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by R R

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Question one

In medicine, psychoneuroimmunology represents a comparatively novel area of study whose description of the basic mechanisms entails looking at the interactions between the human immune system and central nervous system. It is the convincing explanation of how these two systems communicate that informs the clear understanding of psychoneuroimmunology's underlying mechanisms. Although researchers were conscious that the human central nervous system and immune system could interact, they only recently began to comprehend how the duo do it besides its implication or inference to human health.

The central nervous system entails the brain together with spinal cord nerves, whereas cells and organs responsible for defending the body against infection make up the immune system. The trivial proteins and molecules produced by the two systems exhibit the capability to act as messengers between the two systems (Alessi & Bennett, 2020). Conferring to the immune system, it utilizes the messengers known as cytokines to communicate with the central nervous system. On the flip side, the latter system uses neurotransmitters as well as hormones.

The interaction between the immune system, the nervous system, and psychological processes in psychoneuroimmunology study informs how researchers could understand how psychological aspects accompanying depression and stress can impact the human immune system through the central nervous system. Regarding stress, it affects the immune system in many ways when cytokines are released in response to psychological and physical stress (Alessi & Bennett, 2020). Cytokines are small proteins produced by the immune system cells, and the pro-inflammatory cytokines are the ones that are commonly stimulated by stress. The body releases the latter form of cytokines under normal circumstances in response to an injury or

infection—the above production helps repair body tissues or extinguish germs. Likewise, when one is emotionally or physically stressed, certain hormones counting adrenaline, are released by the body. The hormones help bind to explicit receptors that signal for the production of the pro-inflammatory cytokines.

Question Two

The psychoneuroimmunology field has shown that the human immune system is not independent and entirely self-regulating (Greely, 2021). On the other hand, the brain continually experiences influences stemming from immune signaling. Thus, the central nervous system as well as the immune system seem to interact with intricate and complex signaling in addition to feedback loops in a bid to protect the body and for the essence of homeostasis of the entire body. Despite researchers being presented with ample opportunities to explore neurohormonal and the immune system cells' neurotransmitter signaling besides neurons cytokine signaling, it is important to revert to the host. The host comprises complex emotion, cognition and other central nervous system functions that cannot be understood by studying them in isolation. To help empower the community and individuals to live better lives, it is crucial to create health programs that would lead to healthy development. The development of these programs in schools could guarantee the latter objective by enhancing the communities' and individuals' emotional, mental, and physical wellbeing. This is because health education development programs help increase the community's knowledge, which helps influence their attitudes concerning exercising care for their health.

Moreover, since psychoneuroimmunology entails controlling complex variables, thus discouraging using a holistic approach in its study, community schools depict the much-needed periphery that would present the opportunity to comprehend the influence of behavior on

neurotransmitters as well as neurohormonal responses (Greely, 2021). Hence, it facilitates the synthesis of a more complete understanding of biological signaling complexities amongst the neurohormones, cytokines, and neurotransmitters. Therefore, since the opposite of the above advantage side of health education programs in schools can jeopardize community health, it is crucial to change the public policy to account for psychoneuroimmunology mechanisms.

References

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