



Wellbeing begins in Our MINDS

MONTHLY NEWSLETTER ON PSYCHIATRY FOR DOCTORS & MEDICAL STUDENTS



## EDITORIAL

### *Is the medical profession waning its allure?*

The unprecedented COVID-19 pandemic put colossal pressure on the existing health care system of the country-massive cost paid by thousands of lives in a matter of weeks. The empty roads scream with sirens of an ambulances, chilling the spine with fear of death. Add to this, a tussle over corpses to find a place so as to be laid to rest in peace. The ruthless pandemic has robbed many families of their loved ones; countless bereave, lakhs of medical bills and thousands of stray children.

The much-respected medical science has been scorned upon; perhaps doctors in situations have felt helpless seeing patients desperately gasping for breath! The tormenting circumstances have taken a heavy toll on the mental health of doctors too. On the other side, medical undergraduates who yet to join the league witness mockery, mistrust, and violence against doctors. The much-glorified profession is perhaps losing its glory due to mounting mistrust for the profession-resulting a declining preference to choose the medical discipline by both students and parents. This elephant in the room warrants to be addressed aggressively and systematically both at a political and social level.

**Dr Ajay Kumar**

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### Down

- 1. ABSOLUTE NEUTROPHIL COUNT
- 3. PREPARATION
- 4. PANIC DISORDER
- 5. COUNTERTRANSFERENCE

## Contribution

### “THE FALL HAS BEGUN”

There I stood, on the tallest building  
Buried in silence, I could speak to the wind  
Busy men and women walk the streets of Manhattan  
But from where I stood, I was far too distant.

No happy faces bring joy to my soul  
No cheering crowd mask my sorrows  
I fought my battles, called it a phase  
Cried out for help but none came my way.

Sooner or later I had to succumb  
To this feeling beyond words, a void I cannot fill  
Where dusk till dawn seems to be a life long  
And each passing moment not worth reliving

A seed that cannot grow, a flower that cannot bloom  
What purpose do I serve in this world so un-known  
It's a vicious cycle my friend, whose fault is it then  
To these social norms, Alas! I do not belong.

A little compassion, a little diligence  
A few words of courage, a moment of kindness  
That's all I ask for, that's all it takes  
But you choose trending hashtags and Instagram days

So here I stand on the tallest building  
Now not so tall as the fall has begun  
In search of solitude as I hit the floor  
A journey I hope you folks never endure.



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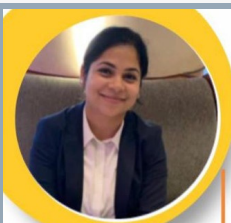
# DOWN THE MEMORY LANE

## Case conference presentation - *A learning experience*

During our post-graduation days, we all had to present certain number of cases in our weekly academic teaching programme. When my turn came, I was given a diagnosed case of Bipolar Affective Disorder who was in depressive episode at that time. In teaching apart from presenting case history, physical examination and investigation findings; we also had to do mental status examination in front of all to show our interviewing skills which were critically examined by senior teachers. Being a second-year junior resident, I had worked hard on that case supervised by my mentor. Now the day came, after the case presentation I called the patient in the conference room, took consent and started interviewing him. After few minutes of starting the conversation, the scene changed, patient started seeing here and there, neither making eye to eye contact nor answering my questions, even not able to focus what I was asking. I was nervous and shivering, sitting on stage in front of everyone, having no clue of what to do next. This goes on for another 1-2 minutes, I tried to collect all my focus and continued asking general questions to establish rapport. Soon these efforts showed response and he started replying to my questions related to Psychopathology. I was able to show third person auditory hallucinations and the diagnosis was reviewed on stage along with the treatment plan. This experience motivated me to sharpen my observation and interviewing skills which are the most precious weapon in the armamentarium of a psychiatrist. The presentation was appreciated by all the teachers. It was also a learning that in psychiatry Psychopathology, presentation can change at any time hence having presence of mind and good interviewing skills are essential for every learner. Perhaps on personal front this learning also helped me to restrengthen my belief of having patience in any difficult situation and mantra is to take a step back, analyse, rethink and act.

### A thank you note

While I was an International Training fellow in UK and doing community Psychiatry rotation, I had an interesting case of emotionally unstable personality disorder. This was a typical case with all the classical features of feeling of abandonment, emptiness, self-harm to name a few. Every time I had an appointment with this patient; she used to present same complaints and demanded early appointments with reports of no or minimal improvement. I was wondering how to manage this case as there was no improvement subjectively despite being on a lot of medications including mood stabilisers and antidepressants. Although objectively I can sense definite improvement in her mood and reduction in frequency of self-harm episodes. In next few appointments we discussed about other potential options of helping her including other medications and psychotherapy. But she refused to consider those, stating that she had received psychotherapy earlier and find it of no use. Around this time since I was about to reach end of my placement, I thought of informing her ahead of time so that it will not reinforce her feeling of abandonment. Honestly speaking I had also developed countertransference towards this patient and wanted to handover the case. To my surprise in our last appointment, she gave me a thank you note and showed her gratitude towards me for listening to her every time and not giving up on her which had happened earlier. This left me in guilt and I started questing my feeling of countertransference. Perhaps this was a learning in disguise that every patient wants an empathetic ear to listen to his or her problems independent of diagnosis and outcome



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# INVITED ARTICLE

## COVID 19 & THE BRAIN

The infection COVID-19 caused by the SARS-CoV-2 virus was declared as a pandemic on 11 March 2020. The spread via droplet and small airborne particles by even asymptomatic individuals has largely been responsible for the scale of the pandemic. Beyond the common pulmonary manifestations, the virus is capable of multisystem involvement. COVID-19, being a neurotropic infection, also involves the brain. It is in this context that the occurrence of mental illnesses in vulnerable population must be viewed.

### Pathophysiology & Inflammatory Responses

On gaining entry into the body, the virus reacts with the immune system in four major ways :

1. Viral replication in innate immune cells: occurs in the cytoplasm with RNase & replication organelles helping in evading innate response.
2. Dysregulated immune response: innate cells synthesize & release cytokines, increased levels of which (E.g. IL6, TNF $\alpha$ ) correlate with symptom severity.
3. Cytokine storm: it is responsible for the development of ARDS & MODS- with CNS involvement as one of the manifestations.
4. Antibody- mediated response: by activation of specific immune responses.

### Possible Routes of Neural Spread

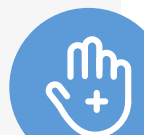
Apart from the inflammatory response affecting the brain, the virus can gain direct access to the CNS. Viral binding occurs to ACE-2 receptor on respiratory & GI epithelium following which neural spread is seen through hematogenous route or through the olfactory bulb. Once within neurons transmission is seen in both anterograde & retrograde directions. Further evidence is provided by the involvement of nucleus of solitary fascicle in brainstem which affects respiratory drive.

### Neuropsychiatric Manifestations

Among infected individuals, 36.4% were symptomatic with central, peripheral/ musculoskeletal or psychological manifestations, having an acute or chronic presentation.

#### Acute Manifestations:

- **Delirium & confusional states:** in elderly, those with comorbidities or premorbid cognitive decline and associated with increased Pulmonary Severity Index (PSI). Present with unique features such as alogia, abulia & rigidity. Prolonged delirium was seen with hypoxia, cytokine storm or use of HCQ.
- **Dysfunction** of olfaction & taste sensation: due to involvement of olfactory lining (ACE2 receptor). It is not only a biomarker for COVID-19 infection but is also an early marker for neurological involvement.
- **Acute Psychosis:** exacerbations have been reported to occur in Schizophrenia patients, despite compliance with medication.





- **Encephalitis & Encephalopathies:** seen as drowsiness, behavioral disturbances, catatonic states or movement disorders. Imaging may show B/L hyperintense mesial temporal lobes. It is a consequence of cytokine storm. Individuals with pre-existing cognitive deficits or chronic psychiatric illness are at risk of developing long term sequelae.
- **Acute cerebrovascular events:** ischaemic strokes are more common especially in the context of old age, low platelets & high D-dimer. Via ACE2 receptor, the virus causes hypertension & a hyper-coagulable state. Additionally the SARS-CoV-2 spike protein has a neuro-inflammatory role causing endothelial dysfunction & blood stasis.

### Chronic Manifestations

- **Neuromuscular disorders:** such as myopathy, neuropathy, GBS, brainstem encephalitis etc. It can also worsen symptoms of Multiple Sclerosis. Demyelination occurs due to hypoxia, direct injury, inflammation & MHC mediated CMI.
- **Chronic psychiatric conditions:** can worsen pre-existing mood disorders. There is increased depression, anxiety, adjustment disorder, acute stress reaction, somatization & OCD. PTSD tends to have a chronic & complex course. Whether it is a consequence of psychosocial stressors or direct effect on brain is not clear & requires further study. Risk groups include the quarantined, patient's caregivers, health care workers etc.
- **Neurodegenerative disorders:** basal ganglia involvement seen in mice suggests risk of development of parkinson like features.
- **Epilepsy:** can be of new onset or reactivation due to encephalopathy or cerebral edema. Triggers include psychological stress, poor drug compliance, drug interactions of Remdesivir, Lopinavir etc. with AEDs.

### Possible Pathogenesis of these Disorders:

Microglia undergo aggravated activation which is out of proportion to the severity of infection. This along with disruptions of blood brain barrier leads to increased cytokine levels in CNS. Consequent oxidative damage causes disruptions in neurotransmitter signaling. This is in line with the findings of various studies linking pro-inflammatory states and psychiatric disease.

### Consideration in Specific Disorders

1. **Psychotic disorders:** Disordered tryptophan- kynurenine metabolism (affects serotonin & Glutamate signaling), in the context of a pro-inflammatory state, leads to disrupted regional dopamine levels as seen in animal models. Antipsychotics tend to also modulate the inflammatory response contributing to clinical response.
2. **Mood Disorders (MDD):** Inflammation induced changes in rats lead to disruptions in Serotonin system in the hippocampus via the tryptophan-kynurenine system. Additionally oxidative changes in PFC, striatum & changes in NO-cGMP signaling have been implicated. Some antidepressants, Eg. Fluvoxamine, Ketamine, have anti-inflammatory action leading to added efficacy.
3. **Bipolar disorder:** Neuro-inflammation plays a critical role in disease course with associations suggested with manic symptoms in rats. Drugs in BPAD have been found to have both pro- inflammatory (Li, Valproate) & anti-inflammatory role (Aspirin & NSAIDs, CBZ, Lamotrigene, NAC, GSK3 inhibitors).
4. **Anxiety related disorders:** Chronic inflammation disrupts Glutamate & GABA systems causing disinhibition of amygdala causing anxiety. Additionally oxidative stress & NMDA-NO-cGMP pathway mediated neuronal toxicity, hippocampal degeneration have been suggested. Agomelatine & SSRIs have shown anti-inflammatory actions.



## SARS-CoV-2-induced Inflammation & Psychiatric Illness

Without immune competent cells, the brain acts as a viral reservoir. Viral infections (Influenza, VZV, HSV, HIV, and HCV) have been linked to increased depression, anxiety & OCD. Maternal influenza has associations with schizophrenia & BPAD.

In the pandemic, a three time increase in prevalence of depression has been reported and psychiatric patients had increased risk for viral illness. A three-way interaction among inflammation, COVID 19 & psychiatric illness and psychotropics has been suggested with immune dysregulation playing a central role. Various psychotropics have been found to exert dual action on psychiatric illness & inflammatory response. Mirtazepine by blocking  $\alpha$ 2A-adenoreceptor modulates sympathetic stress with potential role in treating ARDS & depression in COVID 19. Similar role suggested for Sildenafil (PDE5 inhibitor) via modulation of cGMP pathway. Antipsychotics were found to Increase pneumonia via anti-inflammatory actions while Flivoxamine, owing to its structural properties reduced viral penetration & replication in host cells.

Conversely drugs used to treat COVID 19, such as antivirals (by direct neuronal injury & oxidative damage) & azithromycin (by interacting with psychotropics) lead to adverse psychiatric outcomes.

## Adjunctive Psychotropic Treatments in COVID-19

Various drugs have been suggested such as Agomelatine, Clonidine, Lithium, SSRIs etc.

## Psychosocial & Mental Health Issues

The pandemic has created many specific stressors such as confinement, personal & financial losses, limited access to health services etc. The psychological sequelae have been varied such as stress, irritability, anger, frustration, depression, stigma, etc. Therefore patients must be assessed for COVID-19 related stressors, secondary adversities, the psychosocial effects & indicators of vulnerability. Special attention must be given to distress in children & suicidal ideation.

## Risk Assessment

This includes evaluating the 3 contributing factors namely- COVID 19, psychiatric illness & psychotropic medication following which the patients at highest risk are identified. Monitoring such patients for biomarker levels enables effective adjustment of treatment.



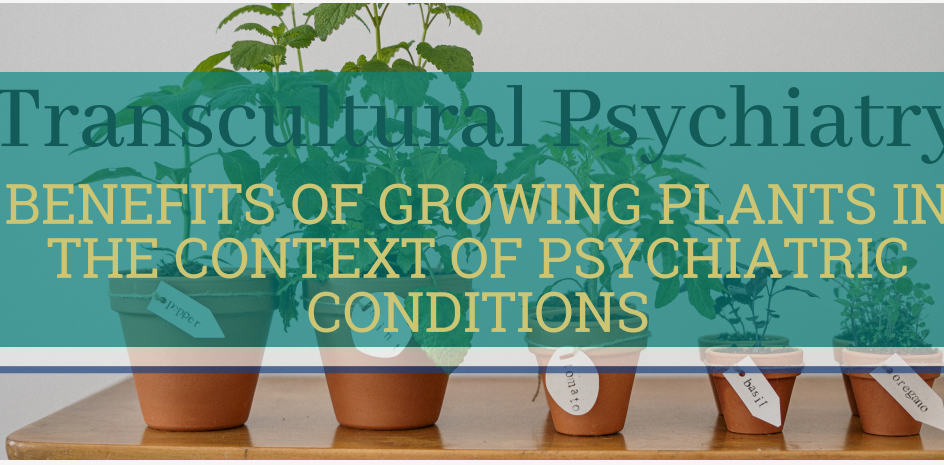
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# Transcultural Psychiatry

## BENEFITS OF GROWING PLANTS IN THE CONTEXT OF PSYCHIATRIC CONDITIONS



Be it the beautiful trees that flower every year in our hospitals, the countless drugs derived from plants, or the Horatio's Garden, a national charity of the United Kingdom, providing a promising livelihood for spinal injury patients, plants are scattered across the realms of modern medicine, helping tackle various aspects of treating patients.

In this piece, we will be discussing the role of horticulture in treating psychiatric illnesses, and why prescribing a small pot of a local house plant may be surprisingly beneficial.

- **Reducing autonomic activity and stress:** A randomised control study published in the Journal of Physiological Anthropology, concluded that active interaction with indoor plants can reduce psychological stress. These interactions lowered autonomic activity and promoted a sense of calm and soothing. For patients who reside in a headspace that is constantly battling the overwhelming thoughts and emotions that mental illnesses create, any reliable cues in their environment that could provide ease are very essential.
- **Overcoming cognitive fatigue and providing energy:** A study by Berman et al., compared the restorative effects on cognitive functioning of interactions with natural versus urban environments. A walk in nature and caring for indoor plants were found to restore cognitive capacity and improve concentration and well-being in mentally ill patients. The intriguing stimuli and need for focus modestly grab attention in a bottom-up fashion, allowing top-down directed attention abilities a chance to replenish while their urban counterparts in environment such as TV or computer screens capture attention dramatically and require additional energy input which makes these activities less restorative for brain function.
- **Improving self-esteem and self-efficacy:** Successful care-taking of plants promotes a feeling of accomplishment, and a sense of purpose in a day. The returns from a healthy plant are high and very satisfying, a sharp contrast to several mindless activities that flood the average experience of an urban dweller. A study analyzing the effects of a group based horticultural experience on quality of life of persons with chronic mental illness showed immediate and positive effect on life satisfaction, well-being and self-concept after the six-week study period.
- **Low expectancy companionship:** Plants themselves provide easy friendship and have also been found to make interaction in social circles easier for those with mental illnesses. In a study by Rappe et al., participants were psychiatric out patients who along with their support persons indulged in group gardening showed an improvement in interpersonal exchanges and self-esteem, thus improving exchanges with people around them.





- **Plants also help in the practice of mindfulness:** The care of plants elicits the habit of observing and staying in the present. The activities anchor attention and ground the wandering head, making negative thoughts that arise less intimidating and more accessible to help.
- **They're a mirror:** Awareness of self and remembering to check in and care for one self, is very important in patients presenting with self-neglect. The status of a plant often reflects its owner's headspace.
- Their daily needs provide a good routine that can be learnt and followed. Addressing their needs reminds a patient to pay attention to their own. In the grand scheme of things, aren't we walking and thinking plants? We need food, water and plenty of sunlight, and caring for plants are a great reminder of one's basic needs, which are often forgotten during the hard battle against psychiatric illnesses.



The focus of treating mental illnesses is often illness centric, rather than health centric and providing importance to positive psychology and healthy habits in recovery approaches would make possible the long-standing rhetoric, that health is more than just the absence of illness. This concept necessitates the use of new entities in the treatment of psychiatric illnesses and suggesting the cultivation of new interests, an effective and beneficial example being growing plants, could be a great inclusion in the care of psychiatric patients.

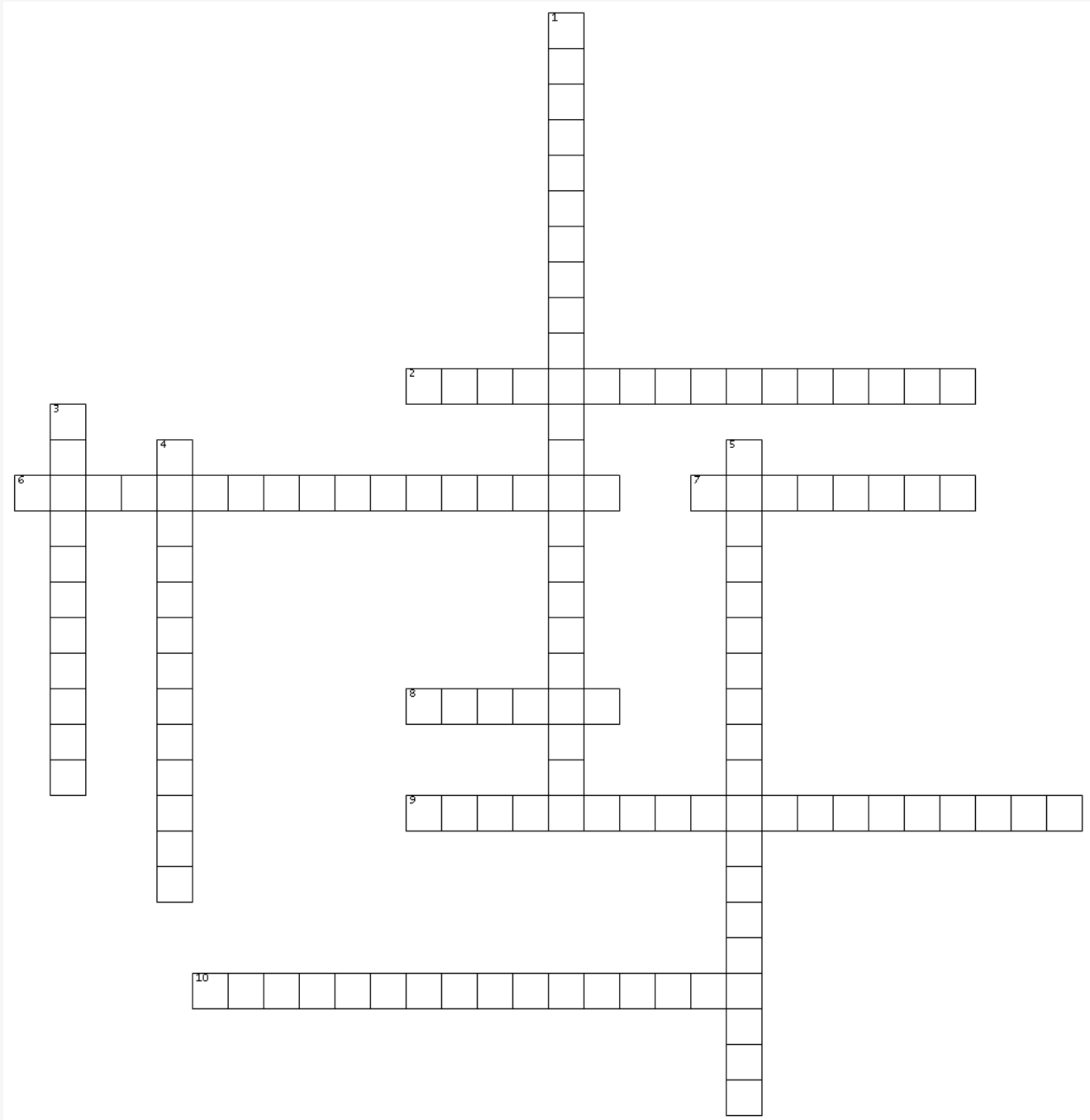


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# THE UNDERGRADUATE SECTION

## CROSSWORD



**CREATED BY**

Dr.Ramaswamy Sundararajan



## Across

2. 27 year old man, is hospitalised following a violent attack on his computer screen with a cricket bat. Over the last year, he seems to think someone within his computer is monitoring him and that videos he was seeing showed people laughing at him. Patient was diagnosed with schizophrenia and started on fluphenazine. Common side effect seen with this drug is?
6. Most common side effect seen in a 40 year old patient who has major depressive disorder, currently on sertaline.
7. 35 year old man with history of bipolar disorder is hospitalised with suspected acute manic episode. He is treated with anti psychotics causing muscular rigidity, hyperthermia and tachycardia. Which neurotransmitter was dysregulated leading to these symptoms?
8. 46 year old man who consumes more than 4 cans a beer daily is admitted to the hospital for uncontrolled Diabetes. What symptom will appear earliest once patient is hospitalised?
9. 50 year old man was assaulted two months ago and was hit in the head. Following this, patient's family noted his behavior has changed. The patient is no irritable and rude and makes socially insensitive comments to people when in the past he was kind. Which anatomical region of the brain was likely involved, causing these symptoms?
10. When switching from phenelzine to sertaline, a 60 year old man is asked to wait 2 weeks to start sertaline. This time period allows synthesis of which substance so that sertaline treatment will be safe?

## Down

1. 45 year old woman, who is a known case of schizophrenia is identified to be treatment resistant and started on clozapine. This is monitored on follow up.
3. 68 year old man revealed recently that he has increased his intake of beer from 1 beer can daily to 6 due to work stress. He says he acknowledges that consumes more than usual and has scheduled an appointment with a counselor to discuss how he can quit. Stage of behavioral change shown here is?
4. 28 year old female presents with overwhelming stress, which has increased due to a deadline over the last 6 weeks. She gets shaky, nauseous and starts to sweat. She stopped going out because she is afraid this will happen in front of her friends. This disorder is?
5. A resident physician is yelled at by a patient who also belittles him. He is reminded of his father who also belittled his accomplishments. This caused the resident physician to get angry and yell back at the patient and he orders haloperidol for the patient. What response is the resident showing here?

