

## Analysis of Students with Psychiatric Disabilities in Higher Education

<sup>1</sup>Azizi Yahaya, <sup>1</sup>Jamaludin Ramli, <sup>1</sup>Shahrin Hashim, <sup>2</sup> Mohd. Ali Ibrahim and <sup>3</sup>Zurihanmi Zakaria

<sup>1</sup>Department of Foundation Education, Faculty of Education,  
University Technology Malaysia, 81310 UTM Skudai Johor Malaysia

<sup>2</sup>Department of Mathematics and Science, Faculty of Education,  
University Technology Malaysia, 81310 UTM Skudai Johor Malaysia

<sup>3</sup>Ministry of Youth and Sport, Putrajaya

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**Abstract: Problem statement:** With the advent of improved psychiatric medication, there has been a phenomenal increase of students with psychiatric disabilities studying at higher education in North America. Similarly in Malaysia and unaware to many, there has been a growing number of such a population. The aim of this research was to determine the demographic characteristics of students with psychiatric disabilities studying at higher education in Johore and their level of performance at four related variables (coping difficulties, symptomatology, self-esteem and academic achievement). The survey was conducted at Sultanah Aminah Hospital and Permai Hospital, Johore. (The pilot study was done in Sarawak General Hospital, Kuching.) **Approach:** Data from a sample of 30 respondents was collected using a questionnaire and analyzed using the Statistical Package for Social Sciences (SPSS) v.13. **Results:** Besides reporting descriptive statistics on demographic characteristics, their level of coping difficulties at school was found to be low, illness symptoms low, self-esteem high and academic achievement at a good GPA mean of 3.03 (out of a 4 point system). The findings imply coping difficulties experienced, that they do not pose a danger, the role change to being a “student” assisted recovery and the findings also imply the capability to pursue educational goals. **Conclusion:** Recommendations were thus made to professionals and co-workers, as well as policy makers (the latter regarding the proposed Persons with Disabilities Act 2002).

**Key words:** Psychiatric disabilities, mental health, coping difficulties, illness symptoms, self-esteem and academic achievement

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### INTRODUCTION

Adults with have been regarded as mostly too ill, unmotivated, disruptive, academically unprepared and incapable of meeting the demands of higher education<sup>[1]</sup>. However, there have been reports of a proliferation of adults with psychiatric disabilities in higher education settings in North America<sup>[2]</sup>. Within one year, for instance, five institutions in the Big Ten Conference encountered an increase from 30-100% in the number of students with psychiatric disorders<sup>[4]</sup>. Epidemiological studies already reported approximately 5-18% of college students with a diagnosable mental psychiatric illness<sup>[5]</sup>, even epidemiological studies in the 1980's<sup>[5]</sup>.

In today's technological society, people are becoming aware that at least a higher education certification is needed to earn an adequate income<sup>[6]</sup>.

When adults with psychiatric disabilities become students at higher education, it has been found that the role change to a “student” status instead of the stigmatized and devalued label of a “patient” aided recovery<sup>[7]</sup>.

**Aim of study:** In Malaysia, likewise and unknown to many, there has been a growing number of students with psychiatric disabilities studying in higher education. The aim of this research was to determine the demographic characteristics and performances in four related variables among students with psychiatric disabilities at higher education in the state of Johore. The objectives were:

- To determine their demographic characteristics (such as gender, age, race, diagnosis, years since diagnosis, educational program, educational institution, registration mode and student type)

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**Corresponding Author:** Azizi Yahaya, Department of Foundation Education, Faculty of Education,  
University Technology Malaysia, 81310 UTM, Skudai Johor, Malaysia  
Tel: +60127570298 Fax: +607550542

- To determine their levels of coping difficulties experienced and current symptomatology, self-esteem and academic achievement

## **MATERIALS AND METHODS**

The research carried out was a survey. The following describes the sample and sampling method, the instrument used and the procedure of the survey.

**Sample:** The sample of the research was made up of 30 respondents. The respondents were obtained from Sultanah Aminah Hospital and Permai Hospital, which are the two major government hospitals with psychiatric facilities in Johor.

As the two hospitals had not completely computerized their database of patients, the total population of students with psychiatric disabilities studying at higher education could not be ascertained. Therefore, a purposive sampling method was employed. The first 30 respondents who met the following four criteria were selected:

- Currently studying in higher education and not taking an illness break (higher education refers to certificate, diploma, graduate diploma, bachelor degree, postgraduate degree and external professional certification)
- Registered as outpatients
- Diagnosed by the psychiatrists/medical officers with one or more of the following three group disorders:
  - Mood disorder
  - Anxiety disorder
  - Psychotic disorder
- Illness must not be a transient condition (such as schizophreniform, brief psychotic disorder and post-traumatic stress disorder)

**Instrument:** The instrument was a structured survey questionnaire. It was made up of several sub-scales. Coping difficulties was measured with an 18-item inventory designed by the first researcher based on “barriers” and “personal difficulties” reported by students with psychiatric disabilities in literature<sup>[8]</sup>. Respondents were asked to tick whether they had the coping difficulties listed in the inventory using a continuous scale indicating 0 (“none”), 1 (“a little”), 2 (“some”) and 3 (“a lot”). Some of the coping difficulties include “difficulty maintaining concentration”, “unable to maintain a good attendance record (esp. for early morning classes-due to sleep pattern disturbance)”, “hospitalization” and “side-effects of medication, making studying difficult”.

The symptomatology of all the three group disorders (mood, anxiety and psychotic) was measured with an established scale, the Modified Colorado Symptom Index<sup>[9]</sup>. The Modified Colorado Symptom Index (MCSI) has 14 items and its frequency scale ranged from a value of 0 (none at all) to 4 (at least every day). The MCSI measures the symptomatology or illness symptoms of the last one month to the time of survey.

Self-esteem was measured with the established 10-item Rosenberg Self-Esteem Scale widely used in health psychology. Its scale used ranged from 1 (“strongly disagree”) to 4 (“strongly agree”).

The respondents’ academic achievement measured was in the form of their latest Grade Point Average (GPA). The GPA adopted as the standard for the study was according to the grading system of University Technology Malaysia (UTM), Skudai. Where the respondents’ academic result was in the form of a grade, the conversion to a GPA-equivalent was documented for reliability purpose<sup>[9]</sup>. Where it was in the form of a percentage, it was converted to a GPA-equivalent using a mathematical formula created by the first researcher and checked by referring to a postgraduate Statistics lecturer. A photocopy of the respondents’ academic result was requested as a documentary evidence.

**Procedure:** Prospective respondents were selected using a manual search through the files guided by the Random Number Table<sup>[10]</sup> as the terminal digit system of the government hospitals had all the patient files organized into 100 divisions. Recommendations of patients were also provided by psychiatrists and some patients were called on when they came to the hospitals for their regular psychiatric consultations. Then they were further screened through to ensure they met the sample criteria, before invitation to participate was given. The questionnaire was either self-administered at respective hospitals or sent as a postal questionnaire (to those studying/residing in the hinterlands of Johor, other parts of Malaysia and overseas). An informed consent form<sup>[1]</sup> briefly describing the research and confidentiality assured was given and signed by the respondent. The 30 respondents that made up the sample comprises of 21 from Sultanah Aminah Hospital and 9 from Permai Hospital.

A pilot study conducted earlier was at Sarawak General Hospital, Kuching; with 10 respondents. Feedback from the pilot study provided information for improving the instrument and the reliability tests found the Cronbach’s alpha for all the above-mentioned scales ranging from 0.859-0.962.

**Data analysis:** The analytical techniques used with the Statistical Package for Social Sciences (SPSS) version 13 were mean, standard deviation, frequency and percentage. The interpretative scales for the variables reported under Objective 2 were divided into five divisions, ranging from “very low level” to “very high level”.

**Findings:** There were no missing value as the first researcher called the respondents to complete items missed out in the questionnaire, so n = 30 for all variables and demographic characteristics examined. The findings below are reported according to the objective they come under.

**Objective 1:** The 30 respondents were made up of slightly more males (n = 16, 53%) compared to females (n = 14, 47%).

Table 1 shows the distribution of the sample respondents’ gender. The 30 respondents were made up of slightly more males (n = 16, 53%) compared to females (n = 14, 47%).

Table 2 shows the distribution of the respondents’ age. The youngest respondent was 18 years old while the oldest was 58 years old. The mean age is 25.03. The variance is wide, with a standard deviation of 7.6. The most common age is 26 with 6 respondents (20%). The age range which is most common is 21-25 years old, with half the sample (53%, n = 16) being in that range. The second most common age range is 26-30 with 23% of the respondents (n = 7). Apparently, the majority of the respondents (90%, n = 27) are aged between 18 and 30.

As seen in Table 3, most of the respondents were Malays (n = 19, 63%), followed by Chinese (n = 9, 30%) and there were only two Indians (7%).

Table 1: Frequency and percentage distribution on respondents’ gender

	Frequency	Percentage
Male	16	53.3
Female	14	46.7
Total	30	100.0

Table 2: Frequency and percentage distribution on respondents’ age

Age	Frequency	Percentage
16-20	4	13.3
21-25	16	53.3
26-30	7	23.3
31-35	1	3.3
36-40	1	3.3
41-45	0	0.0
46-50	0	0.0
51-55	0	0.0
56-58	1	3.3
Total	30	100.0

Mean = 25.03, Range = 40 (min = 18, max = 58)

Table 4 shows the diagnosis of the respondents. In terms of specific disorder, the most common were schizophrenia (23%, n = 7) and what was loosely diagnosed as “depression” (23%, n = 7). “Depression” was an unspecific diagnosis written by the clinicians which could be any of the depressive disorder listed: That is, major depressive disorder, bipolar disorder, dysthymia or depression with psychotic feature. Major depressive disorder and bipolar disorder were the next most common specific diagnosis with 10% (n = 3) of the respondents each. This was followed by panic disorder, dysthymia, depression with psychotic feature and schizoaffective disorder (7%, n = 2 each). Apparently, there was no generalized anxiety disorder reported.

In Table 5, most of the respondents selected had only in recent years been diagnosed. The minimum duration since diagnosis of respondents was 0.5 year while the maximum was 10 years. The mean years since diagnosis of respondent was 3.11 years (SD = 2.05) while the mode were 3.0 and 4.0 years and the median 3.0 years. Apparently, the years since diagnosis of most of the respondents clustered around the first four years.

In Table 6, slightly over half of the respondents (57%, n = 17) were studying in a bachelor degree program, either locally or overseas. This is followed by diploma or advanced diploma programs with 23% of

Table 3: Frequency and percentage distribution on respondents’ race

	Frequency	Percentage
Malay	19	63.3
Chinese	9	30.0
Indian	2	6.7
Others	0	0.0
Total	30	100.0

Table 4: Frequency and percentage distribution on respondents’ diagnosis

	Frequency	Percentage
<b>Mood disorder</b>		
Major depressive disorder	3	10.0
Bipolar disorder	3	10.0
Dysthymia	2	6.7
Depression with psychotic feature	2	6.7
“depression”	7	23.3
Sub-total	17	56.7
<b>Anxiety disorders</b>		
Panic disorder	2	6.7
Obsessive compulsive disorder	1	3.3
Mixed anxiety depression	1	3.3
Sub-total	4	13.3
<b>Psychotic disorders</b>		
Schizophrenia	7	23.3
Schizoaffective	2	6.7
Sub-total	9	30.0
Grand total	30	100.0

Table 5: Frequency and percentage distribution on years since diagnosis of respondents

Years since diagnosis	Frequency	Percentage
0.5	3	10
1.0	3	10
2.0	6	20
3.0	7	23
4.0	7	23
5.0	1	3
6.0	1	3
7.0	1	3
10.0	1	3
Total	30	100

Mean = 3.11, SD = 2.05, Range = 9.5 (min = 0.5, max = 10)

Table 6: Frequency and percentage distribution on respondents' educational program

	Frequency	Percentage
Certificate	2	6.7
Diploma or advanced diploma	7	23.3
Bachelor degree	17	56.7
Graduate diploma	1	3.3
External professional	1	3.3
Postgraduate degree	2	6.7
Total	30	100.0

Table 7: Frequency and percentage distribution on respondents' educational institution

	Frequency	Percentage
Non-UTM students	21	70
UTM students	9	30
Total	30	100

Table 8: Frequency and percentage distribution on respondents' registration mode

	Frequency	Percentage
Full-time students	28	93.3
Part-time students	2	6.7
Total	30	100.0

the respondents (n = 7). There were 2 students (7%) each studying in a certificate and postgraduate degree program. Only one student was studying a graduate diploma while one other in an external professional certification course (3% each).

Table 7 above shows the distribution of the respondents' educational institution. Item 9 in the demography section of the questionnaire was an open-ended question, asking for the respondents' educational institution and location. Deriving from Item 9, it was found that 30% (n = 9) of the respondents were from UTM, Skudai. Most of the other 70% were from higher education institutions both in Johor and in other parts of West Malaysia (none apparently studying in East Malaysia). Two respondents were studying overseas: one in Singapore and the other in Taiwan. The respondents other than those studying in UTM, Skudai were categorized under "Non-UTM students".

Table 9: Frequency and percentage distribution on student-types

	Frequency	Percentage
Type I students (ill during study program)	15	50
Type II students (ill before study program)	15	50
Total	30	100

From Table 8, 93% of the respondents (n = 28) were full-time students while 7% (n = 2) were part-time students.

Table 9 above shows which student-type respondents are. This is in line with a secondary objective of this study-to obtain information on when the respondents became ill in relation to their current educational pursuit. It was found that an equal number of them (n = 15, 50%) were Type I students (those who became ill during their current educational pursuit) and Type II students (those who became ill before their current educational pursuit).

**Descriptive analysis:** This section on descriptive analysis presents the descriptive statistics of all the study variables: Coping difficulties, elements of Supported Education, current performances (academic achievement, self-esteem, school self-efficacy and illness symptoms) and support for Supported Education. The valid number of responses for all variables is, again, 30 as there is no missing value in all the questionnaire responses.

**Objective (ii):**

**Level of coping difficulties:** Objective (ii) is to determine the level of coping difficulties among the mentally unwell students.

The coping difficulties inventory has a 3-point scale ranging from 0-3 (scale shown toward the top of Table 10 in the following page). The overall mean of coping difficulties is 0.99 (SD = 0.62). One respondent reported no coping difficulties at all. Based on the interpretative scale for coping difficulties, the level of coping difficulties experienced by the respondents is therefore "low".

Table 10 below shows the descriptive data of every questionnaire item measuring coping difficulties. The coping difficulty experienced the greatest by the sample is the difficulty maintaining concentration, with a mean of 1.67 (SD = 1.06). Thirteen percent of the respondents had no difficulty maintaining concentration, 37% had "a little", 20% "some" and 30% "a lot". The difficulty maintaining concentration is mostly at "a little" level or "a lot".

The second greatest coping difficulty is test or non-test anxiety (mean = 1.60, SD = 1.00). Thirteen percent of the respondents reported no test/non-test anxiety, while most of the responses (37%) experienced "a little" of it, 27% "some" and 23% "a lot".

Table 10: Descriptive data on questionnaire items of coping difficulties

Item no.	Coping difficulties	Distribution of responses (%)				Mean	SD
		None 0	A Little 1	Some 2	A Lot 3		
1	Difficulty maintaining concentration	13	37	20	30	1.67	1.06
2	Problem with memory	33	23	23	20	1.30	1.15
3	Difficulty meeting deadlines	33	30	20	17	1.20	1.10
4	Unable to handle group discussions	53	17	17	13	0.90	1.13
5	Unable to maintain good attendance record (due to sleep pattern disturbance)	47	23	13	17	1.00	1.15
6	Lack of meta-cognitive skills (e.g., planning, organizing, making decisions)	30	27	33	10	1.23	1.01
7	Lack of study skills (e.g., notes-taking, mind-mapping, exam techniques)	40	27	20	13	1.07	1.09
8	Lack of academic ability (e.g., inability to handle course load, failing exams)	37	40	17	7	0.93	0.91
9	Test anxiety or non-test anxiety	13	37	27	23	1.60	1.00
10	Other illness symptoms (e.g., mood swings, depression, delusions, overwhelmed/stressed out)	17	33	23	27	1.60	1.07
11	Hospitalization	70	17	13	0	0.43	0.79
12	Substance-abuse, disruptive/inappropriate behavior or legal issues	93	3	3	0	0.10	0.40
13	Side-effects of medication	53	37	7	3	0.60	0.77
14	Dealing with mental illness stigma (e.g., fear of disclosure or discrimination)	37	33	23	7	1.00	0.95
15	Conflicted relationships with family member(s), peers or faculty	40	20	27	13	1.13	1.11
16	Mental health professional, faculty or family member(s) unsupportive of academic pursuit	83	0	13	3	0.37	0.85
17	Competing circumstances (e.g., competing family obligations, finding time to study while holding a job)	50	20	17	13	0.93	1.11
18	Physical health problem (e.g., frequent flu, epilepsy, fatigue, lack of stamina)	53	23	10	13	0.83	1.09

Overall mean = 0.99, SD = 0.62, (n = 30)

They had other illness symptoms (e.g., mood swings, irritable moods, hostile, paranoia, lack of motivation, depression, delusions, hallucinations and overwhelmed/stressed out) as well and this is the third greatest coping difficulty. The mean is 1.60 (SD = 1.07), with 17% not reporting such difficulty, 33% at “a little” level, 23% “some” and 27% “a lot”.

The fourth most serious coping difficulty is a problem with memory. The mean is 1.30 (SD = 1.15). Although most of the responses (33%) reported not experiencing it; 23% reported it at “a little” level, another 23% “some” and 20% “a lot”.

The lack of meta-cognitive skills (e.g., planning, organizing and making decisions) was also experienced to a certain extent. This is the fifth highest coping difficulty, with a mean of 1.23 (SD = 1.01). 30% reported no such difficulty, 27% at “a little” level, many (33%, n = 10) at “some” level and only a few (10%, n = 3) “a lot”.

On the other hand, the coping difficulty experienced the least is substance-abuse, disruptive/inappropriate behavior or legal issues with criminal justice system (mean = 0.10, SD = 0.40). Almost all the respondents (93%, n = 28) reported no such problem while pursuing their current educational program. 3% (n = 1) reported “a little” and also at “some” level.

Mental health professional, faculty or family member(s) being unsupportive of academic pursuit is the second least experienced coping difficulty, with a mean of 0.37 (SD = 0.85). Again, almost the entire sample (85%) reported no such difficulty. No respondent reported it as experiencing “a little” of this difficulty, 13% had “some” of this difficulty while only 3% (n = 1) had “a lot”.

Finally, the third least experienced coping difficulty is hospitalization (mean = 0.43, SD = 0.79). 70% (n = 21) reported not having been hospitalized in the course of their current educational pursuit. Only a total of 9 respondents (27%) was hospitalized during the course of their study program; in which 17% (n = 5) reported it as having “a little” of this problem and 13% (n = 4) at a “some” level.

## DISCUSSION

The findings in terms of gender are similar<sup>[11]</sup> which surveyed a nationwide sample of 522 respondents with the same three group disorders. There has not been any prior study done on students with psychiatric disabilities in Malaysia but a comparison can be made by observing the student population in large higher education institutions in Malaysia. Such

observation indicates that the findings in terms of age are consistent with the Malaysian higher education student population. Whereas in terms of race, the findings of the current study are consistent with the 2006 racial distribution from the Institute Pengajian Tinggi Swasta (IPTS) or Private Higher Education Institutions and the Malaysian 2004 general population<sup>[24]</sup>. In short, the consistencies with representative data in terms of gender, age and race justifies that the sample is fairly representative of its accessible population (students with psychiatric disabilities in Johor) as well as its target population (students with psychiatric disabilities in Malaysia).

The distribution of diagnoses confirms the findings of some previous research<sup>[12]</sup>. The years since diagnosis confirms again another of Megivern, Pellerito and Mowbray's<sup>[13]</sup> finding. Working out the "age of first diagnosis" of the sample based on the "year of diagnosis" and "age" reported by the respondents, it was found that 90% of the sample's age of first diagnosis were between 16 and 28. This is similar to vast literature that states that the typical age of first onset is around 16-25<sup>[14]</sup>. The distribution of the educational program found in the sample showed a larger proportion of bachelor degree students and a smaller proportion of diploma and certificate students compared to the 2006 data from the Institute Pengajian Tinggi Awam (IPTAs), or Public Higher Education Institutions. (The data from the IPTAs can be a representative data of the Malaysian higher education population since students from the IPTAs makes up the biggest proportion of the higher education students in Malaysia.) The IPTAs had 47% bachelor degree, 32% diploma and 15% certificate students. The bigger proportion of bachelor degree students and smaller proportion of diploma and certificate students in the current study can be explained by the availability and spread of higher education institutions located in the state of Johore, where almost half of the sample (47%) were studying in. In Johore, the UTM Skudai is a major higher education institution with nearly 25,000 students ("Quick Facts 2007") and most of its courses are bachelor degree programs. This fact also explains how 30% of the sample (n = 9) came from the UTM Skudai.

The distribution of the student types (the Type I and Type II students) also confirms Megivern, Pellerito and Mowbray's<sup>[13]</sup> finding.

The low level of coping difficulties and illness symptoms, high level of self-esteem and good academic achievement can be explained by the fact that the sample are students with psychiatric disabilities who are currently studying and not having an onset/relapse or taking an illness break. A finding from an item in the

questionnaire found 70% of the students having regular maintenance of medication and psychiatric consultation.

All the individual coping difficulties and illness symptoms specifically listed in ranking order above confirm finding<sup>[7,13,14,15,26]</sup>.

The most prominent coping difficulties found repeated in illness symptoms were concentration problem, depression, test and non-test anxiety and trouble making decisions.

Contrary to the beliefs of many and the heightened media on recent school gunmen attributing it to students with psychiatric problems, students with psychiatric disabilities are generally not disruptive, violent or a danger threat as found in this study besides other literature support<sup>[12]</sup>. Only 2 out of the 30 respondents had problem with the law, substance abuse or disruptive behavior. The feeling to hurt oneself or to hurt others were symptoms lowest in occurrence and at least 70% of the sample (n = 21) did not have such a feeling. The 9 respondents or less who experienced such violent feeling mostly had experienced it "once during the month" only.

The level of self-esteem found among the sample is similar to Ratzlaff *et al.*<sup>[21]</sup> findings on adults with psychiatric disabilities participating in a Supported Education program which assisted them in their educational pursuit. Consistent with Bley *et al.*<sup>[5]</sup> and Murphy and Murphy<sup>[19]</sup>, their level of self-esteem is lower than the general normal population as found by<sup>[19]</sup>. Nevertheless, their self-esteem is of a "high" level according to the interpretative scale for self-esteem.

The academic achievement is almost the same as a normed data of bachelor degree students reported by Ooi<sup>[20]</sup>, except that the percentage of failure is higher in the current study (7%, n = 2) compared to Ooi<sup>[20]</sup> at 1.5%. The mean GPA score of 3.03 implies good academic capability among higher education students with psychiatric disabilities. This is supported by Unger and Pardee<sup>[26]</sup> and Unger<sup>[25]</sup> who found that higher education students with psychiatric disabilities but assisted with a Supported Education program had mean GPAs of 3.14 (with documentary support) and 3.50 (self-reported). Another finding shows that a majority of his participants in a clubhouse (under a Supported Education program) received B grades or higher<sup>[1]</sup>.

## CONCLUSION

Firstly, an implication of these findings is that higher education students with psychiatric disabilities are intellectually capable (that is, with maintenance of

medication and when they are not experiencing a relapse/onset).

Secondly, they experience a certain amount of coping difficulties and illness symptoms. A separate finding of this research, which cannot be ignored, found at least 35% college attrition rate (withdrawals and deferrals).

Thirdly, the high level of self-esteem of those who are able to maintain their education reflects an improved prognosis resulting from a role change to a “student” status rather than the devalued role of a “patient”.

The good academic achievement and high level of self-esteem have demonstrated that the beliefs of people with psychiatric disabilities as entirely incapable of educational pursuit are “myths of the bygone era”, as supported by Austin<sup>[23,17]</sup>.

Moreover, students with psychiatric disabilities who are medication-compliant are generally not violent or disruptive.

The appearance of students with psychiatric disabilities or the future appearance of more such students in the campus grounds of Malaysia is an example of a paradigm shift. The “rising tide”<sup>[23]</sup> of higher education students with psychiatric disabilities has been made possible by the advent of new generation psychiatric medication with less side effects and better psychiatric care<sup>[4,13,19,22]</sup>, the drugs bringing about improved cognitive ability<sup>[23]</sup> and effective rehabilitation methods<sup>[7]</sup>

**Recommendations:** It is recommended that mental health professionals, co-workers and staff be aware of and be more sensitive to the coping difficulties of a growing number of students with psychiatric disabilities; and support them as they fight it while pursuing educational goals.

As this study has found that students with psychiatric disabilities are capable of academic pursuit and a survey showed nearly two-thirds of adults with psychiatric disabilities wanting more education<sup>[27]</sup>; mental health professionals could play a leadership role by encouraging patients who have academic potential to equip themselves with a higher education certification. At the same time, mental health professionals can model a supportive role for such students.

This study is also a proposition to policy makers that people with psychiatric disabilities be formally recognized and included in the definition of the disabled in Malaysia so that assistance (like in Education) can be made available for them, supporting the proposed Persons with Disabilities Act 2002 (“Disability Laws”, un-dated) being looked into at time of writing.

Finally, it is hoped too that these findings lead to a consideration of a rehabilitation program such as the Supported Education program (Goh, in-press) which prepares adults with psychiatric disabilities enter or resume higher education and supports students with psychiatric disabilities till the completion of their educational goals. Supported Education is an empirically effective rehabilitative intervention where there are currently over 100 programs in North America<sup>[16]</sup> and a few recently developed in Australia and Europe (personal communication with Anne Sullivan-Soydan, key researcher in Supported Education for over 20 years). This recommendation is in line with the need for more rehabilitation resources in Malaysia as voiced by Mubarak<sup>[18]</sup>.

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