

# TelePsychiatry: Mental Health Detection App using DASS42

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**Abstract** — Mental Health is such an issue that might arise due to quotidian errands or tasks rather than extravagant factors that might be considered as contributing symptoms for other disorders. Mental Health, albeit extremely crucial, is very inaccessible right now. Not everyone can have quick access to a doctor. There are those who, in spite of the stigma, are interested in improving their mental health. We want to help create a secure environment for people by implementing an application with DASS 42 that will help classify Depression, Anxiety and Stress for users based on their scores. In this application, we have incorporated an extensive, well-articulated questionnaire with the kind of questions that will help our system understand and evaluate the issue that the user is going through.

The application aims at providing an eloquent environment to the users indicating their mental state.

## I. INTRODUCTION

Telepsychiatry is a method of providing psychiatric care remotely using technology that enables direct interaction between the psychiatrist and the patient.

This approach goes beyond individual counselling and includes psychiatrists providing psychological support and counselling to first responders. With telepsychiatry, mental health care can be delivered in real time, allowing for direct and interactive communication between psychiatrist and patient. This allows for effective assessment, therapy

(ex, individual, group, or family therapy), patient education, and medication management, all via video conferencing or similar means. In addition, telepsychiatry includes the documentation and transmission of medical information.

This may include the remote recording and sharing of medical images, videos or other relevant data for later review by healthcare professionals. This aspect allows for a complete and in-depth assessment, facilitating collaboration and obtaining a second opinion if necessary. Using the power of technology, telepsychiatry is enabling ubiquity with respect to mental health care, (by making mental health accessible) particularly for people from remote or underserved areas.

It breaks down geographic barriers and provides specific and timely support to those who might otherwise have difficulty accessing local mental health services. It should be noted that telepsychiatry does not completely replace traditional face-to-face care. Instead, it complements existing mental health services and provides an additional opportunity to provide quality care.

The decision to use telepsychiatry or in-person care depends on the patient's specific needs and circumstances, with the healthcare professional determining the most appropriate approach for each individual case.

## II. DESCRIPTION & WORKING

The 42-question DASS-42, a thorough self-report scale that is a universally accepted benchmark, is designed to measure the emotional states of stress,

depression, and anxiety.. Its primary purpose within a clinical setting is to help identify and understand the underlying causes of emotional disturbance, as part of a broader clinical assessment process. By evaluating the severity of core symptoms associated with depression, anxiety, and stress, the DASS not only provides a measure of the patient's symptom intensity but also offers a valuable tool for tracking their response to treatment.

The DASS serves as an instrument aiming for diagnosis and selection,(thus a screening instrument) assisting practitioners in determining whether individuals require further evaluation for anxiety and depression. Elevated scores on the DASS can alert clinicians to a significant level of distress experienced by the patient, necessitating further exploration and discussion during the interview phase. Conversely, it's important to note that low scores on the DASS should not replace the need for a comprehensive clinical interview. The assessment should be viewed as a complementary tool that aids in gathering valuable insights about the patient's emotional well-being.

In conclusion, the DASS-42 serves a critical function in clinical practise by assisting physicians in understanding the intensity of anxiety, depression, and stress symptoms that their patients are experiencing. It provides a quantitative measurement of these emotional states, allowing for monitoring treatment progress and identifying areas that require additional attention. However, it should always be used in conjunction with a thorough clinical interview to ensure a holistic understanding of the patient's mental health.

The scoring for all the 42 questions peculiarly is accordant with a four-point scale with 0 meaning "Did not apply to me at all" and 3 meaning "Applied to me very much, or most of the time" The pertinent items are added up as follows to determine the stress, anxiety, and depression scores:

Depression: Items 3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42

Anxiety: Items 2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, 41

Stress: Items 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39

By summing the scores for the relevant items, the overall scores for Anxiety, Stress and Depression can be calculated.

Q	Sc ore	Q	Sc or e	All D scores	All A scores	All S scores
1		22				
2		23				
3		24				
4		25				
5		26				
6		27				
7		28				
8		29				
9		30				
10		31				
11		32				
12		33				
13		34				
14		35				

1 5		36				
1 6		37				
1 7		38				
1 8		39				
1 9		40				
2 0		41				
2 1		42				
			Total for D	Total for A	Total for S	

Score Interpretation:

	Depression (D)	Anxiety (A)	Stress (S)
Normal	0 – 9	0 – 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28+	20+	34 +

To assess the sentimental breakpoints of stress, depression and anxiety, using the DASS-42, each score from the questionnaire was entered into the first two columns. The scores were then totaled for each row and entered into the available box representing depression (D), anxiety (A), or stress (S). The sums of each column were calculated to determine the score for each trait.

After calculating the scores, the meaning of each score was assessed using the ratings table provided. This allowed for a comprehensive understanding of the severity of depression, stress and anxiety experienced by the individual.

It is important to note that this process of scoring and interpretation was conducted in the past tense, thus it has already been a subset of the assessment process.

### III. RESULTS DISCUSSION

The working methodologies defined in section II generate an output suitably for every user depending on their scores earned thus classifying the user as suffering from a D/A/S i.e. depression, stress or anxiety.

The results also state provisions for the users to check out the “home remedies” section i.e. some exercises that help enhance mental health.

### IV. CONCLUSION

The app is designed to assess the user's level of anxiety, stress and depression through an extensive questionnaire. The app has an easy-to-use user interface, which likely helps to make the assessment process more accessible and user-friendly. While the app may provide some useful insights into the user's mental health, it is not a substitute for professional medical advice or treatment. If the results indicate that the user is experiencing high levels of depression, anxiety, or stress, it is recommended that they seek support from a qualified mental health professional. Overall, the app may be a helpful tool for individuals who are interested in monitoring their mental health and wellbeing, but it should be used in conjunction with other sources of support and guidance.

## REFERENCES

- [1] Mental health: Nature, 2016 [1] Anthes E.
- [2] Harvard BC; East ML. From Infusion to Diffusion in the Mental Health Social System: Mental Health Mobile Apps. 2015 JMIR Mental Health
- [3] The Future of Mental Health Treatment and Technology. In 2017, the National Institute of Mental Health.
- [4] Price M., Yuen E.K., E.M. Goetter, et al. "mHealth: a mechanism to deliver more accessible, more effective mental health care." 2014, Clin Psychol Psychother
- [5] S. Yuan, W. Ma, S. Kanthawala, et al. Continue Using My Health Apps to Learn How Users See Health and Fitness Apps Using the UTAUT2 Model. 2015 Telemed J E Health