

## Identification of Emotionally Disturbed Students: Role of English Faculty in Linguistic Preventive Intervention

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### Abstract

*This research presents linguistic preventive intervention initiative for the English Faculty to screen emotionally disturbed Pakistani university students. The aim was to investigate creative writing data of the youth for detection of depression and suicide related language, on a text analysis tool-SNARE. Poems and essays of 380 university students were run on SNARE results of which showed that linguistic warning signs of emotional disturbance were found in the writing of 170 students. The results supported the viability of a pedagogical linguistic approach of detecting emotionally disturbed students with the vision to take timely measures for their wellbeing.*

### Introduction

It's a complex world we are living in with increasing pressures on students in terms of immense competition that may give way to depression and suicide. Barraclough et al., (1974) found eighty eight percent suicidal individuals suffering from psychological disorder. Studies of (Lesage et al., 1994; Henriksson et al., 1993; Isometsä et al., 1995; Adam et al., 1994; Montano, 1994; Cheng, 1995) revealed that those individuals who suffer from depression are at immense risk of suicide and these problems are interrelated. Depression has also been frequently termed as the most common marker and major predictor of suicide (Zweig et al., 1993; Adam et al., 1994). Isometsä et al., (1994) states that the individuals who are not treated for depression are at 15 percent risk of suicide in lifetime.

According to the World Health Organization (WHO, 2012) suicide is one of the three main reasons of death among the age group of 15-30 years. Beautrais (2006) found that 60 million Asians have been affected by suicide or suicide attempts.

Pakistan is also facing challenges to adopt preventive initiatives because suicide rate in the youth is on the increase. According to (Khan, 2007; Mirza & Kenkins, 2004) 90 percent of suicides in Pakistan are results of depression and nearly fifty four million Pakistanis suffer from emotional disturbance related issues. Khan (2006) accounts domestic and interpersonal difficulties as most common reasons of suicide. According to (Vijavakumar et al., 2005) students have to face tremendous pressure to outshine academically, and if one cannot succeed then the perceived humiliation may result in suicidal attempt. Coombs et al., (1992) research revealed that in 50-70 percent of suicides the victims relayed their plan

to others before committing the act. In another study (Barnes et al., 2001) it has been found that those who committed suicide, in most of the cases, had revealed their intentions to friends and family.

Innovative initiatives regarding depression and suicide awareness programs are underway in many countries, including Asia, to screen emotionally disturbed individuals in order to prevent tragic incidents. Pakistan, a developing country, requires preventive initiatives which are cost effective, one of which has been taken up in this research. Identifying emotionally disturbed students through English faculty is the most viable natural screening measure that also cuts on expenses.

The role the English faculty could play for the well being of the students is vital because in creative writing classes the students are engaged in creativity, which involves emotions, so the teachers can peep into their students' minds. Hence, there is immense chance of identifying emotionally disturbed students by looking for linguistic warning signs.

Studies have been conducted to capture the emotions in the suicide notes. According to Menniger (1938), wish for death, to kill and to be killed need to be present in a suicide note. Pestian et al., (2012) studied emotions of anger, abuse, blame, forgiveness, fear, guilt, hopelessness, sorrow, happiness, peacefulness, hopefulness, love, pride, information, thankfulness & instructions in suicide notes. Brevard et al., (1999) found the desire to be killed more in suicide notes of those who committed suicide than those who attempted suicide but did not die. Analyses of suicide notes by Leenaars et al., (1992) revealed that those who died due to suicide wrote about emotions associated with anger, revenge, self blame, forgiveness, ambivalence, hate, love, constricted cognition, loss, helplessness and self punishment. Freedenthal (2007) is of the view that possibility of reattempt is likely in suicide attempters who did not succeed in killing themselves. Such individuals are not easily detected because they are unaware of their condition and dwindle between ambivalence, memory loss and rash behavior.

Computational depiction of emotions through psycholinguistic methods has been presented by Yeh et al., (2012). The researchers studied occurrence of emotions; hopelessness, instructions, love, blame, anger, sorrow, thankfulness, fear, hopefulness, pride, forgiveness and happiness. Of eight hundred and twenty sentences related to instructions, nearly seventy one started with 'please'. Four hundred and fifty five sentences contained emotions of hopelessness out of which one hundred and fifty six started with first person singular pronoun, 'I'. The data was run on a computational text analysis tool results of which showed eight emotions made up nearly ninety percent of the data. Percentage of the highest ranking emotions was: instructions 32%, hopelessness 18%, love 11%,

information 11%, guilt 8%, blame 4%, thankfulness 3%, anger 2%. These emotions are mainly relevant to negative and positive emotion categories.

Gunter (2011) conducted depression related studies, results of which revealed use of certain linguistic themes and emotions related to; depression, anxiety, contorted negative thinking and dejection. Rude et al., (2004) found linguistic themes associated with impeding coping style, stress and anxiety.

The current study focused on the twenty one inbuilt linguistic themes of Suicide Note Assessment Research – SNARE (a linguistic analysis tool): unbearable situation; death (dying, burial); self blame, responsibility; reference to third person or thing; instructions; life after death; love; absolutes (polarized language); tunnel vision, constricted cognition even if illogical; blaming addressee; factuality about situation/event; hopeless or helpless self; ongoing effects; relationship loss (person or ideal); forgive me; ambivalence (love and hate); apology; burdensomeness of self; preoccupation with loss; goodbye and hostility at loss. The tool analyzes the document and look for 21 themes in the lexical semantics of the document and for grammatical constructions. After detecting these linguistic features in the document, they are counted which result in data quantification of each text.

## Method

### Subjects

In total 400 first year/ freshmen honors program Pakistani university students (male and female) participated in the study. The average age of the students was between 18-20 years whereas their English proficiency was of Intermediate level (in Pakistan English is a compulsory subject in schools, colleges and at Bachelor's level). The participants were from universities that imparted education through formal and non formal mode of education. Data was collected by visiting the universities that operated per formal education system. For the purpose of obtaining data from all over Pakistan, student writing samples were collected from a public sector university that provides Internet based non formal distance education, throughout the country.

### Procedure

Students studying in universities with formal mode of education wrote poems and essays per writing prompts and instructions. The writing prompts were:

1. I cannot forget...
  2. I want to tell you ....
- I hate this life so deeply ... Almost as deeply as I love it  
My apology

Each student had the choice to either write a poem or an essay within 20 minutes of class time. As the data was in hand-written form, a typist converted each document, on a computer, into text files. Same instructions and writing prompts were conveyed to the students of the distance education university via its online portal. The students logged in their individual account for writing a poem or an essay. Within stipulated time the students' writing samples were saved in the database and any further activity was restricted to avoid disparity of activity time for both the student groups.

### Coding Procedure

Total number of poems and essays was 400 but 20 documents were not considered for analyses because either the writing was illegible or the contents did not relate to the writing prompts. Prior to submitting the data into SNARE, every document was assigned an identifier: StME= student male essays; StMP= student male poems; StFE= student female essays; StFP= student female poems; StP= student's poems and StE= student essays (data of those students who did not mention their gender). The documents of those students who mentioned their university ID was fed into SNARE as Case ID and Case Questioned Document (QD) and the student identifier e.g. a female student, who wrote an essay, with university ID 0989876 was given SNARE ID 0989876 StFE.

Since many students had not mentioned their gender and their university ID, their documents were given numerical identifiers e.g. 02 StP, where the numerical number is the poem identifier. Some students had mentioned their university ID but not their gender. For such cases their university ID was mentioned in SNARE ID box along with the data type e.g. 0768478 StE.

### Procedure

In order to screen emotionally disturbed students, each poem and essay was run on SNARE in order to classify suicidal and non suicidal text. Those results of SNARE that classified a text as 'Suicide Note' were taken as text showing linguistic warning signs of depression/suicide. A total of 170 documents out of 380 formed the dataset of text reflecting emotionally disturbed students. An example of the result of SNARE analysis appears below:

Sample result of SNARE analysis of student suicide data

**Case ID** Sam Khan-090403291 StMP-SNARE-726

**Case QD** 090403291 StMP

**User Name** Sam Khan **Report Date** 10/8/2013 **Report Time** 4:24:33 PM

**Statistical Model Decision** SUICIDE NOTE

### **Cross Validation of Suicidal Data: Qualitative Analysis**

In order to disprove the SNARE analyses, suicidal quantified data was subjected to qualitative analysis per YES/NO priority. Two independent judges conducted the analyses to identify and compare linguistic features in the data set with the inbuilt linguistic features (21 models) of SNARE, for similarity. The suicidal quantified data was coded prior to analysis.

### **Coding Procedure & Quantification of Data**

The data quantified as 'Suicide Note/Writing' by SNARE was coded prior to submitting to two independent judges who were English teachers/professors. Judge 1 had studied psychology as a subject at Bachelor's level whereas Judge 2 did not study psychology at any level. All poems were coded as 'StSP' (student suicidal poems) and all essays as 'StSE' (student suicidal essays). The judges reviewed the student suicidal data per twenty one linguistic models of SNARE. For example, for 'death theme' the judges had to tick the 'Yes' or 'No' column for each poem or essay in the data set. The data was collected from the judges and only those documents were considered as 'Yes' (validated) in which minimum 60 percent of the linguistic themes of SNARE were detected, and the rest were considered as 'No' (missed). The results were compared and cross validated with the SNARE analyses.

### **Rationale for Choosing SNARE Tool**

Developed by Chaski (2008), Automated Linguistic Identification and Assessment System (ALIAS), a software for analysis of linguistic evidence in forensic related matters. It has a central database of documents, analytical components for quantification of relevant linguistic patterns, statistical components for analysis of quantification output, and reporting components that generate results for each of its module. Metalinguistic sensitivity varies in human beings, which Chaski took into account for detection of linguistic imitation, and developed ALIAS on two aspects of psycholinguistics. Firstly, based on psycholinguistic literature that attention is paid to what a message is rather than how it is said because the precise words are not remembered, over a minute. It is these linguistic features that formed basis in development of ALIAS modules.

Secondly, considering that metalinguistic awareness is different in individuals, it is rare to possess the ability for syntactic structure linguistic forgery. ALIAS is effective because it takes into account the complex and unconscious linguistic features which are not easily recognizable and controllable. ALIAS modules can reveal linguistic forgery as well as classify data for authorship and text type. Chaski and her team started to develop a computational text analysis software tool, fast assessable to the first observers of linguistic clues of suicide, with minimum 75 percent accuracy. The developer of the tool found that suicide notes

have elements of different text types e.g. love letters, instructions, apology , but not all suicide notes contain one set of text type. For this research the text type (suicidal text vs non suicidal text) was classified by a module of ALIAS named SNARE- Suicide Note Assessment Research.

### **Validation Testing of SNARE**

In 2008, considering the fact that suicide notes are similar to other text types helped Chaski and her team to start suicide note classification project at Institute of Linguistic Evidence-ILE. At ILE there is a method of developing computational tools which is called validation testing. The suicide project is called SNARE-Suicide Note Assessment Research. The validation testing applied to SNARE included three steps:

•**Development of a ground truth database:** 400 + real suicide notes, ranging from 21500 words written by males and females between 18-60's years of age, were obtained from law enforcement agencies, published sources and authorship related casework. The length of 133 suicide notes was under 45 words and of 231suicide notes were under 100 words. Since it is not allowed in the US to ask people to write phony suicide notes 500 control documents of other related text types were collected from writing prompts written by both male and female subjects who were paid by the developers of the tool.

#### **Control text prompts for writing:**

- Write a letter to your sweetheart
- An apology to your friend
- A narrative about a traumatic experience
- A business letter to your insurance
- A complaint about a service
- An angry letter to a friend

**The data was analyzed with a computational linguistic software tools:** The tools analyze the document and look for themes in the lexical semantics of the document and for grammatical constructions. After detecting these linguistic features in the document, they are counted which result in data quantification of each text.

Chaski's work is based on the premise that suicide notes have very low internal consistency and are not stereotypical due to which they are not easy to recognize. Suicide notes, ranging from 2-1500 words written by males and females between 18-60's years of age, were obtained from law enforcement agencies, published sources and authorship related casework. The length of 133 suicide notes was under 45 words and of 231suicide notes were under 100 words. The twenty one linguistic themes of SNARE were analyzed as to how common they were in 133

Short Suicide Notes. The results revealed that the theme 'unbearable situation' occurred in 59 percent and 'burdensomeness of self' occurred in only 10 percent of Short Suicide Notes whereas in Psychiatric literature it is a strong factor in suicidal ideation. It is difficult to recognize Suicide Notes because semantic themes do not occur in 100 percent of time.

#### •Statistically analyze the data quantification

The third step in data validation testing procedure was to statistically analyze the data quantification. For SNARE the statistical classifier Linear Discriminant Function Analysis was used as well as Leave-One-Out cross validation for deflating classification. Meaning that each of the documents, nearly 400 real suicide notes and 500 control texts was tested independently, taken out and tested for which class it would belong to. Not only LeaveOne-Out classification was used but also empirically tested different bundles of linguistic features. 21 models of linguistic features were built using different linguistic bundles.

#### SNARE Validation Testing Results

Of Notes over 45 words 370 were real Suicide Notes 80 percent cross validated accuracy was obtained. Meaning, that SNARE accurately classified 80 percent of the Control Text and the Suicide Notes over 45 words as either real Suicide Notes or Control Text. For Notes under 45 words 86 percent cross validated accuracy was obtained. This means that the Error Rate was 14-20 percent, the reason of which could be that longer documents contain other text type elements and are hard to classify.

Since inbuilt linguistic categories of SNARE matched the linguistic themes used in the writings of; suicidal students, suicide, psycholinguistic and depression literature, the analysis of the poems and essays of the students was carried out on SNARE. Online access to the tool was provided by the developer (Chaski, 2008) to conduct the analyses.

#### Results: Testing Pakistani Students

The aim of this paper was to screen and detect linguistic warning signs of emotional disturbance related problems, in the poems and essays of Pakistani university youth. The data (N=380) was analyzed on a text analysis tool- SNARE.

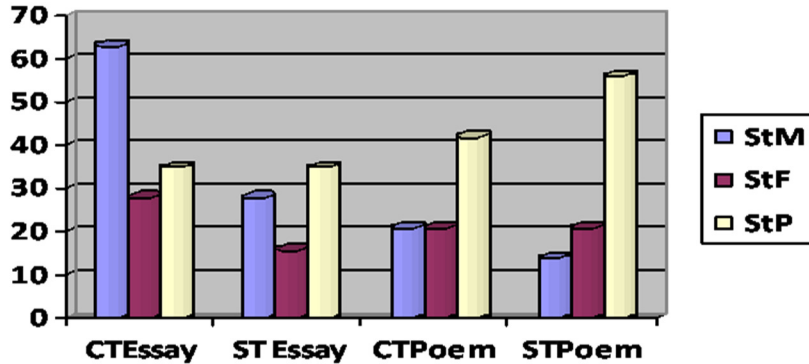


Figure 1: SNARE Results of Students Written Data

The result of SNARE quantification of data is shown in Figure 1. Out of 380 poems and essays, 126 documents were written by male students, of which 91 were essays and 35 poems. Sixty three essays were Control Text- CT, and 28 were Suicide Note/Text- ST. Poems and essays written by female students numbered 86 of which 42 were poems and 44 essays. Out of total essays 16 were ST and 28 CT whereas 21 poems were classified as ST and 21 as CT. A total of 168 documents were written by students who had not mentioned their gender. The data comprised of 98 poems and 70 essays. SNARE analyzed 56 poems as ST 42 poems as CT and 35 essays belonged to CT category and 35 to ST. The essay writing activity results show that the Suicide Text classification was highest in the Student Gender not Mentioned group with Student Male in the second place and Student Female in the lowest place. For the poem writing activity the Student not Mentioned group was at the top while Student Female at the second and Student Male group at the lowest.

Table 1: Percentages of SNARE Quantified Student Suicidal Data

St Male 91		St Female 44		St Gender not Known 70	
<i>SEssays</i>	<i>SPoems</i>	<i>SEssays</i>	<i>SPoems</i>	<i>SEssays</i>	<i>SPoems</i>
30.76 %	40 %	36.36 %	50 %	50 %	57.14 %

The results of SNARE shows (see Table 1) that percentage of Suicide Text for essays was; 30.76 percent for male students, 36.36 percent was for female students, 50 percent for students of unknown gender. For poems the Suicide Text percentage was; 40 percent for male students, 50 percent for female students and 57.14 percent for students of unknown gender. While the difference in



percentage in text type is maximum in the Student Female group (14 percent) it is the lowest in the Student Gender not Mentioned group (7 percent), while of Student Male group is 9 percent.

### Qualitative Judgment of Data of the Disturbed Student Group Support the SNARE Analyses

In order to disprove the SNARE analyses the data classified as suicidal text (N=170) was analyzed by two independent judges for cross validated accuracy (benchmark was 75 percent).

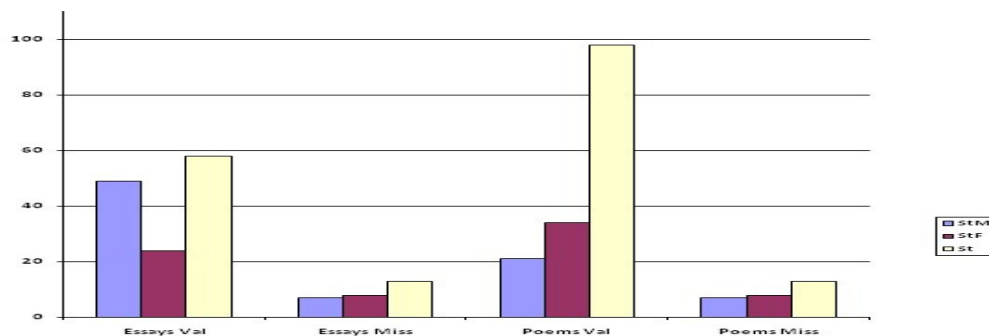


Figure 2: Overall results of judges' cross validation of snare classified student suicidal Analyses of the data classified by SNARE as suicide text (N=170), by two independent judges, yielded 83.5 percent cross validated accuracy. The agreement score of Judge 1 was 140 (82.35 percent) and of Judge 2 was 144 (84.70 percent) documents. The disagreement scores were 17.64 percent and 15.29 percent for Judge 1 and 2, respectively. Collective count of essays cross validated accuracy of both the judges numbered; 49 for male, 24 for female and 58 for student gender not mentioned. The results of poems showed that 21 poems of male, 34 of female and 98 of student gender not mentioned were validated by both the judges.

Total poems judged by both judges were 181 out of which 153 were validated whereas 28 poems were missed by the judges. Total count of Poems Validated as Suicide Text of Student Male was 21 and Poems Missed was 07, of Student Female Validated Poems was 34 and Poems Missed was 08 and of Student Gender not Mentioned total Poems Validated was 98 and Poems Missed was 13.

The above mentioned results of the current study supported earlier study of Pestian et al., (2008) regarding classification of emotions (anger, abuse, blame, forgiveness, fear, guilt, hopelessness, sorrow, happiness, peacefulness, hopefulness, love, pride, information, thankfulness & instructions) in the suicide notes through a computational tool, results of which were cross validated by qualitative human judgment. The results affirmed that the analyses of

technological tools matched the human judgment. The two independent judges evaluated the essays and poems (termed as Suicide document by SNARE) of students in relation to the 21 linguistic themes of SNARE. Comparison of results of both assessments yielded 83.5 percent cross validated accuracy.

### Judges Analyses of Randomly Selected Student Suicide Data

Student 1: Ongoing effects, Reference to third person

*"I, perhaps always had a belief that she would never let me down, i felt something brokeninside. Something like a tear popped out of my eye and dropped at her hand".*

Student 2: Hopeless or Helpless Self, Factuality about Situation/Event *"I also desired meaning in life. I was looking for answers to the questionings:*

*"Who am I?"*

*"Why in the world am I here?"*

*"Where am I going?"*

*More than that, I also longed to be free."*

Student 3: Unbearable situation, Self blame/Responsibility, Ongoing effects, Tunnel vision, Death

*"I hate my life because I can't do anything right. I crushed the hopes and dreams of a child. I failed as a successful person and supporting son. I have lied, cheated and killed. None of these things made me think different about my life. I planned to commit suicide. Yes, I carefully planned each method and step. Should I jump off a building?"*

Student 4: Hopeless or Helpless Self, Love, Blame, Tunnel vision, death

*"I just wanted to disappear the face of the earth but life kept happening, and I was a very unwilling participant. All of this time, my heart was crying out to be loved and accepted, but there was no way I was going to believe that I ever would be. No one seemed to care if I was even alive other than my family and sometimes I even wondered about them. I didn't know how I was going to meet that goal, but who cared?"*

Student 5: Apology, Pronoun, Self blame

*"There are no words to say how sorry I am for what happened. All I can do is be contrite and let you know that I am sorry".*

Student 6: Burdensomeness of Self, Blaming, Hopeless or Helpless Self

## Discussion

### General

### Discussion

The current

*"I've had more than my fair share of misfortunes in life. I've been abandoned my my father, neglected my my mother, lived with a horrible skin condition, suffered various degrees of depression spanning 2 decades and dealt with abandonment. All of this, i experienced in silence, and alone."*

research made use of the text analysis computational tool SNARE for analyses of the data. The linguistic themes of SNARE are: Unbearable Situation, Death (dying, burial), Self Blame, Responsibility, Reference to Third Person or Thing, Instructions, Life After Death, Love, Absolutes (polarized language), Tunnel Vision, Constricted Cognition Even if Illogical, Blaming Addressee, Factuality about Situation/Event, Hopeless or Helpless Self, Ongoing Effects, Relationship Loss (Person or Ideal), Forgive me, Ambivalence (love and hate), Apology, Burdensomeness of Self, Preoccupation with Loss, Goodbye, Hostility at Loss. The report of an analyzed text generated by SNARE indicated whether the text was 'Suicide Note' or 'Control Text'. Since theme wise percentages were not indicated in the report, theme related percentages of the validation testing of SNARE by Chaski (2008) and of samples of writing of suicidal students were considered for identifying major themes that occurred in the texts. The most common linguistic themes were: death, love, life after death, tunnel vision, ambivalence, goodbye, apology, blaming addressee, instructions, relationship loss, self burden and reference to third person. Since the focus of the present study was to screen vulnerable emotionally disturbed students through their writing, for the cross validation accuracy analysis, 60 percent of linguistic theme/themes of SNARE had to be present in each student document- poem or essay. The 83.5 percent cross validity results confirmed the presence of the themes in the student data set.

## Discussion on Linguistic Themes

Since the results of this study are significant in relation to the theoretical literature on depression and suicide, theme wise discussion appear below:

### Ambivalence, Relationship Loss

The results support the psychodynamic theory of depression ( Freud, 1917/1957; Ingram, 1991;Kendler et al., 2003) that the reason of pathological grief in a person is the presence of strong negative or positive ambivalent feelings for the lost or supposedly feared to be lost person. In order to maintain link with the lost entity a mental image is formed. When anger for the mental image is turned inward it promotes depression. Loss, self focus and anxiety are also linked with depression. For Freud suicide is an extreme form of depression. **Constricted Cognition Even if Illogical, Absolutes (polarized language)**

The results are in line with Beck et al., (1979) the cognitive triad of depression that focuses on the negative perception of worthlessness of oneself, the world and the future. In case of stressful life events or failure, such as poor grades, students with negative thinking style are more vulnerable to depression. Those students who face trivial failures in life tend to be depressed. Regarding suicide theories, the results of the current research support the findings of: Shneidman, 1973; Leenaars, 1999; Baumeister, 1990; that there are differences in the cognition of suicidal and non suicidal people and cognitive rigidity and irrational thinking play a role in suicide.

#### Tunneled logic, Blaming Addressee,

The results gave credence to the theoretical perspective of depression and suicide by Shneidman, 1973; Riskind, Long,; Lewinsohn, Joiner, & Rohde, 2001; depression and suicide involve tormented and tunneled logic and intolerable emotions. In writing the essays or poems the unconscious emotions, agony, hate, happiness etc of students would have been at play which they penned down.

#### Hopeless or helpless, Self burden, Death, Life after death, Goodbye,

The results also reflected the Learned Helplessness Model of depression, Seligman (1975) that experiences tend to make people feel helpless in altering their situation for the better.

This thinking style make the person feel helpless and perceive the future to be as bleak as the present. Riskind, Long, Williams, & White (2000) presented a model that postulates that depression, hopelessness, anxiety compels a suicidal to commit suicide in order to be relieved from emotional distress. The presence of themes of hopeless or helplessness in the writing of the students reflect that they are dissatisfied with their present situation.

Finally, the results are consistent with the findings of previous research of (Pennebaker et al., 2001 and Rude et al., 2004) that linguistic warning signs of emotional disturbance are discernable through the analysis of poems and essays. The results of Rude et al., (2004) showed positive results of detection of depression in students through computational and qualitative analyses of their essays, per linguistic themes. Moreover, human analyses matched the results of text analysis tool. In line with the results of research of (Gunter and Heavey, 2011) on difference between thought pattern of depressed and non depressed individuals the results of the current paper also reveal 170 (48 percent of the entire data =380) students as producing writings that depict emotional disturbance. The results of present study also support those of (Yeh et al., 2012) that machine related psycholinguistic methods are reliable in detecting thematic

content related to emotions. In line with the findings of (Drum et al., 2012) that a considerable number of university students suffer from emotional disturbance, the results of current study also revealed a significant number of Pakistani university students relaying linguistic warning signs of emotional disturbance related risk factors who could be depressed and at high risk of suicide.

### **Conclusion**

The current study was conducted to detect presence of emotional disturbance related problems, in the poems and essays of Pakistani university students. Positive results have established the effective role English faculty could play in initial screening of disturbed students who could be depressed, stressed, hopeless or suffering from anxiety. This could pave the way for linguistic preventive intervention initiatives, for the well being of the students. In order to implement the initiative, training is required for the English faculty as what to look for in the creative writing of their students. Once a disturbed individual is detected, how to deal with him/her and in case of difficult cases what further procedures to adopt e.g. using related text analysis tools like SNARE in order to verify their concern.

Detection of emotional disturbance in Pakistani university students ask for adoption of immediate measures. The literature related to emotional disturbance in the youth has shown that the common method of detection has been through self report questionnaire whereas this research has put forth possibility of linguistic preventive intervention. Since educational campuses cater to a large population of students linguistic assessment measures for identification of emotional disturbances is possible. Initially, the English faculty needs to be given training, by holding workshops, lectures, as how to be sensitive to the written material of the students, how to associate their verbal behavior with onset of depression etc. Upon detection of a supposedly disturbed person what measures to adopt that could be aimed at the well being of the student, who is undergoing critical period of development.

This research is in line with previous research that teachers identify students after onset of a problem because the teachers interact with the students on daily basis, so they are involved in the process of 'natural screening' of the students. This opportunity of natural screening by the first observers-teachers, can be a powerful means of identifying disturbed students. The current research presents a linguistic intervention for identification of emotionally disturbed students. It would initially fall in the category of 'academic natural screening' because, in Pakistan, written assignments of poems/essays are part of the curriculum and is a regular class activity. Once the English teacher detects repeated disturbed or out of context, depressed or violent language in the written text of a student, then there is a need to adopt 'academic formal screening' measures, by using

computational linguistic text analysis tools such as SNARE in order to substantiate the initial formal screening results.

### Implications

Based on the above findings of this study it is proposed that the educational institutions need to adopt steps for preventive interventions such as:

**Awareness programs:-** staging of plays based on information regarding emotional disturbance related issues and where to look for help. Distribution of pamphlets, containing relevant information (warning signs and risk factors etc.), among the student population or displayed on the Notice Boards. Arranging lectures/seminars / conferences, videos so as to educate the students regarding the gravity of the emotional disturbance menace. Educate the students for resilience and inculcate community service habits, so as to promote social integration.

**Therapeutic writing:-** The English faculty to encourage the students to pen their personal thoughts, on weekly basis. During creative writing or composition classes assign such work as to encourage students to express their inner feelings. Even in literature related area, to devise such activities or assignments for the students through which their own perspective, regarding the literary piece, is exposed.

**Counseling Service:-**Initially, the English faculty could take an emotionally disturbed student on one on one basis, discreetly from rest of the students, in order to advise or help him/her. In case of difficult cases, to report to the concerned authorities and also take the parents of the subject into confidence. It would be up to the concerned authorities and the parents to refer the individual to specialized counselors, for further treatment.

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