Education Research Statistics Descriptive and Comparative

Assignment #6

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In comparing data from the 2015 Mental Health Services Survey data set, variables needed to be combined to form continuous variables as most data were reported in binary form by answering ‘yes’ or ‘no’ to survey questions. Data were categorized and grouped by type. This allowed me to define three new variables: mental health services (MHSERVICES), other related services (ORSERVICES), and treatment modality (TXMOD). Data for whether or not a facility provides a sliding fee scale were combined to form a new variable (newFS) in which all responses which were not ‘yes,’ were assigned ‘no.’ The data set was trimmed to include only those facilities surveyed in Texas.

Data analysis provided a mean value for each variable at all Texas facilities. The mean for mental health services was 10.58 indicating the average number of the identified services offered at treatment facilities in Texas. The standard deviation was 3.56 indicating a moderate variation in the grouping of responses around the mean score. The variance was 12.66 indicating a large variation in the type of response given as to the number of mental health services offered. (Table 1).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 1 All Texas Facilities Surveyed | | | |  |  |
|  | Mean | Median | Range | sd | var |
| Mental Health Services | 10.58 | 10.00 | 18.00 | 3.56 | 12.66 |
| Other Related Services | 5.30 | 5.00 | 12.00 | 3.18 | 10.09 |
| TX Modality | 3.94 | 4.00 | 8.00 | 1.44 | 2.09 |
|  |  |  |  |  |  |
| data source: National Mental Health Services Survey 2015 | | | | | |

The mean for other related services was 5.30 indicating a lower average number of services that are not strictly related to mental health care at treatment facilities in Texas. The standard deviation was 5.00 indicating a moderate grouping of responses around the mean. The variance (10.09) indicated a wider range of responses to the survey questions related to other services. (Table 1).

The mean for treatment modality (types of therapeutic approaches) provided at mental health facilities in Texas was 3.94 indicating a limited range of treatment modalities at most facilities. This could be a result of facilities specializing in one therapeutic treatment approach rather than offering a broad range of modalities. The standard deviation was 1.44 indicating that most responses were close to the mean score. The variance was 2.09 indicating a small range of variation in responses to survey questions related to treatment modalities offered. (Table 1). Again, possibly indicating facilities may adhere to a specific treatment modality rather than offering a range of modalities.

In comparing the mean scores for the three variables for facilities with or without a sliding fee scale, some differences were noted. The mean scores for mental health services were 11.35 and 9.4 respectively indicating a slightly higher average number of services provided at facilities with a sliding fee scale than those without. The mean scores for other related services were 6.05 and 4.16 respectively indicating again, a slightly higher average number of services offered at facilities with a sliding fee scale as opposed to those without. The mean scores for treatment modality were 3.75 and 4.07 respectively indicating very little difference in the number of treatment modalities offered by mental health facilities in Texas with or without a sliding fee scale. (Tables 2 and 3).

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 2 Facilities with Sliding Fee Scale | | | | | | | |  | |  | |
|  | Mean | Median | | | Range | | | sd | | var | |
| Mental Health Services | 11.35 | 11.00 | | | 18.00 | | | 3.50 | | 12.24 | |
| Other Related Services | 6.05 | 6.00 | | | 12.00 | | | 2.94 | | 8.60 | |
| TX Modality | 3.75 | 4.00 | | | 6.00 | | | 1.45 | | 2.10 | |
|  |  |  | | |  | | |  | |  | |
| data source: National Mental Health Services Survey 2015 | | | | | | | | | | | |
| Table 3 Facilities with No Sliding Fee Scale | | | | | | | | |  | |
|  | | | Mean | Median | | Range | sd | | var | |
| Mental Health Services | | | 9.4 | 9.00 | | 15.00 | 3.25 | | 10.58 | |
| Other Related Services | | | 4.16 | 4.00 | | 11.00 | 3.08 | | 9.49 | |
| TX Modality | | | 4.07 | 4.00 | | 7.00 | 1.40 | | 1.95 | |
|  | | |  |  | |  |  | |  | |
| data source: National Mental Health Services Survey 2015 | | | | | | | | | | |

Histogram analysis provided visual inspection of data indicating variable data met standards of normality. The ANOVA test provided information about the correlation between variables. The analysis indicated a high degree of significance for the overall correlation between fee scale and mental health services at the 0.001 level (Table 4). Fee scale and other related services had an overall correlation that was statistically significant at the 0.001 level (Table 5). Fee scale and treatment modality had a significance level of 0.05 indicating less correlation while still being statistically significant (Table 6).

Table 4 Corrrelation results FEESCALE~MHSERVICES

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | df | Sum sq | Mean sq | F | P | significance | rs |
|  | 18 | 13.11 | 0.7285 | 3.21 | 1.38E-05 | \*\*\* | 0.1821858 |
| Residuals | 363 | 82.38 | 0.2269 |  |  |  |  |
|  |  |  |  |  |  |  |  |
| note: for p values \*\*\* 0.001 \*\*0.01 \*0.05 | | | | |  |  |  |
| data source: National Mental Health Services Survey 2015 | | | | | |  |  |

Table 5 Correlation results for FEESCALE~ORSERVICES

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | df | Sum sq | Mean sq | F | P | significance | rs |
|  | 12 | 11.81 | 0.984 | 4.339 | 1.81E-06 | \*\*\* | 0.1867496 |
| Residuals | 369 | 83.68 | 0.2268 |  |  |  |  |
|  |  |  |  |  |  |  |  |
| note: for p values \*\*\* 0.001 \*\*0.01 \*0.05 | | | | |  |  |  |
| data source: National Mental Health Services Survey 2015 | | | | | |  |  |

Table 6 Correlation results FEESCALE~TXMOD

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | df | Sum sq | Mean sq | F | P | significance | rs |
|  | 8.00 | 4.26 | 0.5321 | 2.176 | 0.0286 | \* | -0.1678412 |
| Residuals | 373.00 | 91.23 | 0.2446 |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| note: for p values \*\*\* 0.001 \*\*0.01 \*0.05; | | | | |  |  |  |
| data source: National Mental Health Services Survey 2015 | | | | | |  |  |

Additionally, data demonstrated normality when analyzed with histogram, data did not demonstrate linearity. Because of assumptions for parametric analysis were not met, a non-parametric Spearman correlation test was conducted. The Spearman results demonstrated a weak positive correlation between sliding fee scale and range of mental health related services, as well as sliding fee scale and range of other related health services (Tables 4 and 5). Data analysis also demonstrated a weak inverse correlation between sliding fee scale and range of treatment modalities offered at a facility (Table 6).

Overall, there was evidence to support that individuals served by facilities providing a sliding fee scale, have access to a more limited range of services. These differences could be accounted for by examining correlation between level of care (acute, in-patient, partial hospitalization, outpatient, etc.). Implications for mental health providers include awareness of limitations to mental health care access for lower SES clients, advocating for more accessible care, and working to increase the number of services provided at treatment facilities in Texas.

References

Substance Abuse and Mental Health Services Administration. (2016) National Mental Health

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