

RESEARCH ARTICLE

REHABILITATION SERVICES FOR PATIENTS WITH PSYCHIATRIC AND MENTAL CONDITIONS IN ONE CENTER IN THE KINGDOM SAUDI ARABIA

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Abstract

Background: Psychiatric and mental disorders are more prevalent than recorded. Severe cases of these conditions require rehabilitation services to reach optimal social and occupational wellbeing. This study was carried out to evaluate the characteristics of patients seeking care in one rehabilitation center in Saudi Arabia and to evaluate the impact of these services on the patients' GAF scores. **Design:** Ac. **Method:** This cross-sectional observational study was carried out in rehabilitation center in Majmaah, Saudi Arabia over a period of 3 months from Jan 2021 to March 2021. Following administration and ethical approval, medical students recruited patients who sought care from a rehabilitation center in Majmaah Hospital. Patients were screened for eligibility for inclusion and data were collected from medical records and through observation of the participants when they visited the facility. Data collection took place over a 6-month period. **Results:** A total of 147 responders participated in the study with the majority being male participants (53.1%) aged between 21-30 years of age (41.5%) with 66% were chronic care seekers of the facility. Causes for admission to the facility were mainly to control anti-epileptic medication intake (31.4%), control epilepsy (26.5%) and ADHD (11.6%). In terms of follow up, 78.9% visited a psychologist and 78.9% visited a social worker. On the social level, 30.6% visited a family member once a month and 86.4% did recreational activities once in 4 weeks although a large number (87.1%) did not approach any teaching facilities. The highest frequency in GAF range was than between 21-30 with 37.4% of the study population followed by the range between 1-10 with 18.4%. More male participants scored 21-30 than females (n=13, 8.8% vs. n=3, 2%; p=0.00). Those who reported good social skills in terms of smiles scored significantly higher on the GAS score than those with poorer social skills (n=36, 90% vs. n=4, 10%; p=0.002). Similarly for conversation skills (n=29, 72.5% vs. n=11, 27.5%; p=0.00) and speech (n=26, 65% vs. n=14, 35%; p=0.00). Additionally, significantly more females scored higher than 40 on the GAF scale when compared to male participants (n=31, 77.5% vs. n=9, 22.5%; p=0.00). **Conclusion:** Rehabilitation services were seen to be provided for both genders but

perceived differently between male and female participants. This was evident in the differences in visits to the health care professionals. Additionally, more care can be given to those that lack proper hygiene practices and communications and interaction skills. These weak practices should be tackled through educational and behavioral interventions. Finally, inclusion of the most common mental and psychiatric disorders is necessary to provide generalizability.

Keywords: Mental Disorders; Psychiatry; Rehabilitation Services; Saudi Arabia.

Introduction

Psychiatric and mental disorders are more prevalent than documented with a lifetime prevalence of 29.1% for any of the disorders. The most common types being anxiety and major depressive disorders [1]. These numbers are somehow comparable to those presented in the kingdom of Saudi Arabia where the one-year prevalence of mental disorders was recorded to be 20.2%. The rates varied depending on age, gender and marital status where mood disorders was mostly prevalent among the younger generations, anxiety among the female and most of the disorders among those who were previously married [2]. Regardless of the type, all psychiatric and mental health disorders lead to functionality problems leading to disruption in social and occupational status [3,4]. It should be evaluated to establish the need for medical interventions and possibly rehabilitation services.

Functionality determines the person's qualifications in society and their ability to maintain a healthy life within their circle. It can be assessed through many levels according to the Classification of Functioning, Disability and Health (ICF). These include assessment of body functions, body structures, environmental capacity, societal interactions and the quality of life [5]. In other works, the patient's social, occupational and psychological functioning is evaluated to identify the severity and prognostic factors of the condition, set realistic goals, initiate interventions and guide the clinical decision making. An outstanding benefit of these diagnostic evaluations is their generic nature where patients of all ages and regardless of their mental disorder can be evaluated for their functional ability [6]. In extreme conditions, however, hospitalization or rehabilitation services should be initiated to avoid detrimental social, occupation and psychological outcomes. Rehabilitation is defined as a set of measures that is used to enable the patient with a mental or psychiatric problem maintain optimal level of social and occupational functioning [7]. The benefits of

rehabilitation lie in the activities patients engage in to achieve the desired outcomes. These activities include physical and psychological care, speech and occupational therapy in addition to provision of support services [8]. In the absence of a clear and recent view of the current practice in rehabilitation facilities, the aim of the current study was to evaluate characteristics of patients seeking care on one rehabilitation center in KSA and to evaluate the impact of these services on patients' social and psychiatric functioning through the GAF scores.

Methods

This cross-sectional observational study was carried out in rehabilitation center in Majmaah, Saudi Arabia over a period of 3 months from Jan 2021 to March 2021. Recruitment of study participants was started after the requisite ethical approval was obtained with IRB No. MUREC-Jan28/COM-2020/19-3. Patients with mental and psychological disabilities requiring care in Majmaah rehabilitation center in the Kingdom of Saudi Arabia were invited to participate in this study. They were randomly selected using systematic random sampling technique of every second patient from the available patients regardless of their age and gender.

Setting

The Psychiatric Rehabilitation Center is one of the largest centers in Riyadh Region of the Saudi Kingdom. It is part of the Majmaah Hospital which is a governmental hospital that provides multidisciplinary services to all medial conditions whether physical or psychological.

Procedure

Available patients in the rehabilitation centre were screened for eligibility for inclusion in this study. This was done by medical students were trained on screening and data collection. The latter was done by medical researchers who are experts in the field to

assure consistency in the data collection process. Data collection was done from medical records and through observation of the participants that were recruited when they visited the facility. The medical students visited the facility daily for screening the available patients and in search for new eligible participants. Data collection took over a period of six months. Consent forms were signed by the participants' next of kin and all were assured for the low risk associated with this study conduct, privacy and confidentiality of their data. Data collection form

- A. Sociodemographic characteristics: This section included questions on the age, gender, educational and marital status and the duration of care provided in the study facility in years.
- B. Medical profile: This section addresses medical and psychological health conditions in addition to the prescribed medications.
- C. Functional assessment: This section addresses the functional ability to maintain hygiene, social skills, reading, writing and computer skills in addition to physical ability and communication skills.
- D. Resource assessment: This section included questions on the availability of family and social support, charity or other type of support.

The Global Assessment of Functioning (GAF) scale: this scale is not intended to diagnose a psychiatric condition or to provide insight on symptoms specific to a disease. Rather it assesses the severity of the participants psychiatric problems by evaluating their social, occupational and psychological functioning. Psychometric evaluation has been discussed in many previous studies to show adequate reliability but concerning validity results due to the subjectivity of the assessor [9]. However, this subjectivity limitation can be overcome with sufficient information from the patient [10]. Additionally, recent studies have shown the GAF to serve as a global indicator for severity of symptoms [11]. The GAF provides a score between 1 and 100 with higher scores indicating better functionality status and lower scores indicating severer symptoms and poor functionality [12]. The scores are divided to intervals of 10 to provide easier readings and scorings. Although no consensus has

been made on the cut-off scoring of this scale, some assumed a cut-off score of 40 for severity of symptoms [13].

Data analysis and sample size calculation

Descriptive statistics were presented as means, standard deviation, frequency and percentages based on their level of measurements. Group comparison was done based on gender using chi square test for categorical variables. A representative sample of the available population treated in this facility was sought. A convenient proportion of 0.5 of this population yielded a sample size of 104. Considering the high attrition with this population [14], a rate of 30% was set to yield a total sample of 135 for the completion of the study.

Results

Sociodemographic characteristics of the study participants

A total of 147 responders participated in the study with the majority being male participants (53.1%) aged between 21-30 years (41.5%). Most of the sample was uneducated (98%), single (98.6%) and had no legal problems (98.6%). Two-thirds (66%) of the participants were chronic care seekers from this healthcare facility for over 10 years with 42.2% being bedridden (42.2%). Causes for admission to the facility were mainly to control anti-epileptic medication intake (31.4%), control epilepsy (26.5%), ADHD (11.6%) in addition to other mental and psychiatric conditions. Notably, none of the study participants were diagnosed with any form of anxiety or substance abuse. All patients of the facility manifested nail, clothes, bedding and hair hygiene while only 32.7% of the participants had teeth hygiene and all claimed complete compliance to medication intake. The majority lacked reading and writing skills while none had any computer or sport skills at all. In terms of body language and social interaction, 87.8% made eye contact and 70% smiled (70.7%), but 75.5% lacked good speech and had no insight (68.7%). The sociodemographic characteristics and the lifestyle practices are detailed in Table 1.

Table 1. Sociodemographic characteristics and life practices of the study participants (N=147)

	Total (n=147, 100%)	Male (n=78, 53.1%)	Female (n=69, 46.9%)	p-value
Age:				

01-Oct	3 (2)	0 (0)	3 (2)	0.13
Nov-20	46 (31.1)	24 (16.3)	22 (15)	
21-30	61 (41.5)	38 (25.9)	23 (15.6)	
30-40	35 (23.8)	16 (10.9)	19 (12.9)	
41-50	1 (0.7)	0 (0)	1 (0.7)	
50 and more	1(0.7)	0 (0)	1 (0.7)	
Education:				
Uneducated	144 (98)	78 (53.1)	66 (44.9)	0.063
primary	3 (2)	0 (0)	3 (2)	
Marital status:				
Single	145 (98.6)	78 (53.1)	67 (45.6)	0.318
Married	1 (0.7)	0 (0)	1 (0.7)	
Divorced	1 (0.7)	0 (0)	1 (0.7)	
Years of residence:				
2 to 5 years	22 (15)	10 (6.8)	12 (8.2)	0.644
6 to 9 years	28 (19)	14 (9.5)	14 (9.5)	
10 or more	97 (66)	54 (36.7)	43 (29.3)	
Legal problems	2 (1.4)	1 (0.7)	1 (0.7)	0.93
Mobility:				
Fully mobile	45 (30.6)	15 (10.2)	30 (20.4)	0.015*
Mobile with difficulty	24 (16.3)	16 (10.9)	8 (5.4)	
With support	16 (10.9)	10 (6.8)	6 (4.1)	
bedridden	62 (42.2)	37 (25.2)	25 (17)	
Schizophrenia	2 (1.4%)	1 (0.7)	1 (0.7)	0.945
Psychotic disorder	9 (6.1)	3 (2)	6 (4.1)	0.221
Organic disorder	5 (3.4)	0 (0)	5 (3.4)	0.016*
Sleep disturbances	2 (1.4)	2 (1.4)	0 (0)	0.18
Mood disorder	1 (0.7%)	1 (0.7)	0 (0)	0.345
Mental retardation:				
Mild	17 (11.6)	1 (0.7)	16 (10.9)	0.000*
Moderate	33 (22.4)	15 (10.2)	18 (12.2)	
Severe	56 (38.1)	27 (18.4)	29 (19.7)	
profound	41 (27.9)	35 (23.8)	6 (4.1)	
Autism	6 (4.1)	6 (4.1)	0 (0)	0.019*
Disruptive behavior	15 (10.2)	6 (4.1)	9 (6.1)	0.285
ADHD	15 (10.2)	6 (4.1)	9 (6.1)	0.285
Other disorders	32 (21.8)	12 (8.2)	20 (13.6)	0.046*
Psychotropic medication:				0.013*

Anti-depressant	1 (0.7)	0 (0)	1 (0.7)	
Anti-epileptic	46 (31.4)	33 (22.5)	13 (8.9)	
Anti-psychotic	24 (16.3)	13 (8.9)	11 (7.5)	
Cortisol	1 (0.7)	0 (0)	1 (0.7)	
Vitamin supplements	1 (0.7)	0 (0)	1 (0.7)	
Psychiatric diagnosis:				
ADHD	17 (11.6)	6 (4.1)	11 (7.5)	0.041*
Autism	6 (4.1)	6 (4.1)	0 (0)	
Behavioral problems	2 (1.4)	2 (1.4)	0 (0)	
Depression	1 (0.7)	0 (0)	1 (0.7)	
Developmental disabilities	1 (0.7)	1 (0.7)	0 (0)	
Insomnia	1 (0.7)	0 (0)	1 (0.7)	
Schizophrenia	2 (1.4)	0 (0)	2 (1.4)	
No psychiatric illness	117 (79.6)	63 (42.9)	54 (36.7)	
Medical diagnosis:				
Hypertension	1 (0.7)	0 (0)	1 (0.7)	0.286
Diabetes	8 (5.4)	6 (4.1)	2 (1.4)	0.195
UTI	1 (0.7)	0 (0)	1 (0.7)	0.286
Spastic Paralysis	2 (1.4)	0 (0)	2 (1.4)	0.13
Quadriplegia	13 (8.8)	12 (8.2)	1 (0.7)	0.003
Epilepsy	39 (26.5)	27 (18.4)	12 (8.2)	0.018
Paraplegia	15 (10.2)	13 (8.8)	2 (1.4)	0.006
Hypothyroidism	1 (0.7)	0 (0)	1 (0.7)	0.286
Hemiplegia	3 (2)	2 (1.4)	1 (0.7)	0.633
Hemiparesis	1 (0.7)	0 (0)	1 (0.7)	0.286
Down syndrome	6 (4.1)	4 (2.7)	2 (1.4)	0.495
Cardiac an	1 (0.7)	0 (0)	1 (0.7)	0.286
Poor vision	1 (0.7)	1 (0.7)	0 (0)	0.345
Anemia	1 (0.7)	0 (0)	1 (0.7)	0.286
Aphasia	1 (0.7)	0 (0)	1 (0.7)	0.286
Cerebral Palsy	8 (5.4)	2 (1.4)	6 (4.1)	0.102
Microcephaly	1 (0.7)	1 (0.7)	0 (0)	0.345
Hygiene: yes				
Nails	145 (98.6)	78 (53.1)	67 (45.6)	0.132
Clothes	147 (100)	78 (53.1)	69 (46.9)	
Hair	147 (100)	78 (53.1)	69 (46.9)	
Teeth	48 (32.7)	71 (48.3)	28 (19)	0.000*
Bed	147 (100)	78 (33.1)	69 (46.9)	
Eye contact	129 (87.8)	65 (44.2)	64 (43.5)	0.082

Smile	104 (70.7)	60 (40.8)	44 (29.9)	0.08
Conversation	41 (27.9)	10 (6.8)	31 (21.1)	0.000*
Speech	36 (24.5)	9 (6.1)	27 (18.4)	0.000*
Insight:				
No insight	101 (68.7)	66 (44.9)	35 (23.8)	0.000*
Understanding about the illness	14 (9.5)	2 (1.4)	12 (8.2)	
Illness is physical or mental	19 (12.9)	4 (2.7)	15 (10.2)	
They think they need psych help	13 (8.8)	6 (4.1)	7 (4.8)	
Reading/writing skills	2 (1.4)	0 (0)	2 (1.4)	0.13
GAF:				
01-Oct	27 (18.4)	0 (0)	27 (18.4)	0.000*
Nov-20	9 (6.1)	5 (3.4)	4 (2.7)	
21-30	55 (37.4)	51 (34.7)	4 (2.7)	
31-40	16 (10.9)	13 (8.8)	3 (2)	
41-50	14 (9.5)	4 (2.7)	10 (6.8)	
51-60	13 (8.8)	3 (2)	10 (6.8)	
61-70	11 (7.5)	2 (1.4)	9 (6.1)	
71-80	1 (0.7)	0 (0)	1 (0.7)	
91-100	1 (0.7)	0 (0)	1 (0.7)	

*Legend: * significant p value, GAF=global assessment of functioning, UTI=urinary tract infection, ADHD=attention deficit hyperactivity disorder.*

In terms of follow up, almost three quarters of the patients did not visit a psychiatrist (73.5%) and more did not visit an occupational therapist (77.6%). However, a large number (78.9%) visited a psychologist (78.9%) or a social worker (62.6%)

once in 4 weeks. On the social level, 30.6% visited a family member once a month and 86.4% did recreational activities once in 4 weeks although a large number (87.1%) did not approach any teaching facilities. These details are presented in Table 2.

Table 2. Presentation of medical and occupational visits and their frequencies (N=147)

Number of psychiatrist visits:				
No visit	108 (73.5)	63 (42.9)	45 (30.6)	0.047*
Once in 4 weeks	38 (25.9)	14 (9.5)	24 (16.3)	
Once in 2 weeks	1 (0.7)	1 (0.7)	0 (0)	
Number of psychologist visits				
Once in 4 weeks	116 (78.9)	66 (44.9)	50 (34)	0.042*
Twice a week	21 (14.3)	11 (7.5)	10 (6.8)	
Thrice a week	9 (6.1)	1 (0.7)	8 (5.4)	
Everyday	1 (0.7)	0 (0)	1 (0.7)	

Number of social worker visit:				
Once in 4 weeks				0.000*
Twice a week	92 (62.6)	67 (45.6)	25 (17)	
Thrice a week	23 (15.6)	11 (7.5)	12 (8.2)	
	32 (21.8)	0 (0)	32 (21.8)	
Number of occupational therapist visit:				
None				0.000*
Once in 4 weeks	114 (77.6)	71 (48.3)	43 (29.3)	
Twice a week	26 (17.7)	7 (4.8)	19 (12.9)	
Thrice a week	4 (2.7)	0 (0)	4 (2.7)	
	3 (2)	0 (0)	3 (2)	
Family member visit:				
Twice a month	16 (10.9)	1 (0.7)	15 (10.2)	0.000*
Once a month	45 (30.6)	15 (10.2)	30 (20.4)	
Once in 6 months	18 (12.2)	7 (4.8)	11 (7.5)	
Once in 12 months	36 (24.5)	29 (19.7)	7 (4.8)	
No visit	32 (21.8)	26 (17.7)	6 (4.1)	
Recreational activities:				
Once in 4 weeks	127 (86.4)	78 (53.1)	49 (33.3)	0.000*
Twice a week	9 (6.1)	0 (0)	9 (6.1)	
Thrice a week	11 (7.5)	0 (0)	11 (7.5)	
Physiotherapy:				
No visit	42 (28.6)	14 (9.5)	28 (19)	0.000*
Once in 4 weeks	5 (3.4)	3 (2)	2 (1.4)	
Twice a week	29 (19.7)	13 (8.8)	16 (10.6)	
Thrice a week	57 (38.8)	34 (23.1)	23 (15.6)	
Everyday	14 (9.5)	14 (9.5)	0 (0)	
Teaching facilities school:				
None	128 (87.1)	76 (51.7)	52 (35.4)	0.001*
Everyday	13 (8.8)	1 (0.7)	12 (8.2)	
Twice a week	5 (3.4)	1 (0.7)	4 (2.7)	
Thrice a week	1 (0.7)	0 (0)	1 (0.7)	

Gender differences in diagnosis, treatment, and lifestyles

Significant differences were found in terms of mobility where the number of mobile females was twice as much as that in male participants (n=30, 20.4% vs. n=15, 10.2%; p=0.015). Additionally, organic disorders were only noted in females while

autism was only reported in males. In terms of medications, anti-epileptics were utilized significantly more in male participants than in females (n=33, 22.5% vs. n=13, 8.9%; p=0.013). This is because more male participants were

diagnosed with epilepsy than female participants (n=27, 18.4% vs. n=12, 8.2%; p=0.018). Similarly, higher rates of quadriplegia and paraplegia were seen in male participants in comparison to female participants. In terms of hygiene, male participants demonstrated slightly better hygiene in nails, clothes, hair, and bed while this difference became significant between the genders with teeth hygiene. Male participants maintained better eye contact and smile in comparison to the female participants although the difference was not significant. However, the female population was significantly more fluent in conversations and speech than their male counterparts. More male participants reported not visiting their psychiatrists, psychologist, social worker or occupational therapist at all than females. On the other hand, more female participants visited their family members than males did and participated in recreational activity more frequently than male participants as presented in Table 2.

The global assessment of functioning scale findings

The highest frequency in GAF range was than between 21-30 with 37.4% of the study population followed by the range between 1-10 with 18.4%. However no male participants scored this latter range, the difference was significant with the prior range with more male scoring 21-30 than females (n=13, 8.8% vs. n=3, 2%; p=0.00). The cut-off scoring of 40 was used to evaluate the functionality status against physical and psychological conditions. It was shown that those who reported good social skills in terms of smiles scored significantly higher on the GAS score than those with poorer social skills (n=36, 90% vs. n=4, 10%; p=0.002). Similarly for conversation skills (n=29, 72.5% vs. n=11, 27.5%; p=0.00) and speech (n=26, 65% vs. n=14, 35%; p=0.00). Additionally, significantly more females scored higher than 40 on the GAF scale when compared to male participants (n=31, 77.5% vs. n=9, 22.5%; p=0.00).

Discussion

The aim of this study is to evaluate the characteristics of the patients seeking care in one rehabilitation. Scored higher on the GAF score in the current study, gender had no significance on these scores in previous studies. However, good conversation and speech skills were associated with higher GAS scores which come in line with the previous studies. This finding is expected since the GAF score reflects the social functioning of the patients.

Cognitive deficit reduces the ability to function independently and provide self-care. This is reflected through poor physical and oral hygiene. The findings

service center in Saudi Arabia and evaluate the impact of these services on the patients' GAF scores. This was addressed through a cross-sectional observational study. Rehabilitation services were shown to improve the social skills and the quality of life of patients with psychiatric illness [15]. These services provide continuous monitoring and follow up on the patients' progress to help subjectify the treatment plans and help patients reach their highest functional ability possible [16]. Additionally, they can improve the quality of life of these patients which in turn has an impact on the improvement of the GAS scoring [17]. The occurrence and the number of visits to healthcare providers in our study is somehow concerning considering the low rates. Visiting therapists is important in psychiatric rehabilitation, Sheehan, Verdun [18] showed that interventions that involved an occupational therapist improved social connection and wellbeing. Additionally, around 21% did not visit a family member at all which is surprising in a collectivist society [19]. Studies have focused on the need to sustain the patient in the community which poses as an important resource in the overall management. This in addition to viewing the family and including them as a collaborative partner in the overall treatment plan [20]. This is especially important in female patients who value connectedness greatly [21]. This was reflected in our study where significantly more females visited their family members in comparison to male participants.

In terms of patient characteristics, the main results of the current study showed relatively low GAF scores in both genders with the highest frequency being between 21-30. These low scores are frequent in some mental and psychiatric disorders such as patients having schizophrenia [22] although our study had low percentage of patients with this disorder. However, in our study, the highest psychiatry illness was ADHD and Autism accounting for 11% and 4% of this population. These illnesses were also associated with low GAF scores in recent literature [23,24]. Although, female participants

of the current study contracted the former notion of poor physical hygiene where most if not all provided nail, clothes, hair and bed hygiene. This striking finding could be the result of adequate follow up from the center and the family support which is evident in a collectivist Arabic culture. On the other hand, oral hygiene was practiced in only 32.7% of the current study population which comes in line with the international literature reporting that this population had the highest rates of oral diseases. This was stated in a scoping review that used the Arksey

O'Malley framework and aimed to identify barriers of accessing oral healthcare among people with disabilities. The review described the access of people with disabilities to oral and dental healthcare as a multi-dimensional concept that is not often addressed and discussed. Psychosocial rehabilitation requires patients to be involved in their own care and emphasizes having a full social and recreational life.

Although the cut-off scoring is not widely used for the GAF scale, the differences noted aligned with the findings of the literature where male scored less on this scale specifically in patients with schizophrenia. While this difference was only evident in different genders rather than in the psychiatric diagnosis, it is worth looking into in future studies to isolate the effects of possible sociodemographic variables. Further, the remaining significant findings in relation to the cut-off score in this study were related to social functioning and are no surprise since this scale is used to measure the social functioning of the patients. This finding enhances the usability of this scale in evaluating the social status of patients with psychotic disorders

One major limitation in this study was the lack of generalizability where the mental conditions reported lacked the most common ones namely anxiety disorders and schizophrenia. This should be tackled in future research with stratified sampling when necessary to assure inclusion of all the common conditions.

Conclusion

In conclusion, this study showed the patients characteristics of those seeking care in Majmaah rehabilitation center. Rehabilitation services were seen to be provided for both genders but perceived differently between male and female participants. This was evident in the differences in visits to the health care professionals. The low GAF scores showed the poor functionality of the patients in terms of social, occupational and psychiatric functioning. Interventions that involve family involvement, oral care and proper follow up with the therapists should be initiated and proper follow up are necessary. Future studies should include patients with more common mental ailments such as anxiety disorders and schizophrenia.

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