**1.2 Constraints**

·      Economic

For the project, the cost for supplying a computer and camera must be considered.

·      Environmental

To detect the facial expressions of the patients by the camera properly, the

environment should be bright, and to record the conversations clearly there shouldn’t

be too much noise or other sound in the environment. Other than that, the project itself has no good or bad effect on the environment.

·      Social

To get more accurate results, training data should be diverse enough. The accuracy

of the facial emotion algorithm may change according to the skin color, any

disorder on the face, social norms and cultural differences in terms of the

expressions of emotions. For instance, a study testing algorithms of facial

emotion recognition revealed that they assigned more negative emotions (anger)

to faces of people of African descent than to other faces. Furthermore, whenever there was ambiguity, the former were scored as angrier (Rhue, 2018).

·      Political

Even though we are going to record the session and use the emotion recognition

system if the patient has permission, outside of our project the usage of the

system may invade personal space. Because of that there are some places where

emotion recognition is prohibited by law. In such places our project could not be used.

·      Ethical

To use the system over a patient, permission of that patient must be obtained. Kayıt

ve bilgilerin kullanılması

Video şifrelenecek 6 ay tutulacak, 3. Parti ve kişilerle paylaşılmayacak.

·      Health and safety

Other than the permission, there should be a security system to prevent outside access rather than the psychologists who are the users of the system, to the records and the analysis of the patients.

Our project has no bad effect on the health and safety of the people.

·      Manufacturability

To manufacture the system set up easily, a computer, camera and internet connection is needed. Yazılım bilgisayara set up edilecek.

·      Sustainability

Facial recognition technology continues to evolve. The system should be updated over time tokeep up with the developments and to get better results.

Security and Privacy Issues

One of the issues with MAI Therapist privacy, confidentiality, security, and safety is the use of insecure websites such as readily hackable business applications . While software malfunctions, data security may also be jeopardized , posing the risk of data leakage that are outside the therapist's management. 59 60 61 62

Communicative Problems

The lack of non-verbal indicators in therapeutic connection, particularly when utilizing message technologies as well as when employing cellphone or teleconference, is one of the most often highlighted negative aspects and may result in misconceptions and misinterpretation [see (20)]. The entire diagnostic procedure and psychiatric evaluation might be hampered if a therapist missed some crucial piece of healthcare data [see (28)]. It might be challenging to develop kindness, sincerity, and sentiments while using email in this situation because of the time gap and absence of immediacy [see (64)]. Due to these factors, not all therapy techniques and strategies may be suitable for use with online MAI Therapist.

Emergency

There are concerns if a scenario in which there is a harm to oneself or others can be recognized and handled when the client and the psychiatrist are in separate places [see (67)]. Verifying the client's identification and address [see (68)], technology challenges [see (69)], and merge treatment are additional ethical concerns with relation to emergencies or crises.[70]

Issues with Informed Consent

MAI Therapist needs a specific kind of explicit consent because of the various ways that it differs from in-person treatment (such as technological and security obligations) [see (71)]. It could be challenging to ascertain the client's competence to offer permission under the law or to judge their mindset [see (72)].

Patient Mentality

The use of an MAI Therapist might not be appropriate for all clients, pathological features, mental illnesses, or challenges; on occasion, it may even be associated with complications, particularly in cases of severe mental disorders or in clients who seem to be completely dysfunctional and/or a danger to the patient or somebody else [see (16)]. Another obstacle can be a client's incapacity, decreased ability, or distress when utilizing software [see (15)].

Software Issues

In this situation, technical issues and breakdowns are serious problems that might cause annoyance and rage, which could be upsetting or disruptive.

Computer Use

MAI therapist may encourage excessive internet use, which might lead to addictive behaviors [see (47)], perhaps resulting in increased peer rejection [see (84)]. visibility to unreliable, deceptive, or other types of wellness or other data (85)

2. Requirements

 → video camera, yapay zeka, görüntü işleme,

1. Application should be able to record the session.

2. Application should be able to identify the patient's emotions.

3. Application should be able to identify the patient's gestures.

4. Application should be able to identify the patient's speech.

5. Application should be able to identify the patient's facial expressions.

6. Application should be able to convert voice to text.

7. Application should be able to analyze the therapist's questions.

8. Application should be able to analyze the patient's answers.

9. Application should be able to provide a report to the therapist.