Mapping the Treatment's Protocol for Schizophrenic Patients in Mental Health Hospital (Khartoum Teaching Hospital, BahriHospital for Mental Illness and Addiction, Omdurman Military Hospital and Eltigani Elmahi National RehabilitationHospital)

Randa Bashir Elhassan clinical psychologist & counsellor

Dr.Salma Mohamed Ibrahim

Abstract:

The Study aimed to discover the treatment's protocol and the therapeutic techniques used for schizophrenic patients in mental health hospitals in Khartoum State, the differences in medical treatment and psychological approaches used**.** This study is based on qualitative approach and was conducted in four hospitals at Khartoum State, namely Khartoum Hospital, Bahri Hospital, Omdurman Military Hospital and Eltigani Elmahi National Rehabilitation Hospital.The study is composed of two phases, phase (1) was conducted in 2014 and phase (2) was conducted in 2021. An interview of opened questions were designed and conducted to all these hospitals by the researcher. The study revealed that there is no common protocol adopted by the mental health hospitals in Khartoum State. Accordingly, the study recommends the necessity of setting common protocols among the mental health hospitals in Sudan for psychiatric and psychological treatment of mental illnesses to ease monitoring, evaluation and creating a database for reviewing and amending if needed.It is important to understand whether there have been any improvements or changes to the treatment protocols used in 2014 in comparison to that of 2021.

Key words:protocol.Treament protocol.Schizophrenia.Mental health. Khartoum.

المستخلص:

هدفت الدراسة لمعرفة أي تطور في البرتكول العلاجي في مستشفيات الدراسة(2014-2021م) ، والاختلافات في العلاج الطبي والأساليب النفسية المستخدمة طوال فترة الدراسة تنبع أهمية الدراسة من خلال تفردها بالبحث في برتكول العلاج والأساليب العلاجية المستخدمة لمرضى الفصام في عدد من مستشفيات العاصمة الخرطوم ، اعتمدت الدراسة على المنهج النوعي وأجريت في أربعة مستشفيات بولاية الخرطوم وهي مستشفى الخرطوم التعليمي ، ومستشفى العصبية بحري ، ومستشفى السلاح الطبي ، ومستشفى التجاني الماحي. تتكون الدراسة من مرحلتين ، أجريت المرحلة الأولى في عام 2014م ، وأجريت المرحلة الثانية في عام 2021م . كما تم تصميم مقابلة الأسئلة المفتوحة وإجرائها في جميع هذه المستشفيات من قبل الباحث. توصلت الدراسة إلى عدم وجود بروتوكول موحد بين قبل مستشفيات الصحة النفسية بولاية الخرطوم. .

الكلمات المفتاحية: برتكول ، الأساليب العلاجية ، الفصام ، الصحة النفسية ، الخرطوم

Introduction :

Schizophrenia is a complex, progressive and severe mental disorder characterized by distortion in thinking, perception, emotions, language, sense of self and behavior. It is estimated that over 21 million people worldwide have schizophrenia [(1)]. The majority of people with this illness exhibit a prodromal period characterized by subtle changes in thoughts and perceptions, followed by the onset of psychotic symptoms [(2)] .

Management of schizophrenia depends largely on medications and psychosocial interventions. No single approach is widely considered effective for all patients, though psychiatric medication is often the primary method of treatment. Currently, there is a movement towards utilizing a recovery model that emphasizes hope, empowerment and social inclusion, though this is yet a mainstream mental health concept[(3)].

Many approaches have been used to detect any abnormal behavior in schizophrenic patients. Perceptions of speech in the absence of an auditory stimulus (auditory verbal hallucinations) is a fundamental feature of schizophrenia. The usage of functional neuroimaging provides a powerful means of measuring neural activity during auditory hallucinations, but the results from previous

studies have been inconsistent [4]. In many non-Western societies, schizophrenia may only be treated with more informal, community-led methods. The outcome for people diagnosed with schizophrenia in non-Western countries may actually be better than for people in the West. The reasons for this effect are not clear, although cross-cultural studies are being conducted [5].

The effectiveness of interventions is often assessed by using standardized methods, one of the most common being the Positive and Negative Syndrome Scale (PANSS) [6]. This instrument only measures the presence of psychiatric symptoms, and does not adequately assess the characteristics of the recovery model which emphasize psychosocial constructs of recovery, such as hope, identity formation, empowerment and social inclusion [7].

The mainstay of psychiatric treatment for schizophrenia is antipsychotic medication [8]. These can reduce the "positive"symptoms of psychosis. Most antipsychotics are thought to take around 7–14 days to have their main effect. Treatment of schizophrenia changed dramatically in the mid-1950s with the development and introduction of the first antipsychotic chlorpromazine. Others such as haloperidol and trifluoperazine soon followed [9].

It remains unclear whether the newer antipsychotics reduce the chances of developing neuroleptic malignant syndrome, a rare but serious and potentially fatal neurological disorder most often caused by an adverse reaction to neuroleptic or antipsychotic drugs [10].

The two classes of antipsychotics are generally thought equally effective for the treatment of the positive symptoms. Some researchers have suggested that the atypical medication offer additional benefit for the negative symptoms and cognitive deficits associated with schizophrenia, although the clinical significance of these effects has yet to be established. Recent reviews have refuted the claim that atypical antipsychotics have fewer extrapyra-

midal side effects than typical antipsychotics, especially when the latter are used in low doses or when low potency antipsychotics are chosen [11].

Response of symptoms to medication is variable; "Treatment-resistant schizophrenia" is the failure to respond to 2 or more anti-psychotic medications given in therapeutic doses for 6 weeks or more [12]. Patients in this category may be prescribed clozapine,[13] a medication of superior effectiveness but several potentially lethal side effects including agranulocytosis and myocarditis [14]. Clozapine is the only medication proven to be more effective for persons who do not respond to other types of antipsychotics[15]. It also appears to reduce suicide in people with schizophrenia. As clozapine suppresses the development of bone marrow, in turn reducing white blood cells which can lead to infection, blood tests are taken for the first six months on this medication (16).

For other patients who are unwilling or unable to take medication regularly, long-acting depot preparations of antipsychotics may be given every two weeks to achieve control. America and Australia are two countries with laws allowing the forced administration of this type of medication on those who refuse but are otherwise stable and living in the community. Some findings indicate that, in the long term, many schizophrenic individuals function better without antipsychotic medicine [17]. In a 2007 study, only 28% of patients who were not being treated medicinally showed signs of psychotic activity, while 64% of those on antipsychotics had psychotic activity. The authors of the study cautioned that some of this gap may be accounted for by the increased likelihood of symptomatic patients to be placed on antipsychotic medicine, but also noted that some of the difference held even when on-antipsychotic and off-medicine patients of similar prognosis were compared [18].

Persons diagnosed as having schizophrenia are advised to avoid dietary supplementation of arginine above 30 milligrams per

day [19]. Successful treatment of schizophrenia, therefore, depends upon a life-long regimen of both drug and psychosocial, support therapies. While the medication helps control the psychosis associated with schizophrenia (e.g., the delusions and hallucinations), it cannot help the person find a job, learn to be effective in social relationships, increase the individual's coping skills, and help them learn to communicate and work well with others [20].

Psychotherapy is not the treatment of choice for someone with schizophrenia. Used as a helper to a good medication plan, however, psychotherapy can help maintain the individual on their medication, learn needed social skills, and support the person's weekly goals and activities in their community. This may include advice, reassurance, education, or modeling [21].

In the past three decades, treatment strategies have been developed for treatment and rehabilitation of schizophrenic disorders that have been shown to markedly reduce the clinical, social and carer morbidity and improve the efficiency of mental health resources [22]. Several reviews of the clinical trials literature have concluded that every person with a schizophrenic disorder should be provided with the combination of a) optimal dose antipsychotics, b) strategies to educate himself or herself and carers, usually relatives, to cope more efficiently with environmental stresses, and c) assertive home-based management to help prevent and resolve major social needs and crises, including episodes of symptoms [23].

Despite strong scientific support for the routine implementation of these 'evidence-based' strategies, few services provide more than the pharmacotherapy component, and even this is seldom applied in the manner associated with the best results in the clinical trials [24].

Psychotherapy is also widely recommended, though not widely used in the treatment of schizophrenia, due to reimbursement problems or lack of training. As a result, treatment is often confined to psychiatric medication [25].

Cognitive behavioral therapy (CBT) is used to target specific symptoms and improve related issues such as self-esteem and social functioning. Although the results of early trials were inconclusive [26] as the therapy advanced from its initial applications in the mid-1990s, meta-analytic reviews suggested CBT to be an effective treatment for the psychotic symptoms of schizophrenia [27]. Nonetheless more recent meta analyses have cast doubt upon the utility of CBT as a treatment for the symptoms of psychosis [28].

Another approach is cognitive remediation therapy, a technique aimed at remediating the neurocognitive deficits sometimes present in schizophrenia. Based on techniques of neuropsychological rehabilitation, early evidence has shown it to be cognitively effective, resulting in the improvement of previous deficits in psychomotor speed, verbal memory, nonverbal memory, and executive function, such improvements being related to measurable changes in brain activation[29].

Metacognitive training: In view of a many empirical findings [106] suggesting deficits of metacognition (thinking about one's thinking, reflecting upon one's cognitive process) in patients with schizophrenia, metacognitive training (MCT) [30] is increasingly adopted as a complementary treatment approach. MCT aims at sharpening the awareness of patients for a variety of cognitive biases (e.g. jumping to conclusions, attributional biases, over-confidence in errors), which are implicated in the formation and maintenance of schizophrenia positive symptoms (especially delusions), and to ultimately replace these biases with functional cognitive strategies [31].

The training consists of 8 modules and can be obtained cost-free from the internet in 15 languages [32]. Studies confirm the feasibility [33] and lend preliminary support to the efficacy [35] of the intervention. Recently, an individualized format has been developed which combines the metacognitive approach with methods derived from cognitive-behavioral therapy [36].

Family Therapy or Education, which addresses the whole family system of an individual with a diagnosis of schizophrenia, has been consistently found to be beneficial, at least if the duration of intervention is longer-term [37] Aside from therapy, the impact of schizophrenia on families and the burden on careers has been recognized, with the increasing availability of self-help books on the subject [38]. There is also some evidence for benefits from social skills training, although there have also been significant negative findings (Kopelowicz, *et al.* 2006). Some studies have explored the possible benefits of music therapy and other creative therapies [39].

Furthermore, Family therapy can significantly decrease relapse rates for the schizophrenic family member. There are many mental health hospitals in Sudan deal with this common disorder. They applied many approaches in treatments for schizophrenia. Thus, it is important to map the treatment protocol have been used in those mental health hospital.

Accordingly, the current study aimed to assess the therapeutic techniques used for schizophrenic patients in mental health hospitals in Khartoum State, the differences in medical treatment and psychological approaches used.

Methodology

Study design: This study is based on qualitative approach, and it is composed of two phases. Phase (1) was conducted in 2014, and phase (2) in 2021. Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior. The qualitative method investigates the why and how of decision making, not just what, where and when. Hence, smaller but focused samples are more often used than large samples.

Participants:

Phase (1) of the study wasbased on data collected from psychologists and psychiatrists in three mental health hospitals in

Khartoum State, namely Khartoum Teaching Hospital, Bahri Hospital, and Omdurman Military Hospital. In phase (2), data were collected from practitioners in three hospitals, namely Eltigani Elmahi National Rehabilitation Hospital, Bahri Hospital, and Omdurman Military Hospital. The four hospitals are the main hospitals in Khartoum State, and they have integrated departments of psychiatry and psychological health. The hospitals receive most of psychological and psychiatric cases from all parts of the country.

In phase (1), the researcher collected data from a sample of (n = 6) participants (3 males and 3 females) (3 psychologists and 3 psychiatrists), whereas in phase (2), data were collected from different participants of (n = 6) (3 males and 3 females) (3 psychologists and 3 psychiatrists).

Six of the participants were males and the others were females. In both phases, two participants (a psychologist and a psychiatrist) were selected from each hospital.

Data collection:

The researcher designed an interview which consisted of open questions (Appendix 1). The same questions were used in both phases. The questions were designed to obtain answers demonstrating the treatment techniques for schizophrenic patients, as well as the differences between the medical and psychological treatments and approaches used in the hospitals.

Data analysis:

Data collected through the interview were analyzed using content analysis method. Patton (1990) stated that qualitative researchers tend to use inductive analysis of data, meaning that the critical themes emerge out of the data.Data were coded manually using (X1, X2, …, X6) in phase (1), and (Y1, Y2, …, Y6) in phase (2). Interviews with participants were carried out independently, and then digitally recorded and transcribed in full text. The transcribed material were categorized and analyzed with comments

and summaries written in the margins - initial coding - for each interview.

Results and discussion:

The study investigated the common treatment approaches used by psychiatrists and psychologists for schizophrenic patients in four mental hospitals in Khartoum state.

The study consisted of 2 phases conducted within the period of 7 years, with the aim to find whether there were any significant developments in the protocols that the practitioners used in the treatment of schizophrenia.

Concerning the approaches:

Both medical and psychological approaches were used; however there was no common protocol used.

Khartoum Teaching Hospital:

-In 2014

" *There is no protocol in Sudan's hospital about treatment for Schizophrenic patients. But, usually we follow the international protocol"* (X1 Psychiatrist, male, 38 years).

In the same hospital psychologists added

"*No certain protocol is used, the psychologist applied what he/she learnt from his/her experience" (X2 psychologist* female, 32 years*).*

-In 2021

"*They prescribe for the schizophrenic patients anti psychotic if the patient is aggressive they recommend admission and prescribe typical antipsychotics (Haloperidol) and after the patient calms down they prescribe atypical antipsychotics (Rispiroden or Olanzabine)"* (Y1 psychiatrist male, 39 years)

Same hospital;

"We intervene after the patient has become stable and positive symptoms disappear. CBT is very useful for them before we use for neurotic patients only. Psycho-education is important for

the family and parents of the patient for supportive therapy and changing maladaptive behavior into a positive one and also improving negative thoughts." (Y2 psychologist female, 35years)

Bahri Hospital:

-In 2014

"There is International protocol of treatment for schizophrenia. *But here in Sudan, usually psychiatrists take some of treatment protocols and adapted towards Sudanese environment*" (X3 Psychiatrist, female 35 years).

The psychologist added

"*Schizophrenic patients have to be admitted to the hospital in order for us to see the improvement day by day. Firstly, we give them medication and always check the condition. After two weeks he or she taking the medication, I will start the treatment by applying behavioral therapy and family therapy. The medication is very useful to stabilize the person from hallucinations and delusions. On behavioral therapy, we focus on how to take care personal hygiene. For example like to take a bath. Mostly, the schizophrenic patients do not take care themselves. They have neglected appearance. Thus, we can begin to change this behavior by training them how to take a bath by themselves. The patient will be discharged after a month of hospitalization and will be controlled by another follow up*" (X4 psychologist female, 34 years).

-In 2021

"*We use the same plan but we are careful with Olanzabine (atypical antipsychotic) if the patient is diabetic, they are not recommended and* prescribed Rispirdon as it has a good response with negative symptoms of schizophrenia. We mention to our female patients that they could develop sexual dysfunction as a side effect." (Y3 psychiatrist male, 36years)

The psychologist then mentioned

"After assessing the patient we applied different psycholog-

ical tests to choose the best intervention. We started individual therapy after assessing their family therapy. It was useful to teach the family about the disorder and how to deal with the patient. After the patient become stable I registered them into group psychotherapy for 6-8 weeks. It was important for parents to understand that there were others with the same condition which was not unique. Weekly assessments were made; sometimes individual sessions were required for more support to join the group. With the group they acquired different skills by knowing their hobbies."

Omdurman Military Hospital:

-In 2014

"*I took full history, symptoms, and the onset of the illness from the co-patients. It is important to know the personality before and after the illness. To seek to what extends the personality changed determined what scales I need. Or examples MMPI, Beside, it will determine the prognosis which is good or bad. I put management plan or the therapeutic technique. Such as behavior therapy and psycho education for the family. We use behavior therapy because usually schizophrenic patients they do not take a bath. So, behavior therapy is needed to change the behavior and appearance of the patients*" X5 Psychologist Male, 43 years).

"*There are no specific protocol being used by psychiatrists in Sudan. But, when we worked with patients, we see the international protocol and make it suitable with the need of patients." (*X6 Psychiatrist, Male, 45 years old.)

-In 2021

"Another plan they prefer long acting psychotics (injections) after 2 weeks or a month they may change the dose according to the patients response and side effects. For resistance cases we give Colazabine at a maximum dose for maximum duration, if there is no improvement Rispirdon at a maximum dose is used. Doctors hesitate to prescribe maximum doses." (Y5 psychiatrist, Male, 40)

"We intervene after the patient becomes stable. We study the case carefully to know more about the severity of the symptoms, while the patient is taking medication we start psycho-education for the patient and their family to understand the patients illness. CBT is also useful to control the thoughts and change it to healthy one also to adjust aggressive behavior that results from their feelings and thoughts. We concluded that psycho-education to be very useful. For those who are admitted to the hospital we use vocational training to offer functional and occupational support." (Y6 psychologist, Female 36 years)

No single approach is widely considered effective for all patients, though psychiatric medication is often the primary method of treatment. Currently, there is a movement towards utilizing a recovery model that emphasizes hope, empowerment and social inclusion, though this is yet a mainstream mental health concept (40). There are many approaches have been used to detect any abnormal behavior in schizophrenic patients. Perceptions of speech in the absence of an auditory stimulus (auditory verbal hallucinations) are a fundamental feature of schizophrenia. The usage of functional neuroimaging provides a powerful means of measuring neural activity during auditory hallucinations, but the results from previous studies have been inconsistent (41). In many non-Western societies, schizophrenia may only be treated with more informal, community-led methods. The outcome for people diagnosed with schizophrenia in non-Western countries may actually be better than for people in the West (42). The reasons for this effect are not clear, although cross-cultural studies are being conducted.

Type of treatment:

Concerning the type of treatment used by psychiatrist and psychologist, different types appeared according to their answers: "*Psychiatrist: when the patient came, we do not diagnose directly that he/she has schizophrenia if the patient has dellusions and hal-*

lucinations. We should take full investigations about himself/herself and also the family history. We have to investigate also if he/she use psychoactive drugs, having Malaria, Typhoid, or Brucella. If he/she does not include one of those case, there will be a third option, whether she/he has schipohrenia, Schizophrenioform disorder, or Brief Psychotic disorder. Schizophrenioform, the symptoms will continue more than one month and less than six months. Brief psychotic disorder, the symptoms is less than one moth. If the symptoms is more than 6 months, and accompanied by negative symptoms (no personal hygiene and isolation), according to ICD 10, it is considered as schizophrenia. The other symptoms such as hallucinations and delusions are classified as positive symptoms ((X1 Psychiatrist).

The mainstay of psychiatric treatment for schizophrenia is antipsychotic medication (43). These can reduce the "positive"symptoms of psychosis. Most antipsychotics are thought to take around 7–14 days to have their main effect. Treatment of schizophrenia changed dramatically in the mid-1950s with the development and introduction of the first antipsychotic chlorpromazine. Others such as haloperidol and trifluoperazine soon followed (44). It remains unclear whether the newer antipsychotics reduce the chances of developing neuroleptic malignant syndrome, a rare but serious and potentially fatal neurological disorder most often caused by an adverse reaction to neuroleptic or antipsychotic drugs (45). The psychologist from the same hospital said "*according to protocol I adopted I used psychotherapy focusing on cognitive behavioral therapy, with referral to psychiatrists to provide the required medical treatment according to his diagnosis of the case*" (X2 Psychologist). From the second hospital the psychiatrist added: "*We start with second generation (Atypical) of anti psychotic such as Olanzapine. In Sudan, there is no Olanzapine injection. Only in tablets forms are available. Besides, Olanzapine also serve as*

mood stabilizer. We see the progress of the medication after one month. If there is no progress, we start to give another medicine from the second generation. If there is no progress also in another one month, the patient can be classified as schizophrenia resistance toward medication. In this case, we should give stronger medication such as colazapine. This type of medicine is effective for negative symptoms of schizophrenia. However, there is side effect of this kind of medicine which is called Agranulocytosis in which the reduce amount of white blood cells in the body" (X3 Psychiatrist). Moreover, the psychologist added: "*On family therapy, first we can give them psycho-education about how to deal with schizophrenic patient. Usually the family treat the patient badly, such as shout on them, hit them If they do not follow their instructions, and many more. The family have to control their emotions when dealing with the patients. They have to give support and talk in positive way. For example, if the patient do a good job, like taking a bath.. Praise them.. and say that they do an excellent job. It will affect the patient's condition. There are Improvement when family take care the patients and give more attention. Family therapy is only can be done if the patients come with the guardian or family. This is because, sometimes the patient come with co-patients but without the family*" (X4 Psychologist". Psychologist from the third hospital added "*It is according to the patient's situation. We will not start the psychotherapy until the hallucinations or delusions are stop and he or she become inside. We used different theory together. For examples: I used free association to know the childhood experience of the patients. If I observed the patient is anxious, restless, and aggressive, I apply relaxation technique. If the patient is change the behavior or appearance, I ask the family to give reward such as give food he/she likes or ask him/her to go outside the ward like going to the yard. And you can give praise or good comment toward themselves. Like "you are excellent" to*

increase their self esteem" (X5 psychologist). Family Therapy or Education, which addresses the whole family system of an individual with a diagnosis of schizophrenia, has been consistently found to be beneficial, at least if the duration of intervention is longer-term (McFarlane, *et al.* 2003; Glyn, *et al.* 2007). Aside from therapy, the impact of schizophrenia on families and the burden on careers has been recognized, with the increasing availability of self-help books on the subject (Jones and Hayward, 2004; Torrey, 2006). There is also some evidence for benefits from social skills training, although there have also been significant negative findings (Kopelowicz, *et al.* 2006).

(X6 Psychiatrist) said that "*First, we see the symptoms that appeared from the patients. There are positive symptoms such as hallucinations, delusions, aggression, and agitation. If these symptoms are exist, it will be classified as chronic schizophrenia. We give treatment according to his/her current conditions. If he patient has aggressiveness or show dangerous symptoms such as want to kill the others or hurt themselves, you have to give him/her haloperidol, phenrgan injection and lorazepam to stabilize them. We isolated them in the room or we can tied them in order for them to not harm the others. If they become stable, we give them the medicine in the types of tablet.* Medications are given depend on the situation of the patient. If there are symptoms of aggressiveness or dangerous symptoms, the psychiatrist give the patient haloperidol, phenrgan injection, and lorazepam to stabilize the patient.

There are symptoms of schizophrenia also as been called by 4As *"The symptoms are (4As) Avolition, Asociality, Anhedonia, Alogia. If these symptoms are appeared on the patients, we give them not first generation. Because it is not useful to stop the negative symptoms, such as haloperidol. We give them the second generation such Olanzapine. We should not give Olanzapine for the*

patient who has the history of diabetic and hypertension. This is because it can create metabolic syndrome. If the patient has taken olanzapine before, and it is okay, thus he/she has to take olanzapine also. Do not change it." The psychiatrist also gave the second generation Such as olanzapine to stop the symptoms of 4As (Avolition, Asociality, Anhedonia, and Alogia).

There are some steps of medication given to the patients as stated *"They have to have a regimen toward the medication. If the patient has resistance, while we give them 2 types of antipsychotic. If after one month there is no progress, we give them another antipsychotic from the same generation (second generation). If it is not progress, we give them Colazapine and hospitalized them. There are side effects of this type of medicine. Thus, we have to do blood test quickly every week, because colazapine can give effect which is Agranulocytosis. The other side effect is convulsion. If it is happen, do not give them Colazapine again to the patient. There is people have resistance toward colazapine also. Thus, we can give them alternative colazapine (combination of antipsychotic). After that, if it is not working, we can do ECT (Electroconvulsive Therapy)."*

ECT also can be used to schizophrenic patients to have rapid response as had said by the (X6 psychiatrist) *"In the case of catatonic schizophrenia, if you want the rapid response, you can give the patient ECT also. After all the medications, like one month after that, we can refer him/her to the psychologist"*

Conclusion:

The two studies revealed that there is no common protocol adopted by the mental health hospitals in Khartoum State.Accordingly, the studies recommend the necessity of setting common protocols between the mental health hospitals in Sudan for psychiatric and psychological treatment of mental illnesses to ease monitoring, evaluation and creating a database for reviewing and amending if needed.

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Appendix (1)

Interview

	AGE	GENDER	Day	SPECALIZATION
Time				
HOSPITAL				

Q (1) Is there any protocol *in Sudan's hospital about treatment for Schizophrenic patients?*

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Q (2) What are the the type of treatment used by psychiatrist and psychologist**?**

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