

**International Journal of Asian Social Science** 



journal homepage:http://www.aessweb.com/journal-detail.php?id=5007

# THE ANALYSIS OF THE ATTITUDES OF SECONDARY SCHOOL STUDENTS TOWARDS GRIEF

Seher Balci Celik<sup>1</sup>

# ABSTRACT

This research aims to examine the attitudes of secondary school students in Turkey towards grief in terms of gender, age, grade and whether they have experienced loss. This research was conducted with 310 9th, 10th and 11th grade students (198 girls, 112 boys) attending a secondary school in the city center of Samsun in 2010-11. The data was analyzed using t-test and one-way ANOVA. The difference is significant in terms of variables: gender, age, grade level, experience of loss of immediate family, and the duration of loss. It is suggested that individuals who have lost a member of immediate family are in the early stages of deprivation period need to be provided with grief counseling.

**Key Words:** Grief, Attitude towards grief, Secondary school students **JEL Codes:** C12, J13

## INTRODUCTION

Every individual experiences numerous incidents and challenges throughout her/his life. A part of them significantly affect individual's life while s/he can cope with the other part of them. The sudden death of a loved one is one of these experiences. A normal grief response resulted from the death of a loved one does not last forever. After a while we continue with our lives although the intensity of the pain does not wane. The intensity and duration of emotions experienced during grief process show differ from each individual. These differences depend on individual's culture, subculture, coping ability, personality, life experience, social support systems, interpersonal relations; the importance of loss in individual's life and individual characteristics (Oral &Palabiyikoğlu, 1997; Celik&Sayil, 2003; Goka, 2009). Grief is defined as a natural reaction against irremeable loss of a loved one by Celik and Sayil (2003); a psychological response to any loss, a compromise between inner world and reality made to be attuned to by Volkan (1992);

<sup>&</sup>lt;sup>1</sup> Ondokuz Mayıs University-Faculty of Education, Department of Education Science 55200 Atakum-SAMSUN, Turkey **E-mail:** <u>balseher@yahoo.com</u>

physical, emotional, behavioral and cognitive reactions that naturally appear after loss by Worden (2008). Rotter (2007) refers grief as emotional, behavioral, cognitive and physical reactions showed against the loss of a loved one.

Freud defines the term grief in his work "Mourning and Melancholia" (1917) as the restructuring response to the loss experience (cited in Uslu&Berksun, 1997) and states that the self-worth of an individual who has experienced the loss of a loved one diminishes (Sklarew, Krupnick, Ward-Wimmer, and Napoli, 2002; Celik&Sayil, 2003). Lindermann (1944) states that grief is a complicated process which is experienced after loss, and formed by emotional, cognitive, behavioral, physical and social changes, and needed to be closely observed (cited in Uslu&Berksun, 1997). Engel (1961) questions whether grief is an illness and suggests that the unexpected development of this process could cause a disorder. Bowlby (1980) and Parkes (1995) who base their studies on the mother-child bond and loss, and the attachment theory, respectively focus on the reactions to loss in different cultures and grief counseling. Kübler-Ross (1997) emphasizes on the understanding and facilitation of grief process in her book "On Death and Dying". Yalom (1999) highlights the notions of death and life, especially their influences on an individual's psychology in Existential Therapy. Grief is not discussed as a separated mental illness in DSM-IV-TR; rather its differences from depressive disorder are explained. Loss causes an intense regression in which an individual feels helpless, inadequate, incapable, and childish or defeated (Worden, 2003). Individuals may experience ambivalent emotions because of the exaggerated ego ideal resulted from the loss. Grief may then become complicated and pathological. The loss's being traumatic or sudden may cause grief process to be complicated (Brickell&Munir, 2008).

Since reactions showed in grief process as well as effective factors vary among individuals, grief can be defined as normal, complex and traumatic grief. Normal grief is described as physical, emotional, behavioral and cognitive reactions that naturally appear after loss (Worden, 2008). Complex grief refers to dysfunctionality that occurs in individual's social, personal and professional life although 6 months pass after the experience of loss (Zhang, El-Jawahri & Prigerson, 2006). Complex grief can be observed as masked grief (pathological grief), exaggerated grief, delayed grief and chronic grief (Bonanno&Kaltman, 2001). Traumatic grief refers to the reactions showed by individuals after a death resulted from a dreadful incident (Jacop, 1999). The common aspects of all grief types are physical stress, tightness in the throat and muscle weakness (Lindermann, 1994: trans. Uslu, 1997).

Grief process involves three stages:

1. Shock and Denial Stage: It is the first stage experienced after loss. Individual denies the reality of loss. Missing- and refusal-related behaviors are probably observed.

- 2. Annoyance and Depression Stage: Anger and annoyance are the key elements of this stage. Subsequent anxiety causes problems at work and in social relations. Individuals may experience depression that could last weeks or months.
- 3. Acceptance and Resolution Stage: It may last months and years. Life functions are reorganized. After acceptance of the loss, individuals can invest in new relationships and return to their normal lives (Dyregrov, 2008; Celik&Sayil, 2003; Cileli, 1995). Accepting the reality of loss, living through loss and grieving, being attuned to the world without the loved one, and getting interested in other areas of life are important to keep on living and relieve pain. Loss is a natural part of life and grief is a natural response to it.

As it is seen from all the explanations above, grief is a process, and many people get through this process with social and religious rituals. However, depending on many factors such as the relationship context, death's being sudden and unexpected, personality, low self-esteem, overdependence, insecure attachment ways, type of loss, or whether any psychiatric disorder is experienced; grief process can never be completed and may also cause some disorders such as depression and anxiety disorders (Zisook&Shear, 2009; Worden, 2008; Jacobs, 1999; Parkers, 1995). From another point of view, grief process, if processed properly, is probably not a separation from the deceased person; rather a useful guide for people to be involved in new relationships and to create new meanings.

Weller and Weller (1990) suggest that the loss experienced in childhood could trigger psychopathologies such as depression, schizophrenia, alcoholism, and substance dependence in adulthood. Children receiving support after the loss by their living parents have stated that probable psychopathologies in adulthood could not be attributed to the experienced loss. West et al. (1991) suggest that a child is influenced by the loss and changes after the loss. Black (1995) highlights that adults grieving are more prone to get ill; death risk and mood disorders increase; the development of depression poses a risk, even if just a bit, to children, especially to girls. The risk of depression is increased by experiencing a sudden loss, not being provided with good care after loss, being the eldest child of the family as well as being of the same gender as the deceased parent. Individuals in adolescence, on the one hand, are annoyed about their parents' control over them; on the other hand they are dependent on their parents within the identification process. Therefore, the loss of a parent threatens the autonomy of an adolescent. For adolescents, who develop their identities among their peers, the loss of a friend may be greatly destroying (O'Brien, Goodenow& Espin, 1991). As it is seen, loss influences individuals emotionally, socially and physically. The aim of this study is to analyse whether attitudes of secondary school students who have experienced loss and who have not towards grief differ depending on gender, age, grade, experience of loss, and the duration of loss if experienced.

## METHOD

#### **Participants**

The sample group consists of 310 randomly selected students attending a secondary school in the city centre of Samsun-Turkey in the education year 2010-11. 31.8 % of students are girls (n= 198), and 68.2 % are boys (n= 112). The average age of female students is 16.38 (SS= .90), the average age of male students is 16.41 (SS= 1.01).

#### Measures and procedure

"The Attitude to Grief Scale" was used to determine the attitudes of individuals towards grief. *The Attitude to Grief Scale:* The Grief Scale developed by Balci-Celik (2006) is a 5-point Likert scale with 35 items. The Cronbach Alpha calculated to determine internal consistency of the scale is .96. The reliability coefficient determined by the test-retest method is calculated as .84. The validity of similar scales developed with Beck Hopelessness Scale is calculated as r= .80 for total score. Four factors were obtained as the result of factor analysis conducted for structure validity. These are physical, cognitive, behavioral and emotional reactions to grief.

The researcher distributed the scales to the students willing to participate in the research. The participating students were informed that the findings would be used just for the aim, participation depended on willingness, and they did not have to write their personal identity information. After these explanations, students were asked for the verbal consent, and they then answered the scales within 15-20 minutes.

#### Data analysis

Analyses were performed in order to determine possible differences in the gender, experience of loss of immediate family(using in dependent samples t test). A one-way ANOVA was carried out to compare age, students' grade levels and the duration of the loss. One way ANOVA has a significant result, Least Significant Difference (LSD) test was used to find the origin of the difference. LSD Test is developed by Fisher and it is the least significant difference control test (Hovardaoğlu, 1994).

## RESULTS

Table 1 shows the t-test results of the attitudes of the secondary school students, who have experienced loss and who have not, towards grief in terms of their genders.

#### International Journal of Asian Social Science 2(9):1457-1466

	Gender	Ν	М	SD	t
Grief Point	Male	112	78.91	29.67	-3.20*
	Female	98	88.85	24.17	0.20
*P < .01					

Table-1. The attitudes of the students in terms of gender

As Table 1 shows, there is a significant difference between grief reactions of the secondary school students in terms of their genders. The attitudes of female students towards grief are higher than the male students and the difference between point averages is significant.

Table 2 shows the results of the one-way ANOVA belonged to the attitudes of the secondary school students, who have experienced loss and who have not, in terms of their grade levels.

Table-2. Analysis of variance in terms of students grade levels						
Grade Level	Ν	М	SD	F		
9. grade	74	81.01	25.36			
10. grade	81	87.43	23.68	.724		
11. grade	155	86.16	28.63			
Total	310	85.26	26.67			
P > .05						

Table-2. Analysis	of variance	in terms of students'	grade levels
-------------------	-------------	-----------------------	--------------

As Table 2 shows, the difference between the attitudes of the secondary school students is not significant in terms of grade levels.

Table 3 shows the results of the one-way ANOVA belonged to the attitudes of the secondary school students, who have experienced loss and who have not, in terms of their ages.

Age	Ν	М	SD	F
Age 15	69	77.71	24.16	
16	73	85.24	23.41	
17	137	87.14	28.64	3.197*
18	31	93.80	27.38	
Total	310	85.26	26.67	

Table-3. Analysis of variance in terms of students' ages

As Table 3 shows, the difference between the grief reactions of the secondary school students is significant in terms of their ages. According to the results of LSD test, there is a significant difference between 15-year-old and 17-year-old students, and 15-year-old and 18-year-old students. As students' age grows, so do their attitudes towards grief.

Table 4 shows the t-test results of the attitudes of the secondary school students in terms of whether they have experienced loss.

#### International Journal of Asian Social Science 2(9):1457-1466

	Loss	Ν	Μ	SD	t
Grief Point	No	145	69.04	19.62	-12.197**
	Yes	165	99.51	23.79	

Table-4. The students who have lost immediate family and who have not

As Table 4 shows, there is significant difference between grief reactions of the secondary school students in terms of whether they have lost immediate family. The students who have lost their immediate grieve more intensely.

Table 5 shows the results of the one-way ANOVA belonged to the attitudes of the secondary school students who have experience loss towards grief in terms of the duration of the loss.

Table-5. The secondary school students who have experienced loss in terms of the duration of the loss

The Duration of the Loss	N	М	SD	F
6 months	61	113.59	17.61	
6-12 months	80	96.67	21.28	
				37.422**
12 months and over	24	73.20	17.75	
Total	165	99.51	23.79	
**p < .001				

As Table 5 shows, there is a significant difference between the attitudes of the students who have lost a first degree relative towards grief in terms of the duration of the loss. According to the results of LSD test, there is a significant difference between students with 6 months duration of loss, those with 6-12 months, and those with 12 months and over, and between students with 6-12 months duration of loss and those with 12 months and over. As the duration of the loss lengthens, the level of grief shortens.

## DISCUSSION

This study analyses whether there is a significant difference between the attitudes of secondary school students towards grief in terms of gender, grade level, experiencing the loss of a first-degree relative and the duration of the loss. It is found that the difference between their levels of attitudes towards grief is significant in terms of gender, and the mean grief scores of girls are higher than boys. The difference between grief scores is found significant in terms of their levels of age, and this difference is seen between 15-year-old and 17-year-old students, and 15-year-old and 18-year-old students. It is found that as students' age grows, so do their attitudes towards grief. The difference in grief scores of the students who have experienced a loss and the ones who have not is found significant. The mean scores of the individuals who have experienced grief are higher than the students who have not. It is analyzed whether the difference is significant among individuals

who have experienced loss depending on the duration of the loss. It is found that the difference between the students with 6 months duration of loss, the ones with 6-12 months and the ones with 12 months and over; the difference between the students with 6-12 months duration of loss and the ones with 12 months and over were found significant. Level of grief decreases as duration of loss extends. The difference is not significant in terms of age.

Similar results have been seen in the literature. Celik&Sayil (2003) suggest that individual's grief reaction differs depending on individual's coping skills with grief, personality, life experience, social support systems, interpersonal relations; and the importance of the deceased person in individual's life. In general an individual can return to her/his normal life in a few weeks. S/he can establish a balance between her/his social roles in a few months, and redirect her/his life with new and healthy relations in 6 months to 1 year.

Symptoms of grief differ depending on whether an individual has experienced loss of a first-degree relative; anxiety levels are higher in those individuals who have lost immediate family; and there is also a close relationship between the intensity of grief and the closeness to the lost person (Feigelman, Jordan&Gorman, 2009; Laurie&Neimeyer, 2008; Boelen&Prigerson, 2008; Volkan, 1999; Malkinson 2009; Ozcetin, 2000). Balci-Celik (2011) has also concluded that there is a significant difference between the students who have lost a person of his/her immediate family and those who have experience loss, and that the ones who have loss immediate family grieve more intensely. The study of Karabulut (2010) shows that immediate family of the lost one are more affected during the period of acute grief, and that women experience this process more intensely (Merikangas, 2007; Najib 2004), and that sudden deaths are more traumatic for individuals experiencing grief.

Weller et al. (1988) suggest in their comparative study that children who have experience loss recently show more depressive reactions than normal and depressed children. It is also stated that 2-17 year-old children who have lost their fathers show similar symptoms (Van Eerdweg et al., 1985). Fristad et al. (1993) compared children losing a parent and having depression with children experiencing no loss, and found that school behaviors, interest in school, friendship relations and self-esteem are similar in children who have experienced loss and who have not (8 weeks after the loss). In the light of their monitoring studies with 6-12 year-old children, Weller and Weller (1990) suggest that grieving children show more depressive symptoms than normal children, but less than depressed children. Yazgan (2006) states that older people are at highest risk in terms of experiencing grief because of lifetime, and that their ways of grieving may vary. This study also concluded that grief differs depending on gender, levels of grade, and levels of closeness and duration of the loss. Following suggestions can be made on the basis of this result:

- 1. Psychological and physical symptoms as well as depressive tendency are observed in individuals in the grief process. Thus, they need to be counseled due to intense feelings of worthlessness, decreasing desire to be involved in activities, suicidal thoughts. It is suggested to help individuals who cannot grieve realize the reality of their lost and keep on living without the lost one/s, and to provide them with time and support to get through their pain.
- 2. Individuals can be provided "Training for Strengthening Emotions" to help them define and express their painful emotions.
- 3. In view of modern grief theory, coping with loss gets easy with cognitive process and creation of new meaning. In this respect, seminars about the meaning of life can be held for individuals experiencing loss.
- 4. In view of modern grief theory, individuals are also more affected by grief in cases of grief inhibition and insufficient social support. Thus, grieving individuals need to be provided with support in grief process. A study can be conducted to determine the relation between perceived social support levels of grieving individuals.

## REFERENCE

**Balci-Celik, S. (2006)** 'Yas Ölçeği: Geçerlik ve Güvenirlik Calışması''[Grief Scale: Validity and Reliability Test]Türk Psikolojik Danışma ve Rehberlik Dergisi Vol. 25, pp. 105-111.

**Balci-Celik, S. (2011)** "Attitudes of the Adolescents towards Mourning were Compared in terms of their Genders and Levels of Depression" Elementary Education Online Vol. 10, No. 2, pp. 735-742. [Online]: <u>http://ilkogretim</u>online.org.tr

**Berksun, O. E. (1997)** 'Psikososyal ve Medical Yönleriyle Kayıp, Yas ve Ölüm'' [Loss, Grief and Death with Their Psychosocial and Medical Aspects] Kriz Dergisi Vol. 3, No. 1, pp.68-69.

**Black, D.** (1995) "Psychological Reactions to Life Threatening Terminal İllnesses and Bereavement" by M. Rutter, E. Taylor & L. Hersov Eds., Child and adolescent psychiatry (pp. 776-793) Blackwell Science Ltd. Oxford.

**Boelen, P. A and G. H. Prigerson** (2007) "The Influence of Symptoms of Prolonged Grief Disorder, Depression, and Anxiety on Quality of Life Among Bereaved Adults: A Prospective Study"European Archives of Psychiatry and Clinical Neuroscience Vol. 257, No.8, pp. 444-452.

**Bonanno, G. A and S. Kaltman (2001)** "The Varieties of Grief Experience" Clinical Psychology Review Vol. 21, No. 5, pp. 705-734.

Bowlby, J. (1980) Attachment and Loss. Anxiety and Mourning, Basic Books, Newyork,

**Brickell C and K. Munire (2008)** "Grief and Its Complications in Individuals with Intellectual Disability" Harvard Review of Psychiatry Vol. 16, No. 1, pp. 1-12.

**Çelik, S and I. Sayıl (2003)** "Patolojik Yas Kavramına Yeni Bir Yaklaşım: Travmatik Yas" [A New Approach to Pathological Grief: Traumatic Grief] Kriz Dergisi Vol.11, No.2, pp. 29-34.

Cileli, M. (1995) "Ölüm" [Death] Gelişim Psikolojisi, 3.baskı, Onur B (Ed), Ankara, İmge Kitabevi,

**Diagnostic and Statistical Maunual of Mental Disorders (2000)** American Psychiatric Association 4. Edition, Test Revision. Washington DC.

**Dyregrov, A. (Foreword by Willian Yule) (2008)** Grief in Children: A handbook for Adults. GBR: Jessica Kingsley Publishers, London.

Feigelman, W. Jordan, J. R and B. S. Gorman (2009) "How They Died, Time Since Loss, and Bereavement Outcomes" OMEGA--Journal of Death and Dying Vol.58, No. 4, pp. 251-273.

**Freud, S. (1917)** "Mourning and Melancholia- Yas ve Melankoli" (Çev. R. Uslu ve O. Berksun (1997) Kriz Dergisi Vol. 1, No. 2, pp. 98-103.

**Fristad, M.A. Jedel, R. Weller, R. A et al. (1993)** "Psychosocial Functioning in Children After the Death of a Parent" American Journal of Psychiatry Vol. 1, No.150, pp. 511-513.

**Goka, E. (2009)** Ölme & Ölümün ve Geride Kalanların Psikolojisi [Death and the Psychology of Dying and Survivors] Timaş Yayınları, Istanbul.

Hovardaoğlu, S. (1994) Davranış Bilimleri için Araştırma Teknikleri. [Statistics for behavior Sciences] Hatiboğlu Yayınları, Ankara.

Jacobs, S. (1999) Traumatic Grief, Diagnosis, Treatment and Prevention. Brunner/Mazel Inc.

Karabulut, E. (2010) "Diyarbakır'daki Taziye Evlerinde Akut Dönem Yas Sürecinin Yaşanması ve Yasın Ağırlık Derecesine Etki Eden Faktörlerin Belirlenmesi" [Experiencing Acute Grief Process in Condolence Houses in Diyarbakir and Determining the Factors Affecting the Severity of Grief ] Yayınlanmamış Tıpta Uzmanlık Tezi, Dicle Üniversitesi Tıp Fakültesi Ruh Sağlığı ve Hastalıkları Anabilimdalı.

**Kübler-Ross, E. (1997)** "Ölüm ve Ölmek Üzerine" [On Death and Dying] Çev: Büyükkal B.) Boyner Yayınları, İstanbul.

Laurie, A and R. A. Neimeyer (2008) "African Americans in Bereavement: Grief as a Function of Ethnicity" OMEGA--Journal of Death and Dying Vol. 57, No. 2, pp. 173-193.

**Lindermann, E. (1944)** "Symptomatology and Management of Acute Grief" American Journal of Psychiatry Vol. 101, pp. 141-148.

**Malkinson, R. (2009)** Bilişsel Yas Terapisi [Cognitive Grief Therapy] (Çev; Semra Kunt Akbaş) Boylam Psikiyatri Enstitüsü İstanbul.

**Merikangas, K. R. (2007)** Ölüm, Ölmek ve Yas [Death, Dying and Bereavement] Comprehensive Textbook Of Psychiatry 8. Edition:,Benjamin Sadock (TürkceCev:Hamdullah Aydın) Güneş Yayınevi Ankara.

Najip A. Lorberbaum, J. P. Kose, S. et al. (2004) "Regional Brain Activity in Women Grieving Aromatic Relationship breakup" American Journal Psychiatry Vol. 161, pp. 2245-2256.

**O'Brien, J. M. Goodenow, C and O. Espin** (**1991**) "Adolescents Reactions to the Death of a Peer" Adolescence Vol. 26, No. 102, pp. 431-440.

**Oral, A. E and R. Palabiyikoglu** (**1997**) Yas Reaksiyonu, Psikojenik Amnezi: Bir olgu [Grief Reaction, Psychogenic Amnesia: A case] Kriz Dergisi Vol. 3, No. 1-2, pp. 201-205.

**Özçetin, A. (2000)** Diyarbakır Bölgesinde Yas ve Din İlişkisi [Grief and Religion Relationship in Diyarbakir Region] The Journal of Psychiatry and Neurological Sciences Vol. 13, No. 1, pp. 12-18.

Parkers, C. M. (1995) Bereavement Studies of Grief in Adult life. Third edition Penguenboks. New York.

Rotter, J. C. (2007) "Family Grief and Mourning" The Family Journal Vol.8, No.3, pp. 275-277.

Sklarew, B. Krupnick, J. Ward-Wimmer, D and C. Napoli (2002) The School-Based Mourning Project: A Preventive Intervention in the Cycle of Inner-city Violence" Journal of Applied Psychoanalytic Studies Vol. 4, No. 3, pp. 317-330.

Weller, E. B. Weller, R. A. Fristad, M. A. Cain, S. E and J. Bowes (1988) "Should Children Attend Their Parents' Funeral?" Journal of the American Academy of Child and Adolescent Psychiatry Vol. 27, No. 5, pp. 559-562.

Weller, E. B and Weller, R. A. (1990) Grief in Children and Adolescents B.D. Garfinkel, G. A. Carlson & E. B.Weller (Eds), Psychiatric Disorders in Children and Adolescents (pp.37-47). W.B. Saunders Company, Philadelphia.

Weller, R. A. Weller, E. B. Fristad, M. A and J. M. Bowes (1991) "Depression in Recently Bereaved Prepubertal Children" American Journal of Psychiatry Vol. 148, pp. 1536-1540.

West, S. G. Sandler, I. Pillow, D. R. Baca, L and J. C. Gersten (1991) "The Use of Structural Equation Modeling in Generative Research: Toward the Design of a Preventive Intervention for Bereaved Children" American Journal of Community Psychology Vol. 19, No.4, pp. 459-480.

**Worden, J. M. (2008)** Grief Counseling and Grief Therapy: A Handbook for the Mental Health practitioner. (4.Edition) New York, NY, USA: Springer PublishingCompany.

Worden, J. W. (2003) Yas Danışmanlığı ve Yas Terapisi Ruh Sağlığı Çalışanları İçin El Kitabı [Greif Counseling and Grief Therapy. A Handbook for the Mental Health Practitioner] (Çev. Bedriye Öncü) Ankara Üniversitesi Tıp Fakültesi Yayınları, Ankara.

Van Eerdewegh, M. M. Clayton, P. J and P. Van Eerdewegh (1985) "The Bereaved Child: Variables Influencingearly Psychopathology" British Journal of Psychology Vol. 147, No.2, pp. 188-194.

**Volkan, V. (1992)** Psikanaliz Yazıları [Psychoanalytic Writings] (Çev. Çevik A, ve Ceyhun, B.) Hekimler Yayın Birliği, (pp.58-95).

**Yalom, I. (1999)** Varoluşcu Psikoterapi [Existential Psychotherapy] (Çev. Babayiğit.Z. İ.) Kabalcı Yayınları: Istanbul.

Yazgan, Ç. (2006) "Yaşlılıkta Yas"[Grief in Elderly] Anadolu Psikiyatri Dergisi Vol. 7, pp. 179-184.

**Zhang, B. El-Jawahri, A and H.G. Prigerson (2006)** "Update on Bereavement Research: Evidence-Based Guidelines for Diagnosis and Treatment of Complicated Bereavement" Journal of Palliative Medicine Vol. 9, No. 5, pp.1188-1203.

**Zisook, S and K. Shear (2009)** "Grief and Bereavement: What Psychiatrists Need to Know" World Psychiatry Vol. 8, No. 2, pp.67-74.