**////Title: The Unease Modulation Model: Revolutionising Health, Stress Management and Public Policy**

**////Stand-first**: Stress is inherently prevalent in our lives and can have seriously deleterious impacts on individual health and well-being, as well as society more broadly. Dr Joseph Arpaia a psychiatrist in private practice in the USA, and colleague Dr Judith P. Andersen of the University of Toronto Mississauga in Canada, have proposed a new theoretical account of stress that has the potential to revolutionise clinical care in the fields of psychiatry and addiction, and improve well-being on a global level.

**////Body text:**

We all experience stress to some degree, but for some, this can be both ongoing and significant, bringing with it severely deleterious impacts on health. Conditions such as cardiovascular disease, depression and addiction are worsened by stress, and interpersonal relationships can also suffer. Stress also has negative impacts on society more broadly, for example, through the occupational burnout of staff in the workplace.

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Dr Joseph Arpaia, a private practitioner in Oregon, USA, has more than 20 years of experience working in psychiatry and addiction. He has developed and refined a theoretical model that builds on established scientific principles to inform his clinical practice and improve patient outcomes.

Current models of stress focus on underlying biochemical mechanisms and unfortunately, are too far removed from our experience to be of real-world clinical value. Dr Arpaia saw the need for a theoretical model that is both precise enough to direct interventions effectively and simple enough to be used without specialised training. He has recently published an account of his dedicated work with colleague Dr Judith P. Andersen of the University of Toronto Mississauga in Canada.

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The Unease Modulation Model proposes that stress can be conceptualised as having five components that are either internal or external. There are three internal components: sympathetic nervous system activation, parasympathetic nervous system activation, and reserves. Symptoms of increased sympathetic activation reflect the additional exertion required for us to respond to our environment, and include rapid heart rate, shallow breathing, sweating and tremors. Over time, this exertion depletes our reserves of energy, which then need to be recharged. The physical symptoms associated with recharging include slower, deeper breathing and lower heart rate as part of parasympathetic nervous system activation.

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Dr Arpaia and Dr Andersen distinguish between long and short-term reserves, noting that when short-term reserves are depleted, we draw on long-term reserves causing fatigue. When we rest, we recharge short-term reserves and fatigue drops, but we may not fully recharge long-term reserves as this process take longer. Thus, over time, our long-term reserves may also become depleted, resulting in a pervasive sense of fatigue often associated with ‘burnout’.

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There are two core external influences proposed in the model. The first is difficulty, which reflects the balance between the demands we face and the resources we have to meet these demands. Difficulty is low when we perceive that the demands can be easily met but high when the demands exceed available resources. Demands and their corresponding resources can be grouped into the broad categories of physical, cognitive, social, financial and temporal.

The second external influence is that of unease, accompanied by marked increases in sympathetic activation. Unease often goes hand in hand with difficulty but can also act independently. Dr Arpaia and Dr Andersen further explain that unease occurs when we are aware of a memory, a present experience, or an expectation in which either ‘something we desire is absent or something aversive is present’. Importantly, unease is an idiosyncratic experience – what induces unease in one individual can have the opposite effect in another.

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Unease acts at the critical hub of the model, strongly affecting the other components in the model while also being strongly affected by these same components. In particular, the interactions among unease, sympathetic activation, parasympathetic activation, and reserves can create reinforcing feedback loops that can lead to pathological states. For example, variations in the sources of unease, difficulty, and the resultant behaviour give rise to personality disorders, addictions and PTSD.

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The Unease Modulation Model was developed and refined in a clinical setting, with a specific focus on individualising treatment interventions for patients. Emphasising how the interactions among unease, sympathetic activation and parasympathetic activation are mutually reinforcing and underpin problematic feedback loops associated with clinical symptomatology, Dr Arpaia and Dr Andersen consider various psychotherapeutic approaches that can be used to alleviate distress.

For example, the practice of relaxation, mindfulness, and similar techniques can reduce unease, reduce sympathetic activation and increase parasympathetic activation – changes that are associated with improved health. According to the Unease Modulation Model, these changes will also increase reserves, and increased reserves will reduce levels of sympathetic activation.

The model also makes important predictions regarding metacognition, which is the awareness and understanding of one’s own thought processes. Here, skills such as emotional regulation and cognitive reappraisal are critical in allowing individuals to manage the assessment of experience to identify demands and resources correctly, as well as to regulate this appraisal such that unease remains manageable. A key point in the model is that people must train specific skills to increase parasympathetic activation when unease is high in order to use emotional regulation and cognitive skills effectively.

From the perspective of the Unease Modulation Model, the established clinical techniques of desensitisation and reconsolidation (for example, through eye-movement desensitisation and reprocessing) can reduce the unease associated with an experience. This experience may be a memory, a current situation, or an imagined future, and Dr Arpaia and Dr Andersen describe how this can be achieved.

As such, the Unease Modulation Model provides clinicians with a useful framework in which to understand and apply techniques from psychotherapeutic interventions. For researchers, the model may fruitfully be used to test the efficacy of interventions, including those in development.

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A major attraction of the Unease Modulation Model is its wide-ranging application. Although developed within a clinical context with utility ranging from anxiety disorders to addiction to chronic pain, the potential for application does not end there. Recent research has demonstrated how the Unease Modulation Model can successfully inform interventions to reduce stress and improve well-being in non-clinical populations facing the consequences of stress, such as police personnel. Furthermore, Dr Arpaia’s model provides an accessible account of stress that can be used even by laypeople to make positive and tangible changes in their lives.

Dr Arpaia and Dr Andersen conclude their paper with a consideration of the social and organisational implications of the Unease Modulation Model, providing illustrations from health advertising and understanding dysfunctional relationships in our personal and occupational lives. Notably, from a public health perspective, the model predicts that social change and governmental interventions are required to reduce environmental difficulties and external sources of unease if effective long-term improvements in health are to be achieved.

This SciPod is a summary of the paper ‘[The Unease Modulation Model: An Experiential Model of Stress With Implications for Health, Stress Management, and Public Policy](https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00379/full)’, published in the open access journal Frontiers in Psychiatry. DOI: https://doi.org/10.3389/fpsyt.2019.00379

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