A COMPARATIVE STUDY OF TREATMENT DURATION FOLLOWUP AND INCLINATION TOWARDS TREATMENT FROM GOVERNMENT HOSPITALS OR PRIVATE CLINCS BY GERIATRIC PATIENTS WITH MENTAL HEALTH DISORDERS IN GUJARAT.

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ABSTRACT

Background: Gujarat an industrialized state in Western India is home to around 4.53 million geriatric patients above the age of 60 years. With close to an estimated 0.93 million of these silver haired having mental health disorders their treatment is further stretched with an inadequate ratio of 1 psychiatrist for approximately 3700 geriatric patients with mental health disorders. This study is conducted in 5 major districts of Gujarat which accounts for 60% of the Psychiatrists treating 27% of the elderly with mental health disorders at major Government Civil hospitals and in Private clinics.

Methods: A stratified randomized sampling was used to take the feedback through personal interview from around 50 psychiatrists of varying clinical experiences from both Government hospitals as well as Private clinics based at 5 major districts namely Ahmedabad, Vadodara, Rajkot, Jamnagar and Junagadh. A type of snowballing technique was used to identify 150 geriatric patients of these doctors (after taking their due consent) who had mental health disorders namely Dementia, Depression, Psychosis and Anxiety.

Results: There is a greater inclination of geriatric patients with mental health disorders for getting treated by Psycho-Geriatric Medical practitioners or Psychiatrists (as is generally referred to) in Government Hospitals/Institutions as compared to Private practitioners (19% Vs 12%). Female senior citizens' are more inclined than their male counterparts to go for psychiatric care in Government Hospitals/Institutions as compared to Private practitioners

(49% Vs 42%). Male senior citizens' on the other hand are more inclined to Private practitioners' than those of Government Hospitals/Institutions (58% Vs 51%).

KEYWORDS: Psycho-Geriatric Medical Practitioner, Mental health, Senior citizens.

INTRODUCTION

In Gujarat, the mental health issues are addressed by 4 Major Government Mental hospitals based at Ahmedabad, Vadodara, Bhuj & Jamnagar. With around 253 Psychiatrists available in both Government and Private sector for the treatment of an estimated 0.93 million senior citizens, the ratio of 1 psychiatrist for 3700 geriatric patients with Mental Health disorders is an herculean task. There are Civil hospitals at major district levels with no specific operating Geriatric OPDs. There are many Non -Government Organizations (NGOs) but few have the capacity and exposure in the area of community-based approaches or are having effective models vital for dealing with mental healthcare of the senior citizens'

The role of private Psycho-geriatric clinics for the comprehensive mental healthcare treatment of senior citizens' is virtually non-existent in Gujarat. The one and only being GIPS launched in March 2015 in Ahmedabad being the first of its kind. This establishment using the currently available infrastructure of community based health workers, clinical psychologists & trained nursing staff in conjunction with psychiatrists can give the necessary fill-up in improving the Quality of Life standards of the mental health of senior citizens'.

Review of Literature

Chandrani and Jivarajani et al. in their study (2009) 'Health and social problems of geriatric population in an urban setting of Gujarat, India' had interviewed 311 senior citizens' in the city of Vadodara, Gujarat with the following outcomes:

i.   Highlights of the Socio-economic status of the senior citizens are as follows:

- 61% of the senior citizens' lived in joint family which was in line with other national studies by Padda et al, Singh et al., Sivamurthy et al.
- 13% of the senior citizens' respondents were found to be illiterate, this compared favorably to the national data of 63% being illiterate
- Illiteracy was higher in females (16.5%) versus (10.8%) seen in males.
- 57% females versus 43% males were deprived of finances, while 47% of the senior citizens' had feelings of insecurity.

ii. Highlights of social/health problems of senior citizens' and attitudes towards life are as follows:

- All respondents had health problems, the most common being hypertension, arthritis, diabetes or constipation. Most had more than one ailment with women found having higher incidence of osteo-arthritis and diabetes.

- 72 % of the senior citizens' felt neglected by their family members unlike national studies by Singh et al which reported 26.1% and Prakash et al. reporting 17.3%

- 56.3% of the senior citizens' respondents were not happy with life which was in line with 53.2% as reported by Singh et al.

- 23.8% of the senior citizens' had no social contacts outside home which is in line with 24.8% as reported by Goel et al.

- Feelings of sadness were found to be due to illness (41%) and loss of spouse (37.6%) while Singh et al. reported loneliness (20%), family neglect (26.1%) and illness (11.5%) as main reasons for feeling sad.

- 12.2% of the senior citizens' utilized geriatric welfare services which was much lower to the figure of (45%) of senior citizens' utilizing as reported by Goel et al.

Tiwari S C , Pandey N M, in their study (2012) titled 'Status and requirements of Geriatric Mental Health services in India : An evidence based commentary' state that the average prevalence of mental health conditions both in rural and urban communities indicates that 20.5% of the older adults are suffering from one or the other problems.

Scope of Study

The study is done on 5 select districts of Gujarat namely Ahmedabad, Vadodara, Rajkot, Jamnagar & Junagadh which accounts for 60% of practising psychiatrists of Gujarat treating 27% of the Senior citizens' with mental health disorders. This study will try to assess the treatment duration followup and inclination towards treatment from the psychiatrists based at Government hospitals/ Institutions versus Private clinics in these 5 select districts.

Table 1.1: The 5 districts account for 27% of the senior citizens' with mental disorders of Gujarat state treated by 60% of the Psychiatrists of the state of Gujarat.

District	Psychiatrist	Senior citizens'	Senior citizens' with Mental Disorders
Ahmedabad	94	528398	108322
Vadodara	23	232035	47567
Rajkot	16	226142	46359
Jamnagar	12	105573	21642
Junagadh	6	114420	23456
Total	151	1206568	247346
% of Tot. Gujarat State	60%	27%	27%

Source: Questionnaire of Researcher

Sample design

A stratified randomized sampling was used to take the feedback from around 50 psychiatrists of varying clinical experiences from both Government hospitals as well as Private clinics based at 5 major districts namely Ahmedabad, Vadodara, Rajkot, Jamnagar and Junagadh. A type of snowballing technique was used to identify 150 geriatric patients of these doctors (after taking their due consent) who had mental health disorders namely Dementia, Depression, Psychosis and Anxiety.

Data Collection

The scheduled questionnaire which is comprehensive and structured in manner to be conducted for the doctors (Annexure 1) and patients (Annexure 2) was duly undertaken through personal interview method by professionals in the healthcare business. The researcher utilized them as a resource in obtaining the consent of the doctors to fill their questionnaires as well as to be able to personally interview their patients as well.

Table 1.2: Questionnaire outcomes done by the researcher.

SL.No	District Name	Code	Govt. /Civil Hospital		Private Practice		Tot. Questionnaires	
			Drs	Patients	Drs	Patients	Drs	Patients
1	Ahmedabad	1	14	42	9	31	23	73
2	Vadodara	2	4	13	5	12	9	25
3	Rajkot	4	2	6	4	14	6	20
4	Jamnagar	3	4	12	3	10	7	22
5	Junagadh	5	1	2	4	12	5	14
TOTAL			25	75	25	79	50	154

Period of Study

The questionnaire for the 50 psychiatrists and their 154 patients as per the outcomes mentioned in Table 1.2 was obtained through personal interview method during the period of 1 year commencing June 2014 to May 2015.

Duration of treatment follow up for Psycho-Geriatric mental disorders –Dementia, Depression, Psychosis and Anxiety at Government hospitals and Private Clinics in Gujarat

The duration of treatment follow up of mental health disorders be it Dementia, Depression, Psychosis or Anxiety disorders is of chronic nature. Hence the researcher wanted to first assess the senior citizens' duration of treatment keeping in mind their gender and duration of treatment from both Government hospitals and Private clinics setup.

Table 1.3: Duration of treatment

Sl. No	No. of Years	Median Yrs	Male patients	Avg treatment Male	Female patients	Avg treatment female	No of Patients	No. of Govt patients	Avg. Period of treatment of Govt. patients	No. of Private patients	Avg. Period of treatment of Pvt. patients
1	0- 1 yr	0.5	33	16.5	13	6.5	46	26	13	20	10
2	1-2 Yrs	1.5	46	69	11	16.5	57	29	43.5	28	42
3	2-5 Yrs	3.5	27	94.5	7	24.5	34	14	49	20	70
4	5- 6 yrs	5.5	12	66	5	27.5	17	6	33	11	60.5
	Total/Avg		118	2.1	36	2.1	154	75	1.8	79	2.31

Source: Questionnaire of Researcher

From Table 1.3 the researcher has found that the average duration of treatment followup irrespective of gender is 2.1 years. Moreover broadly it appears that the duration of treatment in Government setup is lesser at 1.8 years as compared to the average of 2.1 years. The duration of treatment follow up in private setup is longer which is 2.3 years as compared to the overall average of 2.1 years. Hence prima facie it appears irrespective of gender and the indication of treatment the senior citizens' undergo a shorter duration of treatment in Government Hospitals / Institutions as compared to those visiting Private clinics for treatment of their mental health disorders.

The researcher has thereafter tried to assess the duration of treatment follow up indication wise irrespective of gender for all the senior citizens to see how it compares overall with the average duration of treatment at 2.1 years.

Table 1.4: Indication wise duration of treatment

Treatment Yrs/ Indication	Median Yrs	No of Dementia patients	Avg duration of Treatment - dementia	No. of Depression patients	Avg duration of Treatment - depression	No of Psychosis/ Aggressive Behavior patients	Avg duration of Treatment - Psychosis	No. of Anxiety/ Stress disorder patients	Avg duration of Treatment - Anxiety	Avg Tot. treatment Yrs
0-1Yr	0.5	23	11.5	15	7.5	2	1	6	3	23
1-2Yr	1.5	16	24	24	36	14	21	3	4.5	85.5
2-5Yr	3.5	12	42	10	35	9	31.5	3	10.5	119
5 -6Yr	5.5	7	38.5	4	22	2	11	4	22	93.5
Total/Avg		58	2.0	53	1.9	27	2.4	16	2.5	2.1

Source: Questionnaire of Researcher

From table 1.4 above it is clear that against the average overall duration of treatment of 2.1 years, the average duration of treatment for anxiety was longest at 2.5 years while the treatment for depression was lowest at 1.9 years. The average duration of treatment in ascending order is for depression, dementia, psychosis and anxiety which is 1.9, 2.0, 2.4 and 2.5 years respectively.

The researcher has tried to examine whether these differences of indication wise duration of treatment is owing to sample fluctuations and has therefore applied the One Sample sign test as follows:

Table 1.5: Average duration of treatment variation from mean

Particulars	Avg No Yrs	Variation from Mean
Avg duration of Treatment – dementia	2.0	–
Avg duration of Treatment – depression	1.9	–
Avg duration of Treatment – Psychosis	2.4	+
Avg duration of Treatment – Anxiety	2.5	+

Source: Questionnaire of Researcher

H_0: The overall average duration of treatment as 2.1

From table 1.5: The calculated values for S =2

From table 1.5: The calculated values for K is:

K value = (n-1)/2- 0.98 X $\sqrt{n}$

= (4-1)/2 – 0.98 X $\sqrt{4}$

= 1.5-1.96= -0.46

As the S value (2) is greater than the K value (-0.46) the null hypothesis is accepted meaning that the average duration of treatment for all indications can be safely taken as 2.1 years and all other minor differing values indication wise are because of sample fluctuations only.

The researcher has also tried to find out the relative importance of gender for each of the indications namely- dementia, depression, psychosis and anxiety by using the $\chi 2$ test

Table 1.6: Gender wise indication

Sl.No.	Indications	Tot. Male patients	Tot.Female patients	Total
1	Dementia	45	13	58
2	Depression	40	13	53
3	Psychosis/ Aggressive Behavior	20	7	27
4	Anxiety/ Stress disorder	13	3	16
	Total	118	36	154

Source: Questionnaire of Researcher

Using the formula: $\chi 2 = \sum (O-E)^2 / E$

From Table 1.6, Calculated value of $\chi 2$

$\chi 2 = \sum (45-44.44)^2 / 44.44 + (40-40.61)^2 / 40.61 + (20-20.69)^2 / 20.69 + (13-12.26)^2 + (13-13.56)^2 / 13.56 + (13-12.39)^2 / 12.39 + (7-6.31)^2 / 6.31 + (3-3.74)^2 / 3.74$

= 0.007+0.009+0.023+0.045+0.023+0.030+0.075+0.146

= 0.358

Table value of $\chi 2$ for (4-1) X (2-1) or 3 levels of freedom for 5% level of significance is 7.815

CONCLUSION

Since the calculated value of χ2 (0.358) is much lesser than the table value of χ2 (7.815) at 5% level of significance for 3 degrees of freedom hence the null hypothesis is accepted showing there is no significant difference gender wise towards the incidence of indications namely dementia, depression, Psychosis and anxiety.

The researcher has also tried to find out the relative importance if any exists between Government and Private clinic treatment of indications namely dementia, depression, psychosis and anxiety by using the χ 2 test (Table 1.7)

Table 1.7: Indication wise treatment in Government Vs Private clinics

Sl.No.	Indications	Tot. Govt patients	Tot. Private patients
1	Dementia	28	30
2	Depression	27	26
3	Psychosis/ Aggressive Behavior	11	16
4	Anxiety/ Stress disorder	9	7
	Total	75	79

Source: Questionnaire of Researcher

Using the formula: $\chi2 = \sum (O-E)^2/ E$

From Table 1.7, calculated value of χ2

$\chi2 = \sum (28-28.25)^2/ 28.25 + (27-25.81)^2 /25.81 + (11-13.14)^2/ 13.14 + (9-7.79)^2/ 7.79 + (30-29.75)^2/ 29.75 + (26-27.19)^2/ 27.19 +(16-13.85)^2/ 13.85+(7-8.20)^2/ 8.20$

$= 0.001+0.055+0.349+0.188+0.002+0.052+0.334+0.176$

$=1.155$

Table value of χ2 for (4-1) X (2-1) or 3 levels of freedom for 5% level of significance is 7.815

CONCLUSION

Since the calculated value of χ2 (1.155) is much lesser than the table value of χ2 (7.815) at 5% level of significance for 3 degrees of freedom, hence the null hypothesis is accepted

showing there is no significant difference patient wise towards treatment at Government Hospitals and Private clinics for the indications dementia, depression, psychosis and anxiety.

Overall Conclusion: It has been established that there is a similar relative duration of treatment follow up for dementia, Depression, Psychosis and Anxiety among patients regardless of gender and place of treatment- Government or Private setup.

The researcher has next tried to study the indication wise incidence of treatment follow up across gender and type of treatment institution namely Government hospitals and Private clinics (Table 1.8).

Table 1.8: Indication wise duration of treatment

Sl.No.	Indications	Tot.No. of Patients	Tot. % Incidence	Tot. Male patients	% incidence-Male	Tot.Female patients	% incidence-Female	Tot. Govt patients	% incidence-Govt.	Tot. Private patients	% incidence-Pvt.
1	Dementia	58	38%	45	38%	13	36%	28	37%	30	38%
2	Depression	53	34%	40	34%	13	36%	27	36%	26	33%
3	Psychosis/ Aggressive Behavior	27	18%	20	17%	7	19%	11	15%	16	20%
4	Anxiety/ Stress disorder	16	10%	13	11%	3	8%	9	12%	7	9%
	Total	154	100%	118	100%	36	100%	75	100%	79	100%

Source: Questionnaire of Researcher

From table 1.8 it appears that the overall incidence of dementia is highest at 38% followed by depression 34%, psychosis 18% and anxiety at 10%. The indication wise ranking of incidence from highest to lowest is in same order irrespective of gender and treatment institution- Government hospital or Private clinical.

Treatment inclination of senior citizens' patients towards Government Hospitals and in Private clinic setup as undertaken in the study.

As the scope of this study is confined to the 5 major districts of gujarat namely Ahmedabad, Vadodara, Rajkot, Jamnagar, Junagadh which accounts for 60% of the psychiatrist population of Gujarat state treating 27% of the senior citizens' with mental disorders, it becomes imperative to classify the profile of these psychiatrists in both the private and Government/ Institutional setup based on their clinical practise as indicated in table 1.9.

Table 1.9: Classification of Psycho-Geriatric Medical Practitioners based on Clinical experience

Particulars	Young	Prime	Senior
Clincal Practise	Upto 15 Years	15-30 Years	30 Years

The researcher based on the primary classification of the 50 sampled psychiatrists as shown in Table 1.9, has tried to undertake the comparative study of the inclination towards their treatment of senior citizens' male and female in both Government Hospital/ Institutions as well as for those going to Private practising doctors. The comparative summary of the patient catchment of senior citizens' in both Private and Government setup is shown in Table 1.10.

Table 1.10: The study of the senior citizens'catchment population at Government Hospitals/Institutions as compared to Private clinics

Government/ Institution	No of Drs.	Elderly Nos/week	Total Patient Nos/Wk	Elderly Patient %	Male		Female	
					Nos	%	Nos	%
Young	18	535	2598	21%	290	54%	245	46%
Prime	7	320	1860	17%	147	46%	173	54%
Senior								
Total	25	855	4458	19%	437	51%	418	49%
Private clinic	No of Drs.	Elderly Nos/week	Total Patient Nos/Wk	Elderly Patient %	Male		Female	
					Nos	%	Nos	%
Young	17	445	3570	12%	253	57%	192	43%
Prime	7	325	2670	12%	193	59%	132	41%
Senior	1	40	300	13%	20	50%	20	50%
Total	25	810	6540	12%	466	58%	344	42%
Grand Total	50	1665	10998	15%	903	54%	762	46%

The profiling of Psycho-Geriatric practise and the inclination of their patients for treatment of their mental disorders throws up several interesting insights. There is a greater inclination of senior citizens' being treated daily in Government Hospitals/Institutions as compared to Private practise (19% Vs 12%). Female senior citizens' are more inclined to go for psychiatric care in Government Hospitals/Institutions as compared to Private practitioners (49% Vs 42%). Male senior citizens' on the other hand are more inclined to Private practitioner treatment than from Government Hospitals/ Institutions (58% Vs 51%).

Within the Government/Institutuional setup female senior citizens' have a greater inclination for treatment by the 'Prime' psychiatrists (54%) as compared to their male counterparts (54%) being treated by the 'Young' psychiatrists. In the Private clinic practise setup there appears to be almost similar inclination by both female and male patients to be treated across all classifications i.e. 'Young', 'Prime' and 'Senior'

RESULTS AND DISCUSSIONS

The average treatment followup duration for Mental health disorders of the elderly namely dementia, depression, psychosis and anxiety was found to be 2.1 years. The average duration of treatment follow up in ascending order was depression, dementia, psychosis and anxiety being 1.9, 2.0, 2.4 and 2.5 years respectively. Moreover it has been established that there is similar relative duration of treatment for dementia, depression, psychosis and anxiety among patients being 2.1 years is regardless of gender and place of treatment- Government or Private setup.

There is a greater inclination of geriatric patients with mental health disorders for getting treated by Psycho-Geriatric Medical practitioners or Psychiatrists (as is generally referred to) in Government Hospitals/ Institutions as compared to Private practitioners (19% Vs 12%). Female senior citizens' are more inclined than their male counterparts to go for psychiatric care in Government Hospitals/ Institutions as compared to Private practitioners (49% Vs 42%). Male senior citizens' on the other hand are more inclined to Private practitioners' than those from Government Hospitals/ Institutions (58% Vs 51%).

Conflict of interest declaration
None.

Research Declaration

This is original research data based on interview method of Psychiatrists as well as their geriatric patients after taking their doctors due consent

Description of authors' roles

Author

Michael W D'Souza designed the study, supervised the data collection and wrote the paper.

Co-author

Prof. Rajesh Sharma assisted with writing the paper in line with the statistical framework and its outcomes.

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