anxiety levels of nurses and played an important role in increasing their awareness levels and sleep quality significantly. In addition, with the data obtained, it was found that the mindfulness-based stress eduction program also reduced sleep problems and fatigue levels.

Conclusion: The studies examined showed that mindfulness-based stress reduction program greatly decreased occupational stress in nurses. So it can be recommended to use the MBSR program in nursing in-service training.

Keywords: Mindfulness, Nurses, Occupational Stress.

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INTRODUCTION

The most important problem of nurses in Turkey is the heavy workload due to insufficient employment, and the stress related to the nursing profession is an urgent issue that needs to be addressed (1,2). Nurses who work face-to-face with people due to their profession are negatively affected physically, mentally, socially and spiritually due to stress (3). Nurses are the group that encounters the patient who suffers the most and the longest time among healthcare professionals (4) and are expected to understand the fears and concerns of the patient and to provide psychosocial support within the scope of holistic care (5). It is very important for nurses, who are expected to provide quality health care, to have sufficient skills to cope with stress, both for themselves and for their patient's self-care (6).

One of the sources of stress in nurses is that they have too much workload. The workload is followed by shift work, low wages, the growing need for training regarding changing technology, and complex interpersonal communication and relationships (7,8). Burnout and compassion fatigue are primarily seen in nurses who are exposed to stress for a long time. These negative situations not only decrease the quality of patient care, but also lead to a decrease in the professional performance and quality of life of nurses and an increase in their intention to leave work. (9-11). Therefore, it is vital to determine perceived occupational stress in nurses and provide nurses with effective strategies to cope with stress.

In recent years, mindfulness-based stress reduction interventions have come to the fore in order to reduce occupational stress in nurses. Mindfulness is defined as "accepting the present moment by experiencing momentary experiences without being influenced by previous or future experiences and emotions". It is stated that mindfulness raises the level of awareness in the consciousness of the individual, removes the person from possible stress factors, and reduces the physiological and psychological consequences of stress (12). In other words, with mindfulness, awareness of the problems caused by stress is increased, allowing the person to quickly return to a state of balance. (13,14). Mindfulness helps individuals become aware of their negative thoughts and enables them to accept their stressful emotions and thoughts in accordance with the "here and now" principle. It is reported in the literature that mindfulness reduces anxiety, stress and depression by preventing physical and mental destruction in the individual (15,16). However, although studies on awareness training have increased recently, it seems that there are very few studies on coping with stressors for the nursing profession. Accordingly, this study aimed to systematically evaluate randomized controlled experimental studies examining the effects of mindfulness-based training on occupational stress in nurses.

METHODS

Mindfulness Based Stress Reduction (MBSR) is a standard and well-defined program on mindfulness and is widely used in randomized controlled experimental studies. Therefore, this systematic review focuses on randomized controlled studies on Mindfulness-Based Stress Reduction. The aim of the study is to investigate the effect of awareness-based stress reduction training on nurses' work-related stress levels. Does the mindfulness-based stress reduction training given to nurses in the study have a reducing effect on work stress? The answer to the question is being sought. For the systematic review, 7.382 studies published between 2006 and 2021 were accessed, and these academic studies were evaluated for quality using the PRISMA 2020 checklist (17). It was observed that the first randomized controlled study using the Mindfulness-Based Stress Reduction program was conducted in 2006, and the last study was conducted in 2021.

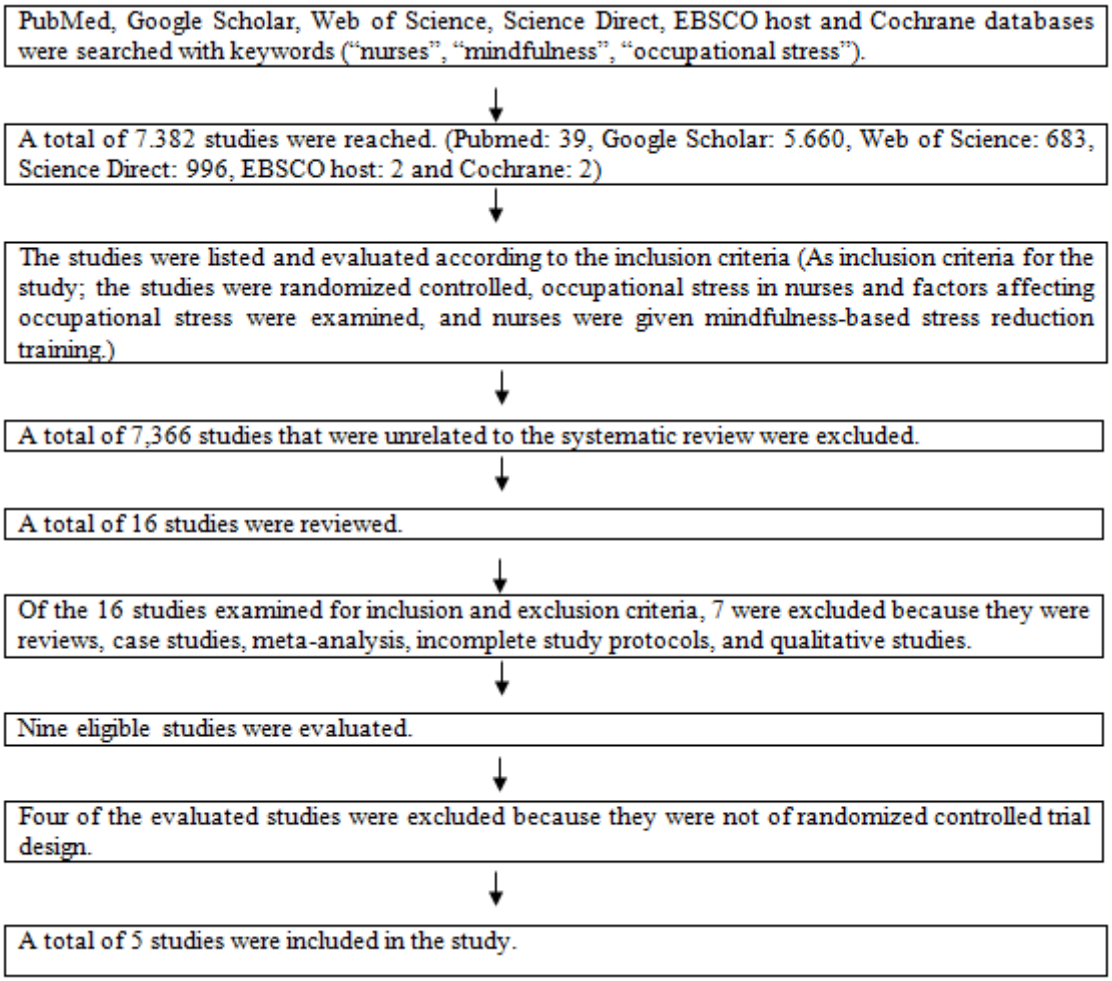
For this research, randomized controlled experimental studies evaluating the effect of the MBSR program on occupational stress in nurses were searched in Pubmed, Web of Science, Google Scholar, EBSCO host, Science Direct and Cochrane databases. Randomized controlled studies were included in the study due to the high level of evidence. The search was conducted in English using three keywords. The search was conducted in English using three keywords. The words "nurses", "mindfulness" and "occupational stress" were used as keywords. Abstracts and titles of all relevant studies identified by the electronic search were independently reviewed by two researchers. Since the research articles included in the study were obtained from accessible electronic databases and search engines, ethical permission was not required.

All clinical studies evaluating the effect of the MBSR program on nurses' occupational stress levels were involve in this study. The sample of the study consists of nurses working in any health institution. Only randomized controlled experimental studies evaluating the effect of the MBSR program were included in the study. As criteria for inclusion in the research; The studies were randomized controlled, occupational stress in nurses and factors affecting occupational stress were examined, and nurses were given mindfulness-based stress reduction training. Exclusion criteria for the study were that the study was not randomized controlled, occupational stress assessment was not performed, and scales affecting occupational stress were not used. Although the total number of articles reached in the research was 7.382, 5 articles that met the research criteria were included in the study.

As a result of the search, a total of 7.382 studies were found. The 7.382 studies (Pubmed: 39, Google Scholar: 5.660, Web of Science: 683, Science Direct: 996, EBSCO host: 2 and

Cochrane: 2) were firstly examined according to the titles, and a total of 7.366 studies unrelated to the research topic were excluded. The abstracts and full texts of the remaining 16 studies were scanned within the scope of the study's inclusion and exclusion criteria, and a total of 7 studies consisting of reviews, meta-analysis studies, case studies, incomplete study protocols, and qualitative studies were excluded, leaving only 9 studies. Four of the evaluated studies were excluded because they did not have a randomized controlled trial design. A total of 5 studies were found to meet the systematic review study criteria. The research steps of the systematic review are shown in the PRISMA flowchart in Figure 1. (17).

Figure 1. Process Steps



RESULTS

Considering the content of the 5 studies included in this study, it was observed that nurses' awareness levels increased after the training, their job stress levels decreased, their job satisfaction and patient care quality increased, their burnout levels increased, anxiety and

depression decreased, and their sleep quality increased. This systematic review included experimental studies conducted between 2006 and 2021. The sample of the studies included in the study consisted of nurses working in hospitals (n=380). When the sample number of the studies was examined, it was determined that the highest sample number was in the study by Lin et al. (2019) (n=110) and that the lowest sample number was in the study conducted by Mackenzie et al. (2006) (n=30). Two of the reviewed studies were conducted in China, one in Canada, one in the United States, and one in Iran. All of these studies were randomized controlled experimental studies, the interventions were carried out face to face and their effectiveness was evaluated with measurement tools that measure occupational stress. The intervention program used in the research is the MBSR program, which consists of breathing exercises, yoga, sitting and walking meditations, and body scanning techniques. No intervention was made to the control groups in the studies. It was observed that a wide range of stress-related variables, such as job stress, mindfulness levels, job satisfaction, burnout, fatigue, and anxiety, were examined as outcome variables. The Perceived Stress Scale (18, 19) was used in two studies and the Intrinsic Job Satisfaction subscale of the Job Satisfaction Scale (20) was used in one study to evaluate the job stress levels of nurses. Another study used the Gray-Taft and Anderson Standard Questionnaire of Job Stress (21), and the Nursing Stress Scale (16) was utilized in yet another study. Descriptive statistics for a total of 5 studies that met the criteria of the systematic review study are shown in Table 1 and Table 2.

In the study of Mackenzie et al. (2006) examining the effects of the MBSR program on professional satisfaction, burnout, relaxation tendency, life satisfaction and life orientation in nurses and nurse assistants, it was reported that after training there were significant differences between intervention and control groups by means of professional satisfaction levels. The Maslach Burnout Inventory, the Smith Relaxation States Inventory, the Job Satisfaction Scale-Intrinsic Job Satisfaction Subscale, The Life Satisfaction Scale, and the Life Orientation Scale were used in the study, and the duration of the program applied in the study was determined as 4 weeks. After the MBSR intervention, it was observed that the occupational stress of nurses and nurse assistants decreased significantly, and it was stated that stress-related problems could be prevented.

At the same time, it was determined that there were significant increases in the mindfulness levels of nurses. No difference was found in this process in nurses and nurse assistants in the control group. In the study, they stated that professional satisfaction and life satisfaction have a positive effect and this effect also has a reducing effect on work stress (20).

Table 1. Characteristics of the Included Studies

Research	Country	N	Experimental Group	Control Group	Educational Content	MeasuringTool
Mackenzie et al. (2006)	Canada	Experimental group:16 Control group:14	Original program MBSR	Usual care	30 minutes per week, 4 weeks, 1 session per week	- "Maslach Burnout Questionnaire,'' -'' Smith Relaxation Dispositions Inventory,'' -'' Intrinsic Job Satisfaction subscale from the Job Satisfaction Scale,'' - ''Satisfaction With Life Scale,'' - ''Orientation to Life Questionnaire"
Norouzinia et al. (2017)	Iranian	Experimental group:30 Control group:30	Original program MBSR	Usual care	1 hour per week, 8 weeks, 1 session per week	- ''Gray-Taftand Anderson Standard Questionnaire of JobStress,'' -''Maslach Burnout Questionnaire"
Yang et al. (2018)	Chinese	Experimental group:50 Control group:50	Original program MBSR	Usual care	1 hour per week, 8 weeks, 1 session per week	-''Symptom Checklist-90'' (SCL-90),'' -''Self-Rating Depression Scale (SDS),'' -''Self-Rating Anxiety Scale (SAS),'' - ''Nursing Stress Scale''
Lin et al. (2019)	Chinese	Experimental group:55 Control group:55	Original program MBSR	Usual care	2 hours per week, 8 weeks, 1 session per week Inaddition, practice at home for 20 minutes, 6 days a week	- "Perceived Stress Scale (PSS),'' -''Positive and Negative Affect Schedule (PANAS),'' -''Connor–Davidson Resilience Scale (CD-RISC),'' -''The McCloskey/Mueller Satisfaction Scale (MMSS)"
Hilcove et al. (2021)	United States of America	Experimental group:41 Control group:39	Original program MBSR	Usual care	6 weeks, 1 session per week	- "Perceived Stress Scale (PSS),'' -'' Maslach Burnout Questionnaire,'' - ''Vitality subscale of th eMedical Outcomes StudyShort Form–36,'' -'' Global Sleep Quality,'' - Mindfulness Awareness Survey,'' - ''Brief Serenity Scale"

Table 2. Findings of the Studies

Research	Sample/context	Results	Limitations
Mackenzie et al. (2006)	Working as a nurse and nurse assistant	It was observed that the nurses and nurse assistants in the intervention group significantly reduced their work stress, and it was stated that problems that may arise due to stress could be prevented. At the same time, it was determined that there were significant increases in the awareness levels of nurses.	Small sample size, short MBSR program
Norouzinia et al. (2017)	Working as a nurse	It has been found to be effective on work stress and burnout in nurses. After the training given to the intervention group, it was determined that there were significant decreases in the levels of work stress and burnout, and significant increases in the quality of patient care.	Small sample, failure to track program results
Yang et al. (2018)	Working as a psychiatric nurse	It was observed that the nurses in the intervention group had significant reductions in work stress after the training. It has also been shown to reduce anxiety and depression.	Choosing from a small and specific section
Lin et al. (2019)	Working as a nurse	After the training, the work stress of nurses in the intervention group decreased and their job satisfaction increased. At the same time, it has been observed that negative thoughts before training are replaced by positive thoughts and resilience increases.	Small sample size
Hilcove et al. (2021)	Working as a nurse	After the training, a significant decrease in the nurses' perceived work-related stress levels and a significant increase in their sleep quality and awareness levels were detected.	Small sample size

Norouzinia et al., in their study on nurses to determine the effect of MBSR on occupational stress and burnout. (2017) implemented mindfulness-based stress reduction training for nurses, which included mindfulness practices (body scan, mindfulness movements, walking and sitting meditation, and breathing awareness) and the use of mindfulness in their daily routines. The duration of the training was determined as 8 weeks, 1 day a week. In the aforementioned study, it was determined that nurses' occupational stress and burnout decreased significantly after the MBSR program. In the experimental study, it was determined that after the MBSR training applied to the intervention group, there was a significant increase in the quality of patient care along with the decrease in occupational stress. At the end of the study, they did not detect any difference in the control group (21).

Another study in which the MBSR intervention was applied to nurse was conducted by Yang et al. (2018). Researchers have examined the effects of MBSR on depression, anxiety, and occupational stress.The duration of the MBSR program applied in the study was determined as 8 weeks. They also used symptom the checklist-90 scale, the self-rating depression scale,the self-rating anxiety scale,and the nursing stress scale in order to evaluate the impact of the training program. In the study, it was observed that there was a significant decrease in the work stress levels of nurses in the intervention group who applied the MBSR program after the

training. It was also determined that the nurses' anxiety levels and depressive symptoms decreased after the training. There was no difference between pre-test and post-test measurements in the control group (16).

Lin et al. (2019) used the MBSR program in their research to determine the perceived stress, positive-negative thoughts, resilience and satisfaction levels of nurses. The duration of the MBSR program used was determined as 8 weeks, 2 hours per week. In this experimental study, it was determined that nurses in the intervention group had a significant decrease in their job stress levels and an increase in their job satisfaction after the training. At the same time, it was observed that the negative thoughts of nurses before the training were replaced by positive thoughts and their resilience increased. No differences were observed in the control group during the research period. (19).

Hilcove et al. (2021) applied a 6-week MBSR program to the intervention group in their randomized controlled experimental study with nurses. They used the perceived stress scale, the Maslach burnout inventory, the sleep quality scale, the mindfulness scale, the peace of mind scale, and the medical outcomes scale in order to measure the effects of the program. They found that there was a significant decrease in the perceived stress levels of nurses in the intervention group after the training. Similarly, it was observed that there was an improvement in sleep quality and awareness levels after the training. During this period, no difference was observed in the data of the control group. (18).

DISCUSSION

Nursing is a profession that involves a significant amount of stress, both from the work environment and from the patient and family who need care. In recent years, mindfulness-based interventions have been used to reduce the work-related stress of nurses. It is predicted that mindfulness-based interventions will reduce occupational stress by showing nurses a new way to cope with stress. (22). In this systematic review, randomized controlled experimental studies evaluating the effect of mindfulness-based interventions on occupational stress in nurses were examined. When the results of the study were examined in general, it was seen that mindfulness-based interventions significantly reduced occupational stress in almost all nurses.

The intervention administered to participants in the included studies was the original MBSR program. It was determined that the MBSR programs applied consisted of 8, 6 or 4 sessions once a week. One of the factors that may affect the effectiveness of interventions is the duration of training provided. The duration of training provided in the studies varies between

at least 30 minutes and 2 hours per week. It can be seen that there was an experimental group and a control group in all of the compiled studies. The general content of the programs applied to intervention groups consisted of techniques such as body scanning, meditation, psychoeducation and yoga. In some studies included in the review, session structures are given in detail. In addition, homework technique was applied to nurses in intervention groups, and stress coping training was applied to nurses in control groups (19). Based on these data, it can be said that mindfulness-based interventions consisting of 8 sessions and supported by homework are successful in reducing occupational stress. However, in the evaluated studies, it was not stated whether the differences in the content of the programs applied to intervention groups (additional sessions, homework, etc.) and the materials used during the intervention (video recording, guides, etc.) made a difference in the results after the intervention.

In most of the studies examined within the scope of the research, it is seen that the number of people in the sample was 60 or more. Only in the study of Mackenzie et al. (2006) the sample size was limited to 30 people. In experimental studies, sample size is of great importance in terms of generalizability. Compared to the population from which other studies were selected, the level of generalizability is quite high. On the other hand, in most of the studies, the sample consisted of nurses. There appears to be a change in the samples of only two studies. One of them was the study conducted by Yang et al. (2018), and it is seen that only nurses working in the psychiatry service were included in the sample of this study, which examined the effect of the MBSR-based approach on occupational stress and mental health. Similarly, in the study conducted by Mackenzie et al. (2006), nurse assistants were included in the sample as well as nurses. When these studies were evaluated, it was determined that the presence of nurse assistants or the selection of special care nurses in the sample group did not cause any difference in the effect of MBSR on occupational stress. This can be explained by the fact that nurse assistants are also health professional and are exposed to the same stressors.

In the randomized controlled experimental studies examined, it is seen that different scales are used to evaluate the occupational stress of nurses.

Lin et al. (2019) and Hilcove et al. (2021) used the Perceived Stress Scale in their study, while Yang et al. (2018) used the Nursing Stress Scale, that Norouzinia et al. (2017) used the Gray-Taft and Anderson Standard Questionnaire of Job Stress, and that Mackenzie et al. (2006) preferred to use the Intrinsic Job Satisfaction subscale from the Job Satisfaction Scale. Although different scales were used to determine occupational stress in these studies, it was observed that the MBSR program reduced occupational stress in nurses at a statistically significant level.

In the two randomized controlled experimental studies examined in the present study, it was observed that there was a significant increase in the mindfulness levels of nurses after the intervention (18, 20). Increasing mindfulness of nurses in their working environment contributes to reducing anxiety and stress levels, thus increasing the quality of patient care. It has been determined that the MBSR program applied in other studies increases nurses' job satisfaction, endurance and sleep quality, and significantly reduces their anxiety, depression and burnout levels. In addition, it is noteworthy that the studies were mainly carried out in the last 5 years, which shows that MBSR interventions have become increasingly widespread in the field of nursing in recent years.

In all studies reviewed, no follow-up was performed after the training. It is of great importance to follow up and maintain the MBSR training provided. In this regard, it can be stated that after MBSR training, it is necessary to meet with nurses at intervals and hold reinforcement sessions in order for the effect of the program to be permanent.

This systematic review was conducted to determine the effect of MBSR interventions on occupational stress in nurses. The studies reviewed showed that mindfulness-based stress reduction programs significantly reduced occupational stress in nurses. After the training provided, it was observed that the quality of patient care increased along with the decrease in work stress among nurses. It was also determined that MBSR interventions reduced nurses' anxiety and depression levels and played an important role in significantly increasing their awareness levels and sleep quality.

All studies evaluated had a randomized controlled experimental design. In all studies examined, the program was found to be effective in reducing occupational stress, and based on this, the MBSR program can be recommended for use in nursing in-service training. Similarly, it is thought that including the MBSR program in the nursing education curriculum will contribute to increasing the mindfulness and resilience of nurse candidates, to step into the profession competently, and to cope with occupational stress.

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