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COUNSELING ON DEMENTIA, STRESS, AND STRESS REGULATION AMONG MALE PRISON INMATES IN PALU'S CITY

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Abstract: *Detention has become increasingly isolated since the Corona Virus Diseases 2019 (COVID-19) pandemic, as policies to prevent COVID-19 transmission have emerged. This may cause increased stress among inmates. Some research evidence links stress to poor health, memory loss, Alzheimer's, and dementia in general. Intrinsic and extrinsic stress factors are likely to persist as long as inmates are incarcerated (prison). Thus, stress, dementia, and stress regulation counseling and training are required.We educate inmates at the Palu male prison about dementia recognition, prevention, stress, and stress regulation.*

INTRODUCTION

President Joko Widodo has emphasized the importance of developing superior human resources. Detainees, also known as inmates in Correctional Institutions, are part of Indonesia's human resources. In 2019, there were 269,846 people in Correctional Institutions and Detention Centers with majority of detainees are of working age.. This shows a large number of human resources assisting citizens. as the majority of detainees are of working age. The government regulation of Republic Indonesia number 31 of 1999 the Indonesian government's concern for Indonesian citizens who are prisoners and have rights and obligations as citizens.[1]

Detention can cause significant problems and stressors for inmates, one of which is anxiety. Anxiety among inmates can lead to psychological and emotional stress, which can lead to the emergence of violent behavior among inmates within the prison environment.[2] Many studies have shown that there is a high level of anxiety in this environment. One reason is that prisoners feel estranged from their families and loved ones, and their freedom is severely restricted. Imprisonment is a type of punishment given to lawbreakers. Prisons have strict rules, with nearly identical lifestyle regulations every day, which causes boredom.[3] Some research reported that depression, stress, and anxiety were more prevalent in the prison population than in the general population.[4]

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Detention populations have become increasingly isolated since the Corona Virus Diseases 2019 (COVID-19) pandemic, as a result of policies that eliminate or severely restrict visitation.[5] In practice, this means inmates rarely see their families. Concerns about the conditions and environment outside the prison also increase anxiety and worry.[6]

Stress is any external or internal stimulus that causes a biological response. The body responds to these stimuli with stress.[7] Stress triggers varying hemostatic changes, which can lead to death. Several studies show that stress alters the hippocampus, which is involved in memory processing. Long-term glucocorticoid therapy has been shown to have negative effects on learning and memory in rats. Chronic stress raises plasma cortisol levels, reducing branching dendrites in neurons.[8] Neurogenesis is reduced in hippocampal tissue due to altered terminal structure. Glucocorticoid stress hormones can alter neuron metabolism, causing hippocampal atrophy and memory loss.[9] Longitudinal cohort studies have examined the link between stress, MCI, and dementia. Psychological stress appears to be linked to MCI and/or dementia.[10] Several studies have looked into the link between stress and Alzheimer's. Stress is one of the clinical factors that play a role in the early stages of Alzheimer's dementia. Chronic anxiety is linked to an increased risk of Alzheimer's disease. Some of the research evidence presented suggests that there is a link between stress and health problems such as memory loss, Alzheimer's disease, and diabetes.

METHODS

Prior to conducting the education activity, the community service team coordinated with the Palu Penitentiary in Central Sulawesi to ensure that the counseling topic was both significant and pertinent to the needs. According to the survey results, the community's knowledge of dementia, stress, and how to manage stress is still quite limited. As a result, dementia-related material stress and its management must be presented. This activity is conducted face-to-face, with distance restrictions in accordance with health protocols. Each counseling topic is followed by a question and answer session to ensure that the participants understand the material.

RESULT

On Tuesday, May 25, 2021, the counseling session was titled "Dementia, Stress, and Stress Regulation Counseling." The first session was opened by the head of the Faculty of Medicine's service team, dr. Fitriah Handayani, Sp.N., M.Kes and remarks by the Palu City Penitentiary's head. Following that, Dr. Muh. Nur Ikhsan Liwang, Sp.PD, a lecturer at Tadulako University's Faculty of Medicine from the Department of Internal Medicine, presented the first material on "Hypertension and Diabetes Mellitus as Causes of Dementia." The presentation was immediately followed by a question and answer session. The following session featured a presentation on "Stress and Stress Regulation" by Meilisa Silviana Patodo, S.Psi., MA, a lecturer at Tadulako University's Faculty of Medicine's Department of Psychology.

The following presentation, "Maintaining Mental Health and Copying Methods," was given by Jane Mariem Monepa, S.Psi., M.Psi, a psychologist, and was followed by a question and answer session. The counseling session concluded with feedback from participants regarding their perceptions of the benefits of the counseling provided, as well as whether the extension activity was implemented with adequate facilities, materials, and time allocation

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for each material session. According to the survey results, all participants expressed satisfaction with the counseling provided by the service team and expressed hope for the next outreach activity with a different theme. Service activities proceed without significant technical glitches and are completed on time. The final session concluded with a closing prayer and a group photo of the participants, the institution's director, and the entire service team.

DISCUSSION

Previous research has shown the impact of stress on memory. Stress has been shown to cause functional and structural changes in the hippocampus atrophy, brain atrophy, and neurogenesis disorders. Chronic stress reduces the number of dendritic branches and neurons and decreases synaptic terminal structure. Glucocorticoids can cause these changes by altering neuronal metabolism, increasing hippocampus cell sensitivity to stimulatory amino acids, or increasing extracellular glutamate level. Stress hormones can cause memory loss. Stress can cause reversible loss of spatial memory due to hippocampus atrophy in animals. Long-term high glucocorticosteroid plasma concentrations can cause hippocampus atrophy and memory loss.[10]

Also, people with Cushing's syndrome (higher glucocorticoid secretion) or who take high doses of exogenous synthetic anti-inflammatory drugs have hippocampus atrophy and memory problems. MRI scans of Post Traumatic Stress Disorder (PTSD) patients' brains revealed reduced hippocampus volume and neurophysiologic effects such as weak verbal memory. In humans, even common therapeutic doses of glucocorticoids and dexamethasone have been shown to impair explicit memory, increased plasma cortisol levels after prolonged stress reduce memory, while decreased plasma cortisol levels improve memory. Memory under stress is affected by two factors. In the basolateral amygdala, noradrenaline creates emotional memories. Second, corticosteroids help this process. However, early corticosteroid release inhibits the amygdala and its associated behaviors. These two hormones work together to create a memory response.[11]

Dementia is a progressive cognitive decline that impairs daily living and social activities. Dementia is caused by damage to the brain's nerve cells and connections between them. There are several types of dementia based on the changes that occur, including: Alzheimer's illness The most prevalent form of dementia is Alzheimer's disease (AD). In numerous experimental settings, stress accelerates the pathogenesis of AD. In wildtype mice and rats, stress increases the expression of Amyloid Precursor Protein (APP) and the production of A peptide. In mice with humanized FAD mutations in APP, stress increases the production of A and its deposition into amyloid plaques, the pathological hallmark of Alzheimer's disease (AD). [12]

This has been demonstrated with both acute and chronic stressors ranging in intensity from mild to severe. Within one hour of restraint stress, interstitial A levels increase. Chronic mild/variable stress, chronic mild social stress, chronic confinement/immobilization stress, and early life stress are all examples of chronic mild/variable stress. Stress accelerates cognitive decline in model animals of Alzheimer's disease. Increase anxiety in young animals results in increased CSF A levels for up to 12 months and accelerates the formation of plaques, a process that begins months to years after the stress was applied. Stress exacerbates neurofibrillary tangles composed of hyperphosphorylated Tau protein, the defining

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intracellular pathology associated with neuronal death in Alzheimer's disease. Stress elevates the level of hyperphosphorylated Tau. In mice with AD-associated Tau mutations, stress-induced increases in hyperphosphorylated Tau result in the formation of neurofibrillary tangles and neurodegeneration. [12]

Health can be defined broadly as a state of complete well-being (perfection) on all levels, including physical, mental, and social, rather than simply being free of disease or weakness. Meanwhile, mental health is a subset of physical health that refers to the state of a person's emotions, heart, and mind, whether positive or negative. Maintaining mental health is critical, as an unhealthy mental state can make a person more prone to becoming involved in problems/conflicts and having difficulty finding adaptive solutions. Because a person's mental and physical health are interdependent, a person in poor physical health is more prone to mental health problems. Mental health problems can manifest physically as muscle tension, high blood pressure, headaches, and stomachaches, among others.

Education about stress, regulation stress, and demenetia is expected to increase the knowledge among inmate male in Palu, enabling them to maintain mental health, manage stress, and control emotions while serving a sentence in prison, thereby avoiding vicarious stress, which increases the risk of brain atrophy. Eventually, this will hasten the onset of dementia.

CONCLUSION

Psychological stress experienced by inmates in correctional institutions is greater than that experienced by the general population, and when combined with strict rules and regulation of routine life patterns that are nearly identical every day, a vicious cycle of stress can occur. Stimulating the release of glucocorticosteroid stress hormones continues to occur, impairing the cellular metabolism of neurons at risk of hippocampal atrophy and accelerating the onset of dementia. Education about dementia and its risk factors associated with stress is expected to increase participants' awareness of their own stress and dementia symptoms. It is intended that participants can immediately self-report to related parties if they notice signs of stress or dementia in themselves. Thus, early and comprehensive management of these conditions is possible.

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HALAMAN INI SENGAJA DIKOSONGKAN