RATIONAL EMOTIVE BEHAVIOR THERAPY IN MITIGATING DEPRESSION AND ENHANCING ACADEMIC PERFORMANCE OF DEAF AND HARD OF HEARING ADOLESCENTS IN SELECTED PRIMARY SCHOOLS IN NAIROBI COUNTY, KENYA.

by

Stellah Moraa Osoro Kerongo

A dissertation presented to the School of Human and Social Sciences

of

Daystar University
Nairobi, Kenya

In partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY
in Clinical Psychology

October 2020
APPROVAL

RATIONAL EMOTIVE BEHAVIOR THERAPY IN MITIGATING DEPRESSION AND ENHANCING ACADEMIC PERFORMANCE OF DEAF AND HARD OF HEARING ADOLESCENTS IN SELECTED PRIMARY SCHOOLS IN NAIROBI COUNTY, KENYA.

by

Stellah Moraa Osoro Kerongo
14-2139

In accordance with Daystar University policies, this dissertation is accepted in partial fulfillment of the requirements for the Doctor of Philosophy degree

Date:

Alice Munene, Psy.D.,
Supervisor

Mary Mogute, Ph.D.,
Supervisor

Alice Munene, Psy.D.,
Coordinator, Ph.D, Clinical Psychology

Kennedy Ong’aro, Ph.D.,
Dean, School of Human and Social Sciences
DECLARATION

RATIONAL EMOTIVE BEHAVIOR THERAPY IN MITIGATING DEPRESSION AND ENHANCING ACADEMIC PERFORMANCE OF DEAF AND HARD OF HEARING ADOLESCENTS IN SELECTED PRIMARY SCHOOLS IN NAIROBI COUNTY, KENYA.

I declare that this dissertation is my original work and has not been submitted to any Other college or university for academic credit.

Signed: ____________________________
Stellah Moraa Osoro Kerongo
14-2139

Date: ________________________
ACKNOWLEDGEMENTS

I have learned a lot and really enjoyed while working on this dissertation. First and foremost, I would like to praise and thank God, the almighty, who has granted countless blessing, knowledge, and opportunity to the writer, so that I have been finally able to accomplish my dissertation. I would like to sincerely thank all those who helped me for their valuable support during the entire process of this dissertation. I thank my supervisor Dr. Alice Munene, for her constructive guidance, contribution, support and motivation. I also wish to express my gratitude to my supervisor Dr. Mary Mogute, for her encouragements, care and supervision.

In a special way, I acknowledge my husband, Tom Maisiba, my children, Shawn, Britney, Brian, Mercy and Bradley for the sacrifice, support and the prayers they accorded me. Lastly, I appreciate the Osoro’s, Maisiba’s, Deborah Opudo, the 5th Cohort and all my relatives and friends for their ideas, prayers and encouragement during the writing process.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROVAL</td>
<td>ii</td>
</tr>
<tr>
<td>DECLARATION</td>
<td>iv</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>v</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS AND ACRONYMANS</td>
<td>x</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>xii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>1</td>
</tr>
<tr>
<td>CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY</td>
<td>2</td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Background to the Study</td>
<td>9</td>
</tr>
<tr>
<td>1.3 Statement of the Problem</td>
<td>20</td>
</tr>
<tr>
<td>1.4 Purpose of the Study</td>
<td>22</td>
</tr>
<tr>
<td>1.6. Research Questions</td>
<td>23</td>
</tr>
<tr>
<td>1.7 Justification for the Study</td>
<td>23</td>
</tr>
<tr>
<td>1.8 Significance of the Study</td>
<td>25</td>
</tr>
<tr>
<td>1.9 Assumptions of the Study</td>
<td>26</td>
</tr>
<tr>
<td>1.10. Scope of the Study</td>
<td>26</td>
</tr>
<tr>
<td>1.11 Limitations and Delimitations of the Study</td>
<td>27</td>
</tr>
<tr>
<td>1.12 Definition of Terms</td>
<td>27</td>
</tr>
<tr>
<td>CHAPTER TWO: LITERATURE REVIEW</td>
<td>31</td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>31</td>
</tr>
<tr>
<td>2.2 Theoretical Framework</td>
<td>31</td>
</tr>
<tr>
<td>2.3 Severity of Depression among Deaf and Hard of Hearing Adolescents</td>
<td>38</td>
</tr>
<tr>
<td>2.4 Factors Associated with Depression and Poor Academic Performance</td>
<td>48</td>
</tr>
<tr>
<td>2.5 Relationship between Depression and Academic Performance of DHH</td>
<td>73</td>
</tr>
<tr>
<td>Adolescents</td>
<td></td>
</tr>
<tr>
<td>2.6 Efficacy of Using REBT in Reducing Depression Symptoms</td>
<td>76</td>
</tr>
<tr>
<td>2.7 Conceptual Framework</td>
<td>80</td>
</tr>
<tr>
<td>2.8 Discussion</td>
<td>81</td>
</tr>
<tr>
<td>2.9 Summary</td>
<td>82</td>
</tr>
<tr>
<td>CHAPTER THREE: RESEARCH METHODOLOGY</td>
<td>83</td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>83</td>
</tr>
<tr>
<td>3.2 Research Design</td>
<td>83</td>
</tr>
<tr>
<td>3.3 Population</td>
<td>84</td>
</tr>
<tr>
<td>3.4 Sample Size</td>
<td>87</td>
</tr>
<tr>
<td>3.5 Sampling Techniques</td>
<td>90</td>
</tr>
<tr>
<td>3.6 Data Collection Instruments</td>
<td>91</td>
</tr>
<tr>
<td>3.7 Inclusion and Exclusion Criteria</td>
<td>93</td>
</tr>
<tr>
<td>3.8 Data Collection Procedures</td>
<td>94</td>
</tr>
<tr>
<td>3.9: Pretesting</td>
<td>98</td>
</tr>
<tr>
<td>3.10 Data Analysis Plan</td>
<td>98</td>
</tr>
<tr>
<td>3.12 Ethical Considerations</td>
<td>101</td>
</tr>
<tr>
<td>3.13 Summary</td>
<td>104</td>
</tr>
</tbody>
</table>
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

105

4.1 Introduction ............................................................................................................. 105
4.2 Analysis and Interpretation of Data ....................................................................... 110
4.2.2 Factors associated with depression and poor academic performance ........... 116
4.2.3 Relationship between depression and academic performance ...................... 131
4.2.4 Efficacy of REBT in mitigating depression symptoms .................................... 132
4.3 Summary of Key Findings .................................................................................... 142
4.4 Summary ............................................................................................................... 144

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS ...

145

5.1 Introduction ............................................................................................................ 145
5.2 Discussion of Key Findings ................................................................................... 145
5.2.4 Efficacy of REBT in mitigating depression and enhance academic performance of DHH adolescents .......................................................... 158
5.3 Conclusions .......................................................................................................... 159
5.4 Recommendations ............................................................................................... 160
5.5 Recommendations for Further Research ............................................................. 161

REFERENCES ............................................................................................................ 163

APPENDICES ................................................................................................................ 185

Appendix A: Questionnaire ....................................................................................... 185
Appendix C: Consent Explanation .............................................................................. 190
Appendix D: Consent to Participate Form (Experimental Group) ......................... 191
Appendix E: Consent to Participate Form (Control Group) .................................. 192
Appendix F: Research Assistant Confidentiality Form ........................................... 193
Appendix G: Data Entry Clerk/Statistician Confidentiality Form .......................... 194
Appendix H: Research Schedule .............................................................................. 195
Appendix I: Beck’s Depression Inventory ............................................................... 196
Appendix J: Beck’s Depression Inventory in Kenya Sign Language .................... 200
Appendix K: REBT Depression Manual .................................................................. 204
Appendix: J: Ethical Clearance ................................................................................. 223
Appendix K: Letter of Introduction from Daystar University .............................. 224
Appendix L: Research Permit ................................................................................... 225
Appendix M: Research Approval by Joseph Kangethe Primary School ............... 226
Appendix N: Research Approval by Aga Khan Primary School ............................ 227
Appendix O: Biodata Report ..................................................................................... 228
Appendix P: Plagiarism Report ................................................................................. 229
LIST OF TABLES

Table 2.1: World Health Organization Grades of Hearing Impairment .......................... 48
Table 3.1: Treatment Structure .................................................................................... 97
Table 3.2: Data Management Table ............................................................................ 100
Table 4.1: Socio-Demographic Characteristics at Baseline ...................................... 106
Table 4.2: Characteristics Across Research Groups at Baseline ................................ 109
Table 4.3: Severity of Depression and the Socio-Demographic Characteristic .......... 111
Table 4.4: Distribution of Participants’ Academic Performance at Baseline ............. 116
Table 4.5: Socio-demographic Characteristics and Academic Performance ............ 117
Table 4.6: Factors that Lead to Poor Academic Performance .................................. 119
Table 4.7: Respondent’s Academic Performance and Predictive Factors .............. 121
Table 4.8: ANOVA on Association of Predictive Factors and Academic Performance.. 123
Table 4.9: Respondent’s Scores on Depression at Baseline and Predictive Factors ..... 125
Table 4.10 Difference in Means Scores on Depression and Predictive Factors .......... 128
Table 4.11: Academic Score, Depression Scores and Demographic Characteristics... 130
Table 4.12: Nonparametric Correlation Test ............................................................... 131
Table 4.13: Scores on Depression and Key Demographic Characteristics ................. 133
Table 4.14: Mean Estimates of Depression Scores for REBT and Control Groups .... 134
Table 4.15: Effect Sizes of the Intervention ................................................................. 138
Table 4.16: Independent Sample T-Test Group Mean Statistics ............................... 140
Table 4.17: The Independent Samples T-Test ............................................................... 140
Table 4.18: Estimates of Academic Performance for REBT and Control Groups ..... 141
LIST OF FIGURES

Figure 2.1: Traditional ABC Model of REBT ................................................................. 33
Figure 2.2: An Integrative Modern ABC Model of REBT Approaches ......................... 36
Figure 2.3: An Integrative Modern ABC Model of REBT Approaches ......................... 36
Figure 3.1: Data Collection Flow Chart ....................................................................... 96
Figure 4.1: State of Depression Symptoms at Baseline Across the Groups .................. 135
Figure 4.2: State of Depression Symptoms at Midline Across the Groups ................. 136
Figure 4.3: State of Depression Symptoms at End Line Across the Groups ............... 137
Figure 4.4: Estimated Marginal Means of the Intervention ........................................ 139
## LIST OF ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPF</td>
<td>African Child Policy Forum</td>
</tr>
<tr>
<td>ASL</td>
<td>American Sign Language</td>
</tr>
<tr>
<td>CATS</td>
<td>Continuous Assessment Tests</td>
</tr>
<tr>
<td>CBT</td>
<td>Cognitive Behavior Therapy</td>
</tr>
<tr>
<td>CRPD</td>
<td>Convention on the Rights of Persons with Disabilities</td>
</tr>
<tr>
<td>DB</td>
<td>Decibels</td>
</tr>
<tr>
<td>DESK</td>
<td>Deaf Empowerment Society of Kenya</td>
</tr>
<tr>
<td>DU</td>
<td>Daystar University</td>
</tr>
<tr>
<td>DU-ERB</td>
<td>Daystar University Ethics Review Board</td>
</tr>
<tr>
<td>DHH</td>
<td>Deaf and Hard of Hearing</td>
</tr>
<tr>
<td>DSM 5</td>
<td>Diagnostic and Statistical Manual of Mental Disorders Fifth edition</td>
</tr>
<tr>
<td>HI</td>
<td>Hearing Impairment</td>
</tr>
<tr>
<td>IDEA</td>
<td>Individuals with Disabilities Education Act</td>
</tr>
<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
</tr>
<tr>
<td>KNAD</td>
<td>Kenya National Association of the Deaf</td>
</tr>
<tr>
<td>KNEC</td>
<td>Kenya National Examination Council</td>
</tr>
<tr>
<td>KSDC</td>
<td>Kenya Society of the Deaf Children</td>
</tr>
<tr>
<td>KSL</td>
<td>Kenya Sign Language</td>
</tr>
<tr>
<td>NACOST</td>
<td>National Commission for Science, Technology and Innovation</td>
</tr>
<tr>
<td>PPI</td>
<td>Pre-Primary one</td>
</tr>
<tr>
<td>PWD</td>
<td>People with Disability</td>
</tr>
<tr>
<td>REBT</td>
<td>Rational Emotive Behavior Therapy</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>SAT</td>
<td>Stanford Achievement Test</td>
</tr>
<tr>
<td>SEN</td>
<td>Special Education Needs</td>
</tr>
<tr>
<td>SL</td>
<td>Sign Language</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
</tr>
<tr>
<td>WRD</td>
<td>World Report on Disability</td>
</tr>
<tr>
<td>UNHC</td>
<td>United Nations High Commissioner for Human Rights</td>
</tr>
<tr>
<td>R</td>
<td>United States of America</td>
</tr>
<tr>
<td>USA</td>
<td>World Federation of the Deaf</td>
</tr>
<tr>
<td>WFD</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
ABSTRACT

This study employed Rational Emotive Behavior Therapy (REBT) with the intention to reduce depression symptoms and enhance academic performance of deaf and hard of hearing (DHH) adolescents in selected primary schools, Nairobi County, Kenya. The main objective was to establish the effectiveness of REBT in treating depression and enhancing academic performance among DHH adolescents. The study utilized quasi-experimental design in which Aga Khan Primary School was the experimental group and Joseph Kangethe Primary School was the control group. The study sample size was 64 DHH adolescents from Pre-Primary one to class eight aged between 14 to 20 years. Data collection was done through the social demographic questionnaires, Becks depression inventory and document analysis. The findings revealed that the respondents’ academic performance was affected by the mode of communication used, frequency of respondents’ caregiver assistance in doing homework, giving extra homework and who the respondents share their problems with at $\beta = -0.010$ (p=0.014), $\beta=-0.153$ (p=0.054), $\beta=0.005$ (p=0.007) and $\beta=0.111$ (p=0.050) respectively. In addition, the study findings revealed that there was association between predictive factors and academic performance on caregivers who attended school meetings (p=0.034), encouraging respondents to always work hard (p=0.034), caregivers who are role models to respondents (p=0.052) and respondents being taught life skills by caregivers (p=0.006). The results revealed that the effect size between subjects was substantial and had effects from baseline to midline $F=33.348 \, d=.353 \, (CI=-1.460 \, - \, .709)$ and midline to end line at $F=61.449 \, d = .502 \, (CI= \, -1.907 \, - \, -1.132)$. National policy makers (Ministry of Education/KICD) implement inclusion of sign language in the curriculum taught in schools and exclusion of school based counselors.
DEDICATION

This dissertation is dedicated to my late father, Bernard Osoro, who never lived to witness what he wanted me to achieve. It is also dedicated to all the deaf population and their families. Lastly, it is dedicated to all special population in Kenya.
CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter presents an introduction and background to the study, in addition to discussing the problem statement, purpose of the study, objectives of the study, rationale and significance of the study. Finally, it explains the assumptions of the study, scope and definition of terms as used in the study.

According to World Health Organization (WHO, 2011), disability is complex, dynamic, multidimensional, and challenging. Individual, family, and society are affected with disability in many ways and this leads to great social economic consequences in the world (Gallucci, 2011). Abled differently is the consequence of limitations in simple physical, spiritual and mental roles and these limitations are of vibrant significance in each person (Disabled World, 2019). Further, disabled world indicates that disability is a changing concept but also emphasizes that abled differently depends on the communication among persons with deficiencies, negative perceptions and conservational obstacles that deter their potential and active involvement in the general public on the same base with everyone.

The weight of people abled differently on psychosocial status is indisputable, besides its physical limitations, it has psychosomatic impact on a disabled person’s emotions and behaviors (Mulat, 2018). In addition, WHO argued that enlightening public involvement can be made by dealing with blocks which delay people with disabilities in daily activities (WHO, 2011). Furthermore, an individual’s setting has a big effect on the experience of disability. For example, unreachable settings create inability by generating obstructions to contribution and involvement. More patterns of the likely undesirable effect
of the setting comprise, a hearing impaired person minus a sign language interpreter, a
wheelchair consumer in a structure without a compliant toilet or elevator and a sightless
person using a computer without screen-reading software. All the same, the surroundings
can be adjusted to accommodate all, avoid damages, and alleviate the effects for people
abled differently.

Apart from the general view of disability, there are different types of disabilities
comprising visual, hearing loss, depression, cerebral, acquired brain injury and somatic
disability (Krahn, Walker, & Correa-De-Araujo, 2015). The researcher looked into deaf
and hard of hearing disability. Most researchers on deafness in children focus on
communication and verbal improvement (Movallali, 2013). Frequency of depression
issues in a society for hearing impaired infants is about 40%. In addition, it is projected
that only 2% of hearing impaired grownups only are attended to largely because of
communication barriers. Having discussed disability, it is important to look at challenges
which result from being disabled.

Developing a disability at any developmental stage in life creates varied challenges
(Chan & Zoellick, 2011). Occasionally, this change is transitory but in some scenarios it is
long-lasting. On the same, disability can lead to self-hate and generate awful feelings and for
most persons lead to depression. There are many explanations why becoming incapacitated
can make an individual vulnerable to depression (Convention on the Rights of Persons with
Disabilities, 2016). Some of the reasons include loss of a life or purpose which leads to
feelings of worthlessness. Decrease in self-esteem makes one develop negative self-
perception, lack of confidence leading to sadness, anger, and frustration over career loss
which gradually lead to depression. Most studies categorize depression as the
most incapacitating proven diagnosis globally, it has been described as a regular unfriendly disease amid the psychological associated issues (Rostami, Bahmani, Bakhtyari, & Movallali, 2014).

According to WHO (2018), depression is viewed as a common mental disorder touching a person with major depressed attitude, irritation, reduced vigor, hopelessness moods and less personal confidence, poor sleep hygiene, loss of appetite, and poor concentration. Rostami et al. (2014) distinguished that tearfulness, slowed responses, weight loss, eating as well as sleeping disorders, restlessness, loss of interest or pleasure in most activities or withdrawn are signs of a depressed individual. These depressive symptoms are more pronounced in the deaf community and largely affects their daily functioning especially their academic performance (Zait & Dotan, 2017).

In addition, the only distinctive factor between individuals without hearing loss and deaf persons is response to disclosing their depressive issues to their caregivers. Communication barriers substantially affect DHH persons in explaining issues bothering themselves to their caregivers, intimate members, teachers, doctors, therapists and psychiatrics (Olufemi, 2017). In regard to DSM-5 standards, depression is measured as mental diseases related with increased mental conditions categorized by failure to experience pleasure, feeling of hopelessness which can considerably increase according to age across population (American Psychiatric Association, 2013). According to DSM-5, severity of depression may reach as high as 20% in clinical settings and with a projected lifetime severity of 10% (WHO, 2018). Next paragraph looked at the perception on deafness.
Deafness is defined as a varied state with broad effects on social, emotional and cognitive development (Rostami, 2014). DHH adolescents are frequently challenged with extra difficulties in handling these variations in a hearing world where communication and access to information is difficult, especially about their social world (Brice & Strauss, 2016). Moreover, DHH adolescents who practice oral language as their means of interaction are more probable to miss or be misunderstood in their environment and they do not achieve a lot as compared to the non-deaf friends (Adibsereshki, Movallali, & Vernostaderani, 2015). Within the family context, around 90-95% of DHH individuals are born to non-deaf caregivers (Acak & Kaya, 2016).

Notably, caregivers often find real interaction with their DHH adolescents to be problematic, frustrating and difficult. This is because of communication breakdown, peer interaction and associations can be difficult for deaf adolescents. These youth’ interaction strives to ease public communication with non-deaf friends might destructively influence their perception making them vulnerable to depression. According to Zia, et al., (2016) DHH adolescents in primary mainstream surroundings encounter problems in public involvement and interactions with non-deaf friends. Additionally, they undergo difficulties in regard to societal involvement, personal regard, self awareness and superficial humiliation.

Further, inside the school setting, DHH youths experience educational trials and are in danger of low grades in education attainment (Bate, et al., 2017). Findings from a study by Zia, et al., (2016) discovered four subthemes associated to complications and stressores in school including communication, learning difficulties, teacher-student relationships, and problems in classroom participation audibility. Unconducive surrounding, poor audibility
and inadequate illumination create complications and deepen the challenges of DHH pupils who are combined with non-deaf learners (Adibsereshki, Movallali, & Vernostaderani, 2015). Deaf adolescents communicated rage and stress about the loud voice in class, and the absence of caring from their able colleagues (Zia et al., 2016). Consequently, this leads to unexplainable issues associated to schoolroom contribution. They also felt rejected and left out when it comes to class discussions.

The kind of treatment they get both from home and school affect how they perceive themselves, which in turn influences how they learn and perform in school (Brice & Strauss, 2016). Poor self-perceptions, low self-concepts, interpersonal relationships, identity development and family issues are among the factors which contribute to depression of DHH children (Acak & Kaya, 2016). Due to dismal historical academic performance of DHH adolescents, many parents opt for their deaf child to stay at home (Agyire-Tettey, Cobbina, & Hemanoo, 2017). Those who attend school are taken there to pass time. No emphasis or follow-ups are made to ensure these children learn, perform optimally and consequently pursue education (Brice & Strauss, 2016).

Similarly, other parents take their deaf children to school so that they can have ample time to do their daily tasks (Knoors & Marschark, 2014). Furthermore, DHH children are treated as a burden and obstacle to what a parent is supposed to do (Szarkowski & Brice, 2016). In addition, there are minimal facilities which help DHH adolescents to grow, develop emotionally and cognitively for positive adoption (Rhodes, 2015).

Mostly, when a child is born deaf in a family, many spouses develop problems because of blame games on the cause of disability, which eventually leads to conflicts, separation and sometimes divorce (Napoli, 2015). The separation affects the DHH child’s
growth and development. Additionally, deaf children become vulnerable because of their special needs and conflicts that drain family resources. Consequently, it becomes harder for deaf children to join school, learn consistently and sustain good performance (Andrade, 2015). Due to these family barriers, deaf children are left to stay at home denying them the right to education. This is likely to pose a big problem in society because of the increasing number of deaf children.

Increase in number of children with hearing impairment can be explained with evidence of a survey carried out in America by investigators from Brigham and Women’s Hospital in Boston, which examined national yearly surveys of health American citizens (Guttenberg, 2010). They examined the frequency of deafness amongst USA adolescents in the middle of 1944 and 1988 and linked it with severity of deafness in 2005 and 2006. Findings of this study revealed a 31% rise in deafness on 12 and 19 years old (Neighmond, 2010).

In 2005, a review of income and program participation projected that less than 1 in 20 Americans were hearing impaired population (Mitchell, 2005). However, the sum of people with hearing impairment has been gradually increasing during the last decade (WHO, 2018). WHO (2005) projected that 278 million people globally were living with Hearing Impairment (HI). Additionally, WHO (2012) produced new approximations on the extent of deaf based on 42 populated readings. Internationally, they suggest that there are 360 million deaf individuals. Recent report from WHO (2018) indicated that about 466 million individuals globally suffer from deafness and 34 million are infants. WHO (2018) projected that by 2050, over 900 million persons will have disabling hearing; hence, the
need for concerned stakeholders to look for mitigation measures to alleviate special education of DHH adolescents.

In Kenya, disabling DHH impairment has serious implication on adolescent’s development (Maingi-Lore, 2016). It affects intelligibility of speech, thus interfering with communication process and posing a challenge in accessing social, educational and mental health services (Mwiti & Ngugi, 2018). As a result, adolescents with hearing loss end up having poor psychosocial development, which consequently leads to depression and low academic performance (Wanjiru, 2014).

Unfortunately, the population of hearing impairment persons is growing highly (WHO, 2018) implying that there will be many DHH children who will be susceptible to depressive disorders and low academic achievements. In respect to available literature, it is worth noting that very few scholars have scrutinized depression in relation to academic performance of deaf adolescents (Sambu, Otube, & Bunyasi, 2018). That notwithstanding, outcomes have been heterogeneous, and the severity rates may be overestimated because of other comorbid mental illnesses. In Kenya, there are few studies in this area, specifically, in Nairobi little has been done on depression and DHH adolescents in relation to academic performance (Anyango, 2018). Most studies on hearing impairment done in the Coast, Kiambu and West Kenya regions have looked into special education perspective. However, very few studies have been done from the psychological point of view. This realization compelled the researcher to investigate factors causing depression among DHH adolescents and how depression can be mitigated using REBT to enhance their academic performance.
1.2 Background to the Study

The account of people abled differently is from the ancient times (Shahnaz, 2013). Disability is not as a result of sins done by the people or caregivers of the person, though most communities think it does (Bunning, 2017). Consequently, due to societal explanations on roots and theories of disabilities, undesirable attitudes are developed concerning such people causing social disparity among persons with disabilities and those without disability (Luft, 2017). Conferring to Convention on the Rights of people abled differently Disabilities (2016), over billion individuals on earth are abled differently and their numbers are steadily growing. The same report indicated that people living with disability (PWD) are met with numerous obstacles in education, health care, transportation, jobs and even having their voices heard by caregivers which result in unwarranted depression.

Globally, persons with disability have worse health outcomes, poorer academic performance, less financial participation and advanced proportions of poverty than people without disabilities (Bara, 2015). A report on disability published jointly by WHO (2011) and WRD (2011) revealed that conditions faced by people living with disability differ from country to country, while their basic problems and challenges remain the same. A study done in California indicated that in most countries, there was stigma and discrimination which led to depression due to withdrawal and loneliness (Carter, 2016). In addition, PWD experienced barriers in accessing services due to communication and physical barriers (Kushalnagar, Bruce, Sutton, & Leigh, 2017).

In regard to the barriers, education was supreme as it had important economic, social and individual returns (Allen, Yen Ng, & Archbold, 2016). Education had the
potential to lift children and adolescents out of chronic poverty. Accessing quality education could have improved learning outcomes, created positive self-confidence and reduced depression (Singal, 2017). These emerging barriers led the Economic and Social Council to set the mainstreaming disability agenda (United Nations, 2007). The main aim was to provide an impression of the setup, facts and resources related to mainstreaming disability in the expansion agenda on the context of protecting the human rights of people abled differently.

Ordinarily, the mainstreaming led by global report on disability gave proof for innovative policies and programs that can develop the lives of people abled differently (United Nations, 2007). The report facilitated implementation of the United Nations Convention on the Rights of Persons with Disabilities (United Nations Human Rights, 2008). The current situation is that some of the policies and programs such as accessing building, building ramps, and mainstreaming agenda are partially being followed. However, deaf people are still neglected when it comes to sharing of available resources and opportunities (Correll, 2017).

Amid prevalence of disability, more than a billion people or about 15% of global people are projected to have different types of disability (Global Population Estimates, 2010). Conferring to the World Health Survey, around 785 million (15.6%) people 15 years and older live with disability, while the Global Burden of Disease estimated a figure of around 975 million (19.4%) (Mitra & Sambamoorthi, 2014). In addition, the Global Burden of Disease estimated childhood disability severity to be 95 million (5.1%) children, of whom 13 million (0.7%) had severe disability (Thompson, 2017). Regarding mental linked disabilities, a universal upsurge in mental illness contributes to the increase of disability.
Further, severity approximations of 12-month severe depression range between 0.8 and 6.8%. It is important to note that many mental disorders begin between infant and teenage years (Tsutsumi, Izutsu, & Ito, 2015). Narrowing down to age and disability, the developmental period is associated with more issues in normal activities.

Worldwide, disability severity was projected to be 12% for employed aged adults and 39% among the elderly (Bourne, et al., 2017). The severity of sight amplified by 17.6% between 1990 and 2015 due to the inhabitant’s upsurge (38.4%), population ageing (34.6%) and decrease in age specific (36.7%). The severity of optical loss went high from 159.9 million to 216.6 million cases over the same period, signifying that the development of the world’s population is causing a significant upsurge in visual related disability (Bourne, et al., 2017). Worldwide, 15% of the adult population was deaf. About 25% of deaf individuals are over 66 years (WHO, 2017). The next paragraph will look at gender and disability.

Worldwide, females have more disability than males (Mitra & Sambamoorthi, 2014). Females were recognized to have severe incapacity such as sightlessness (56%), severe visual problems (55%) and minor visual difficulties (54%) (Boune, 2017). For other disabilities, a contrary to this trend was observed. For instance, extra men were affected by disabling hearing loss (56%) (WHO, 2017). According to African Child Policy Forum (2017), Africa has the largest population abled differently. For instance, a projected 7.5% of the entire population in South Africa has a disability, and in Tanzania, children with disabilities account for about 4.5% of the total child population. Having discussed on the general disability, it is essential to specifically look into deafness as one of the disabilities (ACPF, 2014).
Regardless of the onset age, hearing loss has overwhelming concerns for relational interaction, psychosocial welfare, value of life and economic freedom (Baguley, 2015). As per Olusanya, Neumann, and Saunders (2014), 42 million people (0.9%) of the world’s population were perceived to be deaf. The projected figure of persons with such loss had more than doubled to 120 million (2.1%) of the world’s population. This is comprising about 70 million adults and 8 million younger persons in emerging countries. In addition, in 2011, 360 million people had hearing loss out of which around 32 million were children below 15 years while 7.5 million were below 5 years (Carter, 2016).

According to WHO, hearing is one of the central senses in humans which distresses People’s lifetime. This sense, along with linguistic plays an important role in interpersonal communication with others. The severity of deaf children is more than 1.7% while up to 7% of adults suffer from it including 183 million males and 145 million females (WHO, 2017). In addition, hearing impairment can affect physical, mental health and social welfare of youth and might cause low self-esteem, irritability, isolation, dissatisfaction, depression, emotional and social complications (Movallali, Musavi, & Hakimi-Rad, 2018).

Hearing impairment refers to any level of loss of audible range from mild to profound that adversely affects hearing (Baguley, 2015). Hard of Hearing is when a person has significant hearing loss that calls for special adaptation (Gao, 2015). Deafness is a condition in which a person is impaired in processing language information through hearing with or without amplification, adversely affecting children (Archer & Zoller, 2018).

In regard to the increase of DHH, WHO (2018) suggested actions required to mitigate the rise of DHH persons. It was suggested that public health action aimed to deter
DHH through control of risk aspects and ensure that the needs of those who experience hearing loss can be addressed adequately. In addition, policy expansion to incorporate hearing care into health methods to initiate preventive actions and identify DHH early and intervene to mitigate its impact. Another action was to create awareness among policy makers and civil society on ear and hearing care. The next action was capacity building to address the gap in human beings through learning programmes and training of available care providers and lastly improving accessibility of hearing devices and technologies (WHO, 2018).

According to a recent report from World Health Organization (2019), almost 50% of persons aged 12-35, that is 1.1 billion young persons are at a threat of hearing impairment due to protracted and extreme disclosure to loud sound. This comprises the songs they listen to through personal audio devices. During the world hearing day in third Mach 2019, WHO and International Telecommunication Union issued a new international standard for the manufacturer and use of these devices which include smartphones and audio players to make them safer for listening. The new standards comprise; Sound allowance” function: This is a software that trails the level and period of the user’s exposure to sound as a percentage used for reference exposure. Secondly, individualized profile for an individualized listening profile, which is based on the user’s listening practices, which informs the user of how safe he or she has been listening and gives cues for action. The third standard was the volume limiting options to limit the volume, including automatic volume reduction and parental volume control. Lastly, general communication and regulation to users on safe listening practices, both over own audial devices and for other vacation activities (WHO, 2019).
In Africa, hearing loss is the most common sensual disability. It is a state that is of growing concern (Mulwafu, Kuper, & Ensink, 2016). In sub-Saharan Africa, more than 1.2 million children aged between 5 and 14 years suffer from moderate to severe hearing loss in both ears mainly due to infections, lack of hygiene and treatment (Mulwafu et al., 2016). The severity of hearing loss is highest in sub-Saharan Africa (Mulwafu et al., 2016). Apart from the estimated figure, 1.1 billion young adolescents aged between 12-35 years are vulnerable of hearing loss due to exposure to noise in fun settings. Notably, the number of hearing impaired people is increasing and it calls for stakeholders to put in measures and strategies on how DHH learner’s rights to education can be made attainable to balance the increased number of DHH learners globally (Hagen, 2016).

Kenya’s persons with disabilities bill was enacted in December 2003 (Kenya National Survey for Persons with Disabilities, 2008). The study used a two-stage clusters sampling design. Out of the 1800 clusters preserved by the KNBS, 600 clusters were selected; 436 were rural and 164 were urban. A logical random sample of 25 households per cluster was selected, resulting in a sample size of 15000 households. Effective interviews were conducted with 97% of the sampled households, while 96% of PWDs were interviewed. The main objective was to provide relevant information on persons abled differently.

In 2007, Kenya national survey for persons with disabilities (KNSPWD) approximated the number of PWDs, their circulation in the country, demographic, socio-economic and socio-cultural characteristics. The study also sought to define the kinds and causes of the disabilities, the difficulties faced and coping mechanisms. The study indicated that about 4.6% of the population in Kenya (1.7 million) Kenyans had various disabilities.
The survey covered more than 14000 households in a total of 600 clusters (436 rural and 164 urban). The survey revealed that the most forms of disabilities were visual (30%), and physical (30%, followed by hearing (12%) and mental (11%) (Kenya National Bureau of Statistics, 2007).

According to Kenya National Bureau of Statistics in 2009, about 3.5% of Kenya population was reported to have some form of disability. Moreover, visual which was at 24.9% and hearing impairment at 14.1% were the most common forms of disability (Kenya National Bureau of Statistics, 2009). In addition, DHH population face many challenges in Kenya. The major challenge is communication barrier. A study done in Central Kenya on communication difficulties faced by teachers of English language in primary schools (Mathew, 2014). The results revealed that 96.4% of the respondents found it difficult to teach English to DHH adolescents, while 63.3% of the English curriculum was not relevant to DHH adolescents. Further, it was discovered that teachers of English in schools for DHH adolescents face a lot of challenges in terms methods of communication used.

According to Mweri (2017), communication problems start at early age, and since most caregivers of the deaf are hearing, they have less knowledge of KSL, so they hide their deaf children, hence these caregivers never access sign language. Finally, it becomes problematic for the children to communicate their health, educational and other social needs. According to Ngugi, Kimotho, and Muturi (2018), deaf people in Kenya face communication barriers including inequality of information access in business. Mwiti and Ngugi (2018) also argued that communication difficulties affect DHH population in receiving value and reasonable mental health care in Kenya. The other challenges include social, cultural and economic challenges.
Notably, the human rights of DHH population are preserved both in global conventions as well as local Kenyan laws (Mweri, 2017). Mweri further proposes that the government of Kenya needs to address the challenges affecting deaf people through enormous awareness programmes to sensitize hearing people about deafness. Mweri also advocates for the practical inclusion of KSL in the health curriculum, noting that although it has been included in the education sector, it is more of theory than practical. Access to KSL is pertinent as language shapes thoughts, emotions and also determines a person’s perception of reality.

It has been observed that deaf persons turn to self-employment due to shortage of other chances in the job market. This is because of self-exclusion, absence of adequate monetary amenities, social economic susceptibility and prejudice against their capabilities to manage a business (Deaf Empowerment Society of Kenya, 2016). Further, the Deaf Empowerment Society of Kenya (DESK) reported that Kenya had 400,000 deaf youth of which, 89% were unemployed and 3% of deaf youth self-employed. Economically, there is need to look for ways to empower DHH adolescents.

Deaf and hard of hearing adolescents face specific barriers in their development (WHO, 2017). In this regard, Marschark (2014) revealed that psychosocial growth in DHH adolescents provided the field of deaf education with increasing knowledge of variables that play a role in how they think and behave. Moreover, studies on self-esteem, quality of life and psychosocial problems of DHH adolescents indicate that there are pertinent aspects that must be considered when executing educational curriculums for the deaf learners (Brice, 2016).
Concerning psychosocial development, Marschark et al. (2015) argued that early parent-child attachment, access to language, fluent and intellectual communicative interaction, independent of language modality, early varying contact with other DHH adolescents and adults are significant in dealing with challenges which affect learning and academic performance of DHH adolescents. Similarly, the societal reactions affect the way DHH adolescents perceive themselves making them think negatively about their lives, which in turn affects the way they behave (Aboge, Obondo, Kathuku, & Kibuule, 2015). These perceptions result to stressful life, causing withdrawal and resignation to a life of solitude, which leads to depression and poor academic performance of DHH adolescents (Naturale, 2014). In light of these challenges about deafness, stress settles in and interferes with concentration and attention which affect academic performance of DHH adolescents (Estrada, 2012). If DHH adolescents are socialized and perceived as abnormal and minority learners in the society, they internalize and act out as abnormal learners.

In addition, the consequences of labelling lead DHH adolescents to feel rejected and secluded (WRD, 2011). As a result, these affect their self-belief, self-esteem, hence they become emotional to an extent that they become irrational and develop maladaptive behavior which result to poor academic performance (Gent et al., 2012). According to DSM-5, depression is a common mental disorder that presents with blue mood, loss of attention and pleasure, diminished energy, feelings of self-blame or low self-worth, changes in sleep or appetite and reduced concentration (American Psychiatric Association, 2013). Depression is also a major contributor to the global burden of disease and affects people in all communities across the world. WHO, (2012) estimates indicated that depression had affected 350 million people. A survey by the World Mental Health Survey
in 17 countries found that on average, about 1 to 20 people reported having an episode of depression.

Depression is a significant public health problem in the United States, affecting approximately 12.5% of DHH adolescents (Bozzay et al., 2017). In the year 2007, the estimated number of people in the United Kingdom who were deaf or hard hearing impaired was 9 million and approximately 900 DHH people committed suicide yearly. Similarly, in the United States, DHH population was estimated to be around 20 million and approximately 2000 DHH people also committed suicide yearly (Turner, Windfuhr, & Kapur, 2007). According to Estrada (2012), Mexico had 498,640 DHH people who represented 12.1% of people with disabilities. Notably, deaf people had advanced stages of depression, longer depressive states and higher social vulnerability in Mexico.

Generally, deaf people fight everyday with humiliation, bias and communication breakdown (Brice & Strauss, 2016). These struggles are associated with despair and stressful negative life events. Additionally, they suffer from mental health problems double the rate of general population (Purse, 2018). Further, mental health concerns common in deaf community include depression, anxiety and severe illness such as bipolar disorder and schizophrenia. It is worth noting that between 15% and 26% of the population have some hearing loss. Furthermore, struggles to function in a hearing world can lead to mental health issues (Schilling, 2018).

In one of the study concerning DHH individuals, some 41% said they said that communication problems coupled with family stresses and overall prejudice could cause or contribute to suicidal depression (Purse, 2018). On the same, 54% found out that more than half of DHH individuals have not been able to access mental health services (Brown
Similarly, psychiatric conditions such as mood disorders were repeatedly under-diagnosed in DHH community due to communication problems; for example, there are few skilled interpreters of English to sign language, difficulties in translation between spoken and sign language and lastly differences in how deaf people exhibit feelings and perceive mental health (Purse, 2018). According to Kim et al. (2017), DHH was one of the common disorders with severity of 22.73\% in the general Korean population. In addition, 9.2\% of the Korean adults had moderate to profound hearing impairment. On the same, the contribution of DHH to depression was reported in the low and high income but not in the middle income population (Kim et al., 2017).

In Sub-Saharan Africa, the severity of hearing loss among children was 1.9\%, while in adults male and females it was 7.4\% and 5.5\% respectively (Jaiyeola & Adeyemo, 2018). Nigeria like many developing countries has sparse data on quality of life of DHH young people. A recent study in Nigeria indicated that 25\% of the 32 million children and adolescents with deafness worldwide live in Africa (Adeniyi, Omigbodun, & Adeosun, 2019). They also noted that DHH adolescents had significantly higher levels of mental health problems when compared with their hearing colleagues. The severe levels of mental health problems were associated with low educational attainment of DHH adolescents and their mothers (Adeniyi et al., 2019).

In Kenya, DHH are key populations with a high risk of exposure to depression. This is from a study done in Nyanza region Aboge et al. (2015) about severity of depressive symptoms among sensory and physically challenged persons living with HIV/ AIDS attending clinics in Nyanza Province. The same study revealed that in Kenya, 3.5\% of the population experience some form of disability, majority of who reside in the rural settings.
Having discussed depression and DHH population, it is important to now look at rational emotive behavior theory as an intervention measure.

Rational emotive behavior theory is the new form and one of the pillars of cognitive-behavior theories by Albert Ellis (David et al., 2008). Apart from being used as a theory, REBT is a sound psychological intervention. In REBT, illogical beliefs are considered dominant factors of emotional distress. Usually, the main focus is on changing irrational beliefs into rational beliefs with the aim of changing dysfunctional emotions and maladaptive behaviors into functional and adaptive ones (David et al., 2018).

A study conducted in 2014, revealed that REBT was an effective treatment for depression in women (Zhaleh, Zarbakhsh, & Faramarzi, 2014) and was generally accepted as an effective theory. Another study by Aler et al. (2016) examined the benefits of regular REBT sessions with a social worker for long-term depression. After a year, the respondents made less trips to their primary care doctor. It was also observed that the use of medications also reduced. David et al. (2018) reviewed 84 published articles on REBT and concluded that it is a valid treatment that can deal with depression, anxiety and disruptive behavior.

1.3 Statement of the Problem

Deaf and hard of hearing adolescents are affected by many factors including self-perception, familial attributes and academic challenges in which the learner is operating from. Consequently, the environment may lead to poor physical fitness and less developed motor skills of adolescents with hearing impairment. As a result, this may cause obesity and sedentary lifestyles which develop to irrational beliefs and affect their self-image. The self-esteem issues and irrational beliefs predispose the DHH adolescents to withdrawal and loneliness which can easily lead to suicidal thoughts.
Suicidal thoughts are maintained by multiple challenges such as speech and language delays, communication problems and less access to the sound dominated world. The situation is triggered by the developmental period and characterized by physical, cognitive, emotional and social changes, which bring about tumultuous emotions resulting in stress and inner conflict (Brice & Strauss, 2016). DHH adolescents are often faced with problems of managing these variations in the hearing world where communication and access to information about their worldview is inadequate. Moreover, these factors become more complex and they affect learner’s sense of worth making the DHH adolescent to be irrational with negative view of life. The negative view and the irrational thinking affect concentration and attention span of DHH adolescents causing a drop in academic performance.

It is unfortunate that some DHH adolescents and their caregivers live in denial and they even do not register their children on special cases (Bunning, 2017). This makes the DHH adolescents to struggle in their environments especially in class communication and self-expression. Consequently, this causes a lot of stigma, bullying and labelling of DHH adolescents that create a lot of anxiety and fear which affects their academic performance. In addition, the surrounding environment labels and stigmatizes them as special population and they are not given opportunities, which renders them helpless. Further, they are perceived as unable to logically reason, and argue their cases, so counseling them is not utilized. The main emphasis is on the hearing impairment disability and not the DHH as an individual. All these factors trigger stress levels which expose them to depression, making them vulnerable and consequently makes their interest in studies decrease. Therefore, the main gap this study focused on was DHH adolescents and separates the disability from
them through integrating REBT intervention to deal with their psychological issues, which cause depression and affect academic excellence.

1.4 Purpose of the Study

The purpose of this study was to test the effectiveness of rational emotive behavior theory in mitigating depression and enhance academic performance of DHH adolescents in selected primary schools in Nairobi County, Kenya.

1.5 Objectives of the Study

The following were the objectives of the study:

1.5.1 Broad objective

The broad objective of this study was to establish the effectiveness of REBT in mitigating depression and enhancing academic performance among deaf and hard of hearing adolescents.

1.5.2 Specific objectives

The specific objectives of this study were as follows:

1. Establish the severity of depression among DHH adolescents in selected public primary schools in Nairobi County.

2. Identify factors associated with depression and poor academic performance among DHH adolescents in selected public primary schools in Nairobi County.

3. Examine the relationship between depression and academic performance of DHH adolescents in the selected schools in Nairobi County.

4. Assess the efficacy of REBT in mitigating symptoms of depression to enhance academic performance of DHH adolescents.
1.6. Research Questions

1. What is the severity of depression among DHH adolescents in selected public primary schools in Nairobi County?

2. What factors lead to depression and poor academic performance among DHH adolescents in selected public primary schools in Nairobi County?

3. How is the relationship between depression and academic performance of DHH adolescents in the selected schools in Nairobi County?

4. What is the efficacy of REBT in reducing depression symptoms and enhancing academic performance of DHH adolescents?

1.7 Justification for the Study

The repetitive pattern of poor performance in Kenya Certificate of Primary Education (KCPE) in public schools for the deaf learners continues to pose challenges (Wanjiru, 2013). In general, DHH adolescents perform below average in KCPE exams where they score around 150 marks out of 500, with the pass mark being 250, while their hearing peer’s average is 300-430 marks. Kenya National Examination Council KNEC (2013) stated that when ranked with regular schools, deaf schools rank among the bottom five positions.

In Nairobi County, schools for the deaf have averaged a mean score of 150 marks in National examinations over the past 5 years (MoE, 2014). Notably, poor academic performance is attributed to irrational beliefs, communication breakdown, family issues, psychosocial challenges and rigid curriculum (Ilondanga et al., 2015). Resultantly, DHH adolescents are disadvantaged due to their condition, which poses challenges in communication, language acquisition and understanding of abstract concepts. These lead
DHH adolescents to develop negative attitude towards themselves, self-hate and self damnation. More still, little has been done in relation to depression and academic performance of DHH adolescents in Kenya. Studies on the field of psychology have rarely ventured into the world of the deaf from a psychological point of view which creates a big gap when it comes to the world of knowledge.

Comparatively, many studies have concentrated on special needs and focused on their caregivers. Less has been done on what goes on in them in terms of self-perception, thinking patterns, their beliefs, feelings, and emotions, which have been ignored. Equally, most research on mental health problems in DHH adolescents has utilized parents and not used a self-report from DHH adolescents. Moreover, REBT has not been used specifically to treat depression of DHH adolescents on a quasi-experimental study. This study therefore utilized REBT intervention in mitigating depression and enhancing academic performance in DHH adolescents. The study directly engaged DHH adolescents in collecting data.

Deaf and hard of hearing adolescents face challenges in accessing quality education, and experience challenges in communication both in school and at home. Further, they also have inter- and intrapersonal communication challenges which lower their self-esteem and maintain their loneliness. They get frustrated, which affects their concentration, attention and they despair in striving to put more energy on studies. As a result, most DHH adolescents finish class 8 but hardly continue to high school.

On the other hand, learning materials, are so limited; for example, schools do not have KSL story books, which help in language development (Maina, Kochung, & Oketch, 2014). Although we reach our world through our sensory organs, DHH adolescents struggle to hear and communicate to their world because the use of sign language is not understood.
by many. Therefore, these factors cause a lot of stress among DHH learners as they try to express themselves amidst the hearing world; they develop feelings of hopelessness when they realize they cannot fit in the society. As a result, the rationale of this study was to test the efficacy of using REBT in reducing depression and enhance academic performance of DHH adolescents. This reduced depression and improved academic performance. It was hoped that the study will provide knowledge that will help in reducing depression and improve academic performance of DHH adolescents.

1.8 Significance of the Study

This study had probable contributions. First, results would aid parents to gain knowledge on how to communicate and understand what their children are going through. The gained understanding would help the parents to be closer to their children and create a safe environment that is conducive for the DHH adolescent to express their feelings and emotions and increase secure attachment. In addition, the parents will gain knowledge on how to handle children and be good role models to their children. Secondly, the information will help teachers demystify hearing impairments and positively influence their attitudes towards deaf learners. Teachers will gain knowledge on how to help DHH adolescents increase their self-esteem through use of humor, positive feedback, and consistence affirmation. The findings will also enlighten the general public on the needs of DHH adolescents which is necessary in achieving good academic performance with less stress.

Moreover, the findings will help the public to gain insight and think on their approaches towards disabled people and in particular adolescents with DHH and later adapt to accept these people’s abilities in the society. The study findings will additionally inspire the governments through special education needs to offer financial support in schools to
sustain learning and improve academic performance. This will enable schools to facilitate the materials necessary for DHH adolescents, hence lessening the burden from parents.

Behavior modification among DHH adolescents will be achieved and learners will be more empowered on ways of disputing their irrational beliefs and managing life events positively. They will also be empowered to change their language and have a realistic philosophy of life. This will help them reduce the tendency for blaming self and accept who they are. Strategy creators will get understanding on ways to plan and strategize to employ counselors in school with an intent to dealing with specific issues that DHH adolescents present with, mitigating depressive symptoms and increasing academic performance. It will provide interventions on how to sensitize the deaf community’s needs and how best the curriculum can accommodate DHH adolescents’ needs. This study will make a big contribution in the world of knowledge, particularly in the field of psychology, where hearing impairment, depression in relation to academic performance has not been well associated with counseling as a remedy to deal with depressive issues.

1.9 Assumptions of the Study

The school administrators permitted the researcher to conduct research in their schools. The administrators and DHH learners would cooperate and made data collection effective. All questionnaires would be responded to and completed within the allocated time. All DHH adolescents would attend the therapy sessions and took it seriously. The other assumption was that lip reading would help in reinforcing effective communication.

1.10. Scope of the Study

The research was carried out at Aga Khan Primary School deaf unit and Joseph Kangethe Primary School, in Nairobi. Aga Khan is located in Parklands area directly
opposite Aga Khan Hospital, near High Ridge shopping center. This was the experimental
group. Joseph Kangethe is along Ngong Road, a few kilometers from Prestige Mall. The
above schools were chosen because they have many DHH learners compared to other schools
in Nairobi County. The participants in this study comprised deaf and hard of hearing learners
aged between 14-20 years. The age was deemed appropriate because DHH adolescents are
slow in conceptualizing concepts and making meaning out of it.

1.11 Limitations and Delimitations of the Study

The participants were unwilling to release information to the researcher. This
limitation was managed through the assurance of confidentiality and anonymity of the
respondents. Additionally, DHH adolescents with severe learning disorders were unable to
comprehend and understand the whole process and they were excluded. Excluding DHH with
severe learning disability and other related disorders was a challenge. This problem was dealt
with by the researcher working closely with class teachers who provided a list of deaf
children with severe learning disabilities and other related disorders.

Parents of DHH adolescents were unwilling to give additional information. This
challenge was dealt with by creating good rapport with the parents through the teachers. The
researcher also explained to them the importance of the study and how it would benefit both
the parents and DHH adolescents. The limitation on the possibility of communication
misunderstanding because of KSL variance was dealt with by encouraging lip reading.

1.12 Definition of Terms

Mitigation: The act of lessening the force or intensity of something unpleasant. The
action of reducing the severity, seriousness of something. (Benjamin, Brown, & Carlin,
In this study, mitigation meant to reduce depression which hinder learning of DHH learners.

Academic performance: The MacMillan dictionary defines academic performance as a multidimensional concept made of attitude, actions and skills that a learner has that lead to classroom academic excellence (MacMillan 1997). In KCPE, pass mark is 250. For this study it referred to DHH adolescent attaining a good grade of at least 200 marks. This was because of delayed milestones in deaf children.

Caregiver: A strong affection tie that children feel for important persons in their lives that make them feel pleasure when they relate with them and feel consoled by closeness in times of need (Brown, 2008). For this study, caregiver meant any adult regardless of the gender, taking care of a child including a parent, sponsor, or guardian.

Adolescent: Any person between ages 10 and 24 (WHO, 2018). For this study adolescent was any person between the ages of 14-20 years.

Hearing impairment: This is any loss of hearing resulting from slight to intense that adversely affects hearing (Baguley, 2015). In this study, it meant one with hearing loss from mild to profound that affected DHH’s academic performance.

Hard of hearing: It involves any person with significant hearing loss that calls for special adaptation (Gao, 2015) with or without use of KSL. In this study, hard of hearing referred to DHH adolescents with mild hearing loss, not able to hear well.

Deafness: This is a condition in which a juvenile is weakened in comprehending language information through the ear with or without intensification, undesirably affecting the child (Archer & Zoller, 2018). In this study, deafness denoted the permanent or partial loss of hearing which adversely affects the child’s normal ability to develop language.
Kenya sign language (KSL): Sign language is a patterned visual gestural system used by the deaf whose main aim is to communicate. For this study, KSL signified the main mode of communication by the deaf community and the registered language of instruction in the Kenyan education system.

Conductive deafness: Conductive deafness results from blockage of waves of sound from reaching the inner ear, from the pinna (Djalilian, 2016). For this study, it was used to explain more the causes of deafness.

Mental health: Thus refers to the way people reason, act and feel towards situations of life. It is how people perceive themselves, and the people they care about (Shin & Hwang, 2017). Through mental fitness we are able to control how we deal with pressure, live with others, evaluate choices and make decisions (Western Pennsylvania School for the Deaf, 2015). For this study, mental health denoted the way DHH adolescents think, feel and how they regard themselves in accordance to their academic performance.

Bilingualism: This refers to the ability to speak two languages fluently. According to Grosjean (2010, a perfect bilingual communicates in each language competently as native speaker. For this study, this was an approach in education of the deaf where two languages were simultaneously used for communication across the curriculum. It was used as a backup in literature of comparing English and KSL.

Post-lingual deafness: This refers to loss of hearing after development of language and speech normally after the age of five. They can be caused by genetic disorders, injury, medication, illness and birth complications (Petersen, Jorgensen, & Ovesen, 2015). Post lingual would be used to refer to those DHH adolescents who suddenly become deaf after being in a world of hearing in this study.
Pre-lingual deafness: It is the deafness occurring before development of speech and language. This kind of deafness already exists before the person can speak. (Mathew, 2014). For this study, it was used to refer to hearing impaired children who became deaf after birth.

1.13 Summary

This chapter has provided the study’s background, statement of the problem, objectives and purpose of the study, significance, research questions, rationale and scope of the study. It also discussed assumptions of the study, limitations and delimitations and definition of terms. Chapter two discusses literature review.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the introduction to the study and discusses theoretical and conceptual frameworks that informed and guided this study. General and empirical literature are reviewed, and a summary of the chapter given.

2.2 Theoretical Framework

The path a research takes is explained by the theoretical framework. The goal is to have meaningful study outcomes, tolerable to the hypothetical concepts in the research field and guarantee generality (Adom, Hussein, & Agyem, 2018). This study was guided by rational emotive behavior theory (REBT) by t Ellis and antecedent beliefs and consequences (ABC) model.

2.2.1 Rational emotive behavior theory

This theory was proposed by Albert Ellis, a New York based clinical psychologist in 1955. At 40 years, he developed diabetes, but he continuously refused to be depressed about it. In 1997, Ellis demonstrated himself as a role model for the disabled as he denied complaining about his hard times. Further, he itemized a lot of medical disorders and incapacities which he had to live with such as using hearing aids due of his hearing problem, blindness and diabetes. He compared his hearing aid as “pain in the ass’’ and he distasted his dietary limits and frequent blood checking because of diabetes. He however, valued his life and work. Therefore he resolved to use REBT to beat his tendency to little frustration tolerance and thereby accepting what he could not change (Windy & Michael, 2019).
In 1957, “rational psychotherapy and individual psychology” was published by Ellis in which he established the foundation of rational therapy. He then thought about psychological outcomes such as depressed mood and brought in the aspect of cognitive determinant, namely irrational beliefs. Though, cognitive determinant can be found in philosophy and medical approaches, Ellis did a scientific test and articulated cognitive revolution in psychology through his book, “reason and emotion in psychotherapy” (Cuijpers et al., 2010).

In 1961, Ellis realized that rational theory addressed mainly emotions and not behavior; consequently, he was compelled to change the name from rational theory to Rational Emotive Theory to cater for feelings which affect behavior (DiGiuseppe et al., 2013). Although rational emotive therapy used a range of behavioral skills, it was misrepresented by many scholars as being also logical and disregarding the behavioral practice. To spot-on the distortion, in 1963, Ellis altered RET into rational emotive behavior theory (REBT). After his death in 2007, REBT was openly and professionally promoted by Albert Ellis Institute. This was partly to address Albert Ellis’s aim and to well associate REBT to present CBT practice that REBT started.
2.2.2 ABC model

Rational emotive behavior therapies based on the main basic concept, which is activity of event, effect on belief and emotional consequences (ABC) model (Najafi & Lea-Baranovich, 2014). The ABC theory of personality and emotional trouble highlights the association concerning rational and feeling. According to Ellis, it’s not what occurs in point A which causes emotional disturbances or pain. Instead, individuals form their own conclusions and views at point B and strengthen them all through the use of undesirable and negative self-talk. It is this inner self-talk which then leads to expressive and behavioral responses which occur at point C. Further, at point D, therapists help clients to dispute their irrational thoughts or beliefs by detecting their irrational beliefs, debate against the irrational beliefs and finally help them discriminate irrational beliefs from rational ones. Consequently, when inappropriate beliefs are replaced with appropriate ones, people automatically experience a new feeling which leads to an effective way of living. The original ABC model of REBT has changed and is still developing from its original form (Banks, 2011).
According to the current REBT theory, an event such as people talk about me on psychological consequences is perceived and automatically activated. It affects one’s feelings, and behavioral, physiological reactions are mediated by information processing, cognitive and beliefs. This concept relates to this study in that the way DHH adolescents perceive themselves depends on the regard they put on themselves, which affects how they think and behave, thus affecting their interest towards academics.

Equally, the thinking pattern has negative consequences on DHH’s behavior which lead to withdrawal, loneliness, despair and depressed mood. Consequently, these affect their concentration span, reduced attention, loss of interest in academics and other areas of life previously enjoyed. This in turn affects their academic performance. If DHH adolescents see themselves as deaf and hard of hearing, they illogically tell themselves they are disabled. The psychological consequences are feeling sad, affecting behavior and seeing no sense of working hard in school. In the process, they interact with the environment, which affirms their negative beliefs and reinforces the irrational belief which gradually leads to depression.

Rational emotive behavior therapy is highly didactic, very directive and confronts faulty thinking (Aler et al., 2016). It is founded on the postulation that cognitions, emotions, and behaviors relate meaningfully and have a mutual source and result affiliation (DiGiuseppe et al., 2013). REBT’s simple theory is that feelings stem mainly from our dogmas, appraisals, explanations, and responses to life circumstances.

In light of rational emotive therapeutic procedure, users study abilities that give them gears to recognize and disagree with illogical views that have been learnt and upheld through self-propaganda. Ellis believed that irrational beliefs are due to demands we, other
people or the world in general put in ourselves. The main aim of REBT is to aid individuals modify irrational views and harmful thinking designs in order to overcome psychological problems and mental distress. REBT has been useful to areas other than psychological fitness (David et al., 2008). Additionally, REBT application in learning field has produced lucid emotive teaching. At work setting, REBT has resulted to lucid efficiency coaching and training, and to pastoral field, it has generated rational pastoral counselling.

In this study, REBT focused in helping DHH adolescents to change their illogical beliefs to rational ones, for example, I look good, I love myself, regardless of my hearing problem, and I would make it in life. It also helped DHH adolescents change their negative attitudes, and negative self-statements which lead to depression; for instance, am always a failure, I cannot do anything to improve my performance because I am deaf. This included working on their cognitions to change dysfunctional feelings such as ‘I feel motivated, I am not stressed but inspired to work hard’, maladaptive behaviors and unhealthy psychophysiological reactions to functional feelings, adaptive behaviors and health psychophysiological reactions in order to concentrate on their learning and perform better academically.
2.2.3 How REBT has been used in research

The efficacy of REBT has been verified in a number of studies (Najafi & Lea-Baranovich, 2014). However, little has been documented on DHH and REBT intervention. A study was conducted in India on the effect of rational emotive behavior theory on teenagers with conduct disorder. The sample size was 200 students made up of 100 females and 100 males, out of which 100 was taken as a control group (50 females and 50 males) after the schools and colleges in Mysore. The treatment was set on experimental group for 7 sittings in 7 weeks. There were 10 sets with 10 themes in each set. Significant effects were established on the decrease of conduct disorder signs practiced by themes. The findings discovered that the management reduced the signs of conduct disorder. In addition, the outcomes disclosed that REBT has a constructive impression on conduct disorder and
other expressive and interactive disorders comorbid with conduct disorder encountered by teenagers (Kumar, 2009).

Further, Davison (2001) argued that research supports the importance of REBT in lessening a wide range of anxiety, anger, and depression. The study further recommended use of REBT in a preventive way by teaching children that their self-worth is not utterly dependent on their endeavors. A study done in USA by Obembe (2012) confirmed that REBT helped clients to deal with their beliefs and attitudes, which lead to dysfunctional life.

2.2.4 Strengths and limitations of REBT

Rational emotive behavior theory is a powerful theory for treatment, mostly when used with medication treatment (Bennett, 2003). Furthermore, REBT works with persons and permits them to have a solid participation in treatment progression. In addition, due to REBT being a multi-functional treatment, it can be used to treating varied mental disorders, it can also be used for other issues such as attitudes, feelings and conducts which might cause severe psychological concerns (Ellis, 1994). Additionally, REBT can be used as a psycho-educational model (Bennett, 2003).

Rational emotive behavior theory has been advocated in treatment of a varied array of mental difficulties, specifically psychological well-being disorders, other disorders and problems counting but not restricted to; depression, posttraumatic stress disorder, compulsive behavior, eating syndromes, behavioral complications in children and adolescents, low self-esteem and academic performance problems (Kumar, 2009). The benefit of REBT is that clients learn to take accountability for how they feel, respond, and behave in response to situations and events. The advantage of REBT is that it is relatively
short-term treatment, 10-20 therapy session. Therapy process encourages clients to become self-reliant.

Findings of a study done in USA indicated that an effective mental health program should reinforce sensible philosophy and therefore reduce impassive uproar (Banks & Zionts, 2009). Further, learning requests of REBT with progress appropriate amendments can be real in deleting the illogical dogmas with children and adolescents in schoolrooms. This study suggests that the theory to be trained in an orderly way and be combined within educational background.

Another limitation is that, extreme mental disorders, such as schizophrenia and personality disorders which may end up in unproductive outcomes from REBT (Corey, 2009). Furthermore, the efficacy of the theory is reliant on the client’s obligation to the treatment and does not consider outer life events such as the client’s existing circumstances or relationship crowds as predictors of underlying issues. The other limitation is the issue of homework which if the clients are not willing to work on their problem it becomes difficult to help.

2.3 Severity of Depression among Deaf and Hard of Hearing Adolescents

More than one billion people are disabled (World Bank, 2011). This represents between 15.6% and 19.4% of the global population. An estimate of infant disability severity stands at 95 million (5.1%) of whom 13 million (0.7%) have severe disability (World Bank, 2011). According to American Community Survey, overall percentage of US people with disabilities in 2015 was 12.6%. The same report estimated 3.6% of the US population have hearing disability (Kraus, 2017). Similarly, United Nation’s report on disability and development indicated that people with disabilities were possible to be poor.
compared to people with no disabilities. This was because of societal obstacles such as judgement, restricted admission to learning, occupation, absence of addition in maintenance and other public programs (Guterres, 2018).

According to a recent report from WHO (2019), deaf and hard of hearing is one of the disabilities on the rise. WHO published a report on the trend of DHH between 1985 and 2011, the report indicated that in 1985, when the global population of DHH was first estimated, 42 million people, 0.9% of the world’s population had hearing impairment. By 1995, the projected figure of DHH were twice up to 120 million, 2.1% of the world’s population. This comprised about 70 million adults and 8 million young persons in evolving countries. In addition, 360 million people had severe hearing impairment in 2011. Around 32 million were below 15 years and of these, 7.5 million were below 5 years (Olusanya et al., 2014). The trend is worrying and is a call to action.

Conferring to Lipkin and Okamoto (2015), the effect of disability on public and mental status is undisputable. This is because disability apart from its limitations, has mental setback on people abled differently. The effects include emotional, social and psychological wellbeing, which are commonly termed as mental health (Karla, 2002). Worldwide people abled differently are identified as a set of susceptible persons (Estrada, 2012). In future, disability would be a big worry because its severity is on the increase. In addition, disabled population would have worse wellness consequences, reduced academic performance, fewer financial participants and increased rates of poverty than people without disabilities (Chan & Zoellick, 2011).

Hearing loss is a very common societal issue and it is the single largest contributor to the bulk of disabilities world over (Chan & Zoellick, 2011). It was graded number one
in the group of health situations linked with disability (World Bank, 2011). In Koran and US populations, hearing loss is among the greatest joint conditions with prevalence of 22.73% and 21.7% respectively (Kim et al., 2017). A study done in Korea revealed that 9.2% of Korean adults showed moderate-to-deep hearing loss. The same study indicated that hearing impairment contributed to depression (Jun et al., 2015). Hearing loss was associated to depressing signs freely of age, gender, degree of hearing impairment and social economic ranks. In addition, Kim et al. (2017) concluded that severe hearing loss amplified the danger of depression in overall population in Korea.

One of the most indispensable senses for human communication is hearing (Netten et al., 2015). Hearing loss at any phase of lifespan can affect the interaction progression and impact a person’s value of life (Baguley, 2015). Deafness in early child life can lead to delayed milestones like speech, language and cognition (Wong et al., 2017). These can in future lead to academic disadvantages, loneliness and eventually lead to depression (Hsu et al., 2016). Loss of hearing is associated with depression and other mental disorders as well as amplified threat for dementia (Kim et al., 2017).

A study done in UK by Shoham, Lewis, Favarato, and Cooper (2018) projected that 11 million persons in United Kingdom have substantial hearing impairment. Many of them go through attained deaf with onset in older age. A round 7 per 10,000 had pre-lingual hearing loss with onset before speech progress. In addition, the study noted that hearing loss can impair verbal communication, increase social exclusion, isolation and worsening current reasoning and practical damages. Hearing impairment can cause dependence on other people making them susceptible to rejection, discrimination or abuse thus increased depression vulnerability (Carlsson et al., 2015).
Subsequently, another study was done in UK, about mainstream education and deaf implications on their health, revealed that the frequency for medium, severe and deep deafness was 10.7 per 10,000 for three year olds and 20.5 per 10,000 for infants between 9-16 years (Berry, 2017). In addition, the study revealed that over 900,000 grownups in the Britain were categorized as severely deaf and more than 45,000 kids were categorized as deaf. It is worth mentioning that in 2011, 37,414 infants were branded as being deaf, showing a 10.3% upsurge in five years. Further, Berry (2017) discovered that, over 90% of the hearing impaired infants were born to caregivers who are not deaf with less knowledge on hearing impairment and how to interact with a deaf person causing more frustration and pain with detached emotions likely to lead into depression.

In Australia, about 12 infants per 10,000 live babies were born with a moderate, severe or profound deafness (Brown, 2015). In addition, 23 infants per 10,000 would attain deafness that needs hearing aids. According to a study by Brown (2015), around 90-95% of DHH were born to caregivers who are not deaf. Normally, there were major problems with parent child attachment and communication attunement. Likewise, DHH adolescents accessing education in schools and household settings was often constrained. Consequently, they displayed difficulties in their social world causing stress which leads to depression.

A comparative study was carried out in Iran by Notash and Elhamkia (2016) on a sample of 30 hearing impaired students. The results revealed that there was significant change amid moods of isolation, severe depression and worry among DHH adolescents and non-hearing impaired learners. In addition, DHH adolescents reported higher social and practical problems compared to their counterparts (Notash & Elhamkia, 2016).
A study of 140 groups each with 10 families from Tehran and Iran was done in Iran by Asghari et al. (2017). The households were sampled between 2012 and 2013. Results revealed that there was significant difference of DHH in Iran compared to other developing countries (Asghari et al., 2017). The level of DHH also expanded in both genders with the phase of life. However, 4.7% of youth were affected by other health issues due to the effects of adolescent stage on their social and psychological functioning which induced depressive symptoms (Bozzay et al., 2017). An assessment study was done in Egypt on psychological disorders in DHH by Sayed et al. (2018). The sample size was 40 DHH male with age series among 7 and 12 years, distributed into two groups. Results revealed that DHH is significantly linked with severe depression.

In Africa, Mulwafu et al. (2016) did a review on frequency and causes of deafness in Africa. The study embarked on scholarly search of 7 electronic files (PubMed, EMBASE, Global Health, Medline, Web of Knowledge, Africs Wide Information and Academic Search Complete) and literally investigated references excluded. The investigation was limited to residents-centered lessons on deafness in Africa. The study pointed out 232 articles and incorporated 28 articles in the last study. Results revealed that deaf infants may be more vulnerable in social and psychological issues which lead to severe depression. In old age, deafness can lead to embarassment, isolation, stigmatization, prejudgment, mistreatment, occupational stress, interpersonal relationship and eventually severe depression.

Another study in South Africa at Limpopo by Pullen (2015) on 357 households, revealed that there was severe hearing patology in the countryside setting in South Africa. Additionally, communication difficulties were discovered to have significant impact on
DHH individuals’ everyday life. These difficulties maintain the feelings of loneliness, isolation and frustration which gradually lead to severe depression (WHO, 2013).

Similarly, a study was conducted in Cape Town by Ramma and Sebothoma (2016). It was a transverse study study where 2494 respondents from 718 families were sampled. Four health sub districts were selected using random cluster sampling. Ear and hearing disorders survey were used to collect data. Results revealed that deafness was more than earlier projected on national population survey data. The study suggested that interventions for DHH in these populations ought to center on persons with related vulnerability which were likely to cause depression (Ramma & Sebothoma, 2016).

According to Hapunda-Chibanga (2016), the severity of DHH in Zambia was 12% comprising of conductive hearing impairment (87.8%) sensorineural hearing impairment (6.8%) and mixed hearing impairment (5.4%). The study revealed that DHH was more pronounced in male infants (13.8%) than female infants (9.3%). The study utilized cross sectional school based survey where 1277 teenagers between 6-13 years participated. It was noted that DHH in school children had severe depression. The depression was triggered by communication breakdown causing them to experience social and psychological stress which affected academic performance.

Comparatively, a report from Tailor (2016) indicated that Kenyan’s were more aggrieved by hearing loss. In addition, DHH had risen in the past two decades. Further, 63% of DHH incidents were in rural areas while 37% were in urban areas. In addition, the report indicated that there existed a big gap in the Kenya Certificate of Primary Education (KCPE) performance among deaf and their hearing counterparts. For instance, most DHH adolescents averagely scored as low as 100 marks out of 500 (Adoyo & Okutoyi, 2015).
The poor performance was largely attributed to social and psychological stress that they experience which led to reduced interest in studies.

According to DSM-5, depression is a familiar and severe medical disorder that depressingly influences the mood, thinking patterns and behavior of a person. In addition, depression leads to feelings of sorrow, and reduced focus in activities previously adored. It is the source of emotional and physical problems and can reduce individual’s ability to function normally (American Psychiatric Association, 2013). Depression is associated with hearing loss (Dawes et al., 2015).

According to World Health Organization (2012), depression is classified as a common mental disorder. Mostly, depressive syndromes start at an early age. They diminish individual’s activeness and are mostly repeated (World Federation for Mental Health, 2012). Moreover, depression symptoms are commonly linked with significant comorbid impairments that depressingly affect academic performance of deaf and hard of hearing (DHH) adolescents (Sommers, 2014). Worldwide, depressive disorder was categorized as the main contributor of non-fatal health loss. When it comes to hearing impairment, depression affects females more (5.1%) than males (3.6%). According to Lim et al. (2018), severity of depression was significantly higher in women (14.4%). It was also observed that the aggregate depression was 12.9%, where one year olds had severe depression (7.2%) and lifetime severe depression was 10.8% from 1994 to 2014.

Likewise, a study by Tambs, Kvam, and Loeb (2007) indicated females had severe depression than males. Additionally, another study found out that females had severe depression as compared to males at 16.9% and 14.7% respectively (Li et al., 2014). Similarly, a study conducted by Emond et al. (2015) found out that 31% females reported
severe depression when compared to their male counterparts who were at 14%. Several reasons could be inferred on why female tends to exhibit depression than their male counterparts. However, this is contrary to a study conducted by (Gomaa, Elmagd, Elbadry, & Kader, 2014) where males had severe to extreme depression (52.5%) more than females (46.7%). This notwithstanding, a study by (Hsu et al., 2016) discovered that relative risk of depression was equally spread on both genders. Additionally, conflicted results on a national cohort study by (Kim et al., 2017) revealed that severe depression was consistent in all ages and both genders.

A study by Li et al. (2014) noted that the association of deafness and severe depression is believed to be two-way. Further, the study revealed that hearing impairment affects public interaction and cognitive functioning thus causing loneliness. These effects of social isolation and cognitive functioning can facilitate negatively a health related impairment of quality of life (Joo, Han, & Park, 2015). In addition, emotive factors such as stress or severe depression could induce deafness (Jun et al., 2015).

In South Florida, a study was done on adolescent depression and differential symptom presentations in DHH youth (Bozzay et al., 2017). The study utilized a sample of 75 DHH and 75 hearing. Patient health questionnaire-9 was used to collect data. The study discovered that depression is a major health challenge on adolescents in USA disturbing around 12.5% of teens (Center for Behavioral Health Statistics and Quality, 2016). The study recommended that experts working with DHH adolescents ought to be aware of screening depression when DHH adolescents show somatic signs of depression.

Similarly, a study by Hapunda-Chibanga (2016) revealed that severe to moderate depression was 4.9% among DHH adolescents. However, this was contrary to a study
conducted and age was not a contributing factor of depression among DHH adolescents (Brown & Cornes, 2015). Additionally, a study by Rostami, Bahamani, Movallali, and Vahid (2014) reported that puberty was a really hard period of life when teenagers are highly worried and temperamental due to developmental changes that occur at this phase of life and sense of struggling with identity and self-image.

This development phase in an adolescents’ lives is likely to accelerate depressive symptoms. Likewise, Adigun (2017) supported by observing that 25% of adolescents investigated experienced severe depression. The study revealed that the severity of depression among DHH adolescents was high and it was triggered by major problems in communication that lead to social and psychological alienation in the family and at school.

In addition, another study, Rostami, Bahamani, Movallali, and Vahid (2014) investigated the severity of depression among 50 DHH teenagers in a deaf boarding school and 50 hearing adolescents using the revised BDI. The results revealed that among teenagers as a group, severe depression was higher (M=10.52) than hearing among respondents (M=6.59).

A study was conducted in Iran investigating the connection between depression and social support in deaf patients (Saki, Nikakhlagh, Derakhshandeh, & Esfahanian, 2015). The study revealed that around 90% of DHH were born in families with non-deaf parents. From the family’s perspective. The study was conducted among 114 randomly chosen deaf patients. Results by Saki et al. (2015) showed that severity of depression in DHH was high and has significant relation with social support.

A systematic review was done in Nigeria by Adigun (2017) about depression and individuals with deafness. Results revealed that deafness was significantly associated with
despair while the start and level of loss of hearing posed major associate of gloomy signs. The study concluded that there was severe depression among DHH which prompt hopeless feelings. It observed a deficiency of studies on depression and its related signs between the DHH in Nigeria and the Sub-Sahara Africa.

A study by Ndetei et al. (2008) tested students randomly gotten from a stratified sample of 34.7% from government high schools in Nairobi. The severity of anxiety and depression signs differed subject to gender, stage, and the weight of diversity of assessment tools used. Of the sampled students, 43.7% showed clinical diagnostic scores for depression. Severity of anxiety and depression among children and adolescents was high (Ndetei et al., 2008).

A study was conducted on depressive signs between sensual and disabled people living with HIV and AIDS in Nyanza (Aboge, Obondo, Kathuku, & Kibuule, 2015). It noted that 3.5% of the people go through some form of disability, majority of who live in the village. Nyanza has the highest DHH of 5.6%. The study used a descriptive cross-sectional design. Questionnaires and Beck’s depression inventory (BDI) were used to gather information and many of the respondents were female (62.7%). Results revealed that out of 236 individuals with disabilities living with HIV and AIDS (PWDLWA), more than a half (51.7%) had severe depression. Clinical depression was associated with low educational level and auditory impairment (Aboge et al., 2015).

An assessment study, on the association between anxiety, depression, and alcohol use disorders among the DHH in Nairobi (Anyango, 2018) was conducted. A cross sectional descriptive design was used and depression was measured using Beck Depression Inventory. The study sample size was 159 deaf adolescents from Dandora, Kayole, Soweto,
Mukuru, Kariobangi and Huruma. Out of 159 participants, 59.1% were female. In addition, 71% had severe hearing loss, while 35.2% of the respondents had clinical depression. The findings demonstrated that deaf in the study site suffer from anxiety, depression and alcohol use disorder. Factors associated with depression were communication barriers leading to feelings of isolation due to stigma.

2.4 Factors Associated with Depression and Poor Academic Performance

As stated by individuals with disabilities education act (IDEA), hearing loss is a state where a person is diminished in processing language received through hearing (Lipkin, 2015). The severity of deafness is assessed by the extent of sound that can be received with one’s better ear and this is assessed using decibels (dB) (Biggers, 2018). The severity is classified into four; minor hearing loss, this is where lowest sound that can be heard is between 26 and 40 dB (Tomblin, 2015). Moderate hearing loss where the minimum sound that can be heard is between 41 and 60 dB, severe hearing loss when the minimum sound that can be heard is between 61 and 80 dB and finally profound deafness in which the least sound heard is 81 dB and above (WHO, 2018). The following table illustrates the grade of impairment and their performance.

<table>
<thead>
<tr>
<th>Grade of Impairment</th>
<th>Audiometric ISO Value</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-No impairment</td>
<td>25dB</td>
<td>Very small hearing difficulties, hears low voice</td>
</tr>
<tr>
<td>1-Slight impairment</td>
<td>26-40 dB</td>
<td>Hear and recurrence words in common speech</td>
</tr>
<tr>
<td>2-Moderate impairment</td>
<td>41-60 dB</td>
<td>Hear and recurrence words spoken in raised voice</td>
</tr>
<tr>
<td>3-Severe impairment</td>
<td>61-80 dB</td>
<td>Hear and recurrence words when yelled</td>
</tr>
<tr>
<td>4-Profound impairment</td>
<td>81+dB</td>
<td>Incompetent to receive and comprehend even a yelled voice</td>
</tr>
</tbody>
</table>

Source: Author (2020)
According to Table 2.1, low grade of impairment leads to better hearing performance; consequently, high grade of impairment leads to hearing loss, hence very poor hearing. Just to point out, severe and profound impairment in most cases cause depression. The cause of deafness can be associated with inheritance (genetics), age, noisy environment, sicknesses and contagions, shock or strong medication and substances that are toxic to hearing alignments (Mcferran, 2015). As reported by Mcferran (2015), causes of conductive deafness are as follows; the pinna can be congenitally lacking or injured by strain or growth.

Sickness of the human pinna can lead to obvious hearing impairment (Tomblin, 2015). On the other hand, the external auditory meatus can be obstructed due to wax or an object or it can be inflamed due to infection or inflammation (Hernandez, 2016). The other cause is tympanic membrane which can be injured by trauma, such as a slap to the side of the head or by liquid coming from infection in the middle ear. These factors can cause holes or damages of the eardrum which decrease the amount of sound energy that is captured by the ear, thus affecting hearing process (Abes, 2016).

However, WHO (2018) estimated that 60% of hearing impairment occurring in children can be stopped through civic health approaches including vaccinations, healthier newborn upkeep, less environmental sound, and minimal use of strong medications. According to Chadha, Cieza, and Reyes (2018), untreated HI limits public assimilation, learning, occupation opportunities, affects emotive happiness and postures a financial encounter at both personal and general level. Moreover, untreated deafness is among the leading causes of sickness. It is rated fourteenth regarding disability attuned life years and second in years lived with disability worldwide (WHO, 2016). Also, unaddressed hearing
loss presented annual cost of $750 in 2015. Nearly 466 million persons live with hearing impairment. In addition, the number of people with hearing impairment is expected to rise in the coming decades (WHO, 2017).

According to WHO (2017), education is an undeniable right of every person. Similarly, Moreland, Atcherson, Zazove, and McKee (2015) argued that academic performance of DHH adolescents depends on the interplay of various factors. They include those that are basic to adolescents themselves, such as emotional and receptive verbal, hearing thresholds, language fluencies, means of communication, and information processing. Others include features of their household settings, for example, caregiver’s academic level and socioeconomic status. More experiences inside and outside school for instance, school engagement, having been reserved at one level for long affect their performance.

The right to education is stated worldwide and local legislative framework of several nations (Tsuladze, 2015). However, this right has not been real for all, particularly for persons abled differently (Narayan & John, 2017). It would have been better if the exact features about the people living with cerebral illness such as academic performance, their protection from abuse, exploitation and violence were addressed (Fellinger et al., 2015). Further, a noticeable program in building further all-encompassing societies began from mid-20th century, bringing together different countries around these concepts (United Nations, 2015). Equally, the human rights movement tried to ensure that all hearing impaired were authorized to become caring, competent and contributing citizens in the society (Oladottir, 2014).
Despite development promises in learning of DHH adolescents, their academic performance persists to lag behind that of their hearing ones (Berry, 2017). They may not get the information and services to unlock their talents (Hrastinski & Wilbur, 2016). Additionally, debates of poor performance focus on whether DHH adolescents are aided by regular schools with a wide range of learners (Marschark et al., 2015). Whatever, learning background and main encounter in teaching DHH adolescents is meeting their communication needs (Berry, 2017). Though, consideration about the most suitable engagement setting remains the dramatic movement of DHH adolescents in the United States from schools for the deaf to even be unquestionable (Carlsson et al., 2015).

Fifty years ago, 80% of deaf learners remained learning in special surroundings where teaching was normally presented via some form of signed communication. Today more than 85% spend all or part of the school day in regular schools (Hrastinski & Wilbur, 2016). In addition, more than 95% of DHH learners have speaking and hearing parents, thus, DHH learners access to spoken language is limited. This leads to communication breakdown right from the home environment. Moreover, most children enter school with substantial delays in phonological progress relative to hearing peers (Luft, 2016).

In America, Marschark et al. (2015) examined the relative importance of such characteristics and academic achievement in comprehension passage, mathematics, social studies and sciences. Statistics was attained for around 500 DHH adolescents who enrolled at regular schools or government special schools planned for DHH adolescents. Substantial undesirable forecasters of attainment varied by type of subtest. The findings had important repercussions for policy and practice in instructing DHH adolescents as well for understanding former research.
According to reports from Kenya National Bureau of Statistics (2017), Kenya is among the top 10 most depressed countries in Africa while in East Africa, Kenya ranks second with about 2 million cases of depression annually after Tanzania 2.1 million. The same report indicated that in 2016, Nairobi was leading in mental disorders with 99,840 outpatient hospital visits for mental disorders, an 8% increase over the previous year (KNBS, 2017). Out of the 99840 outpatients for mental disorders, 15223 check-ins happened in Nairobi, that had 4.5 million people. Most of mental illness visits occurred in Nairobi, followed by Muranga 5575, Nyeri 4881, Kiambu 4371 and Mombasa 3915. The least numbers of visits were observed in sparsely populated counties of Samburu and Isiolo each recording below 300 people (KNBS, 2017).

On the same, Aboge (2015) observed that more than half of people living with disability in Kenya suffer from severe depression. In addition, learning level and auditory loss are the threat factors for depression. Learning as a human right has been and remains one of the things that most states struggle to deliver for their inhabitants (Lansdown, 2011). Though, in this struggle, learning for adolescents abled differently in Kenya was not considered necessary till the end of 1950s when two special needs’ schools opened their doors in Mombasa and Nairobi as Agha Khan. The Kenyan government passed law in 1969 on special education which established public structure for disable teenagers (Oketch, 2009). Out of 38.7 million people, 800,000 have hearing impairment (Kenya National Bureau of Statistics, 2009). After the statistics, the government suddenly realized that people with hearing loss were on the rise and the schools were only two. There was need for the Ministry of Education to do a report on the increase of special children.
Another point is that countrywide, Kenya has a population of over 40 million people out of which about 900,000 are deaf and hard of hearing (WHO, 2018). Accommodating these big numbers with hearing impairment calls for cautious inspection of the education settings in order to make services reachable. The schools need to be available and open for accessibility to cater for all children with hearing impairment (Muinde, 2013). The total number of schools in Nairobi are 1626, out of which 1288 are primary schools and 338 secondary schools. There are 37 primary schools for the deaf in Kenya, 5 of which are in Nairobi County. Currently, Kenya has 6 secondary schools and 8 vocational schools catering for the deaf.

Because of limited high schools for the deaf, majority of learners drop out of school after primary level (Maingi-Lore, 2016). They are not capable to continue to high school and some end up doing occupational learning. Likewise, some who join high schools are not able to advance to higher learning since the higher bodies do not cater for the deaf (Mweri, 2016).

Two deaf people in Kenya have managed to do their master’s degree, with the help of their private interpreters whom they paid monthly alongside their school fees. As a result, the Kenya Society for the Deaf called on the government to increase the number of teachers posted to special schools (Omulo, 2018). This would help in accommodating and engaging DHH adolescents in school and avoiding negative beliefs of rejection about themselves (Anyango, 2018). The ratio of teachers to students in schools for the deaf is 1 to 24 against the recommended fraction of 1 to 12 (Kigotho, 2016). This is likely to affect the quality of education leading to poor academic performance, despair and stress on DHH adolescents.
Further, a report by Kinuthia (2017) stated that there were only 12000 hearing impaired children in 118 special schools from primary to tertiary level in Kenya. Further, deaf schools lack learning materials and hearing devices. In Kenya, Machakos secondary school for the deaf was the first one to use KSL (Kenyan National Association of the Deaf, 2015). Other secondary schools in Kenya that have joined Machakos are Kambui School, Kerugoya Deaf School, Ngala secondary school and Rev. Muhoro Secondary school for the deaf.

In Kenya, there is only one deaf person who has a doctorate degree after studying in USA (Ndurumo, 2018). A study done in Daystar University revealed that the challenges that DHH adolescents go through make them develop negative thinking patterns which lead to detachment from their caregivers (Wanjiku, 2013). This results into psychosocial setbacks in their lives which in turn lead to stress and affects their academic performance (Kodiango & Syomwene, 2016).

In addition, educational institutions in Kenya fight to ensure that they excel in examinations and appear on Kenyan educational map (Adoyo & Okutoyi, 2015). It is therefore, evident that most, if not all the hearing impaired learners are likely to get embarrassed after the national examination results are announced (Mwanyuma, 2016). Providing Kenya sign language (KSL) interpretation services in school would enable DHH learners learn effectively and excel in exams. Besides, the KSL acquisition would improve their interpersonal relationship, create more self-confident and self-belief to DHH adolescents (Ogutu, Kochung, Adoyo, & Matu, 2016).

Furthermore, the numbers of DHH adolescents continue going high and hence the need to make opportunities, conducive schools, and institutions accessible for them.
(Kinuthia, 2017). With the increase of DHH learners in Kenya, there has been increased challenges of accessing services, negative perception, inter and intra communication issues reinforced by irrational beliefs (Pwokah, 2016). All these cause a lot of psychological and emotional disturbances, making them vulnerable to depression and reduced learning achievement (Omulo, 2018).

Similarly, some teachers have little or no knowledge of KSL, which is the main way of engaging deaf learners (Mwiti & Ngugi, 2018). They lack linguistic approach to impart education to deaf learners who use sight while teachers use spoken mode of communication (Ogutu et al., 2016). Having introduced the general overview factors associated to academic performance of DHH adolescents, it is important to discuss exact aspects which lead to depression and poor academic performance.

2.4.1 Communication barriers

According to Gao (2015), DHH adolescents are at a great risk of exclusion and rejection from others due to limitations in communication that affects their understanding of themselves negatively. Notably, all families function well with language development interventions for their children. Moreover, deafness normally entails adapting the household’s usual relations and communication so that they are open to their DHH adolescent’s (Orth, 2018). Further, majority of these adolescent’s parents are hearing and are uninformed of the significant blocks to communicating with their DHH adolescents. Importantly, many initial language signs are neurologically determined, and occur irrespective of hearing state to include crying and startle responses (Luft, 2017). Due to these delayed milestones, DHH adolescents go into school missing eloquence in either
signed or oral language. Stakeholders always fight to design language sceneries to accommodate DHH adolescents (Knoors & Marschark, 2014).

Approximately 90% of DHH adolescents are born to hearing parents with least understanding of deafness and how to converse with a deaf person (Hall, Smith, Sutter, DeWindt, & Dye, 2018). DHH adolescent in hearing household can feel disregarded, lonely and be depressed if the family does not learn sign language. Further, Kushalnagar et al. (2017) revealed that difficulties in understanding basic communication with parents increased the odds of depression.

Majid and Rehman (2015) argued that lack of communication affects DHH adolescents’ development and makes them susceptible to mental, emotional, and, educational and threat to be mistreated which leads to depression. Brice and Strauss (2016) noted that caregivers and instructors who are not using sign language are limiting DHH adolescent’s growth, precipitating poor performance through communication breakdown. In addition, a study by Jaiyeola and Adeyemo (2018) found out that the majority of DHH adolescents had parents with typical hearing levels and about 80% of parents were unable to communicate, which created a gap for depression vulnerability and direct effect on their quality of life.

Still, Marschark et al. (2015) found that regarding communication in hearing families, fathers were the most vulnerable, because in approximate 50% of cases it was the mother who was signing while 50% of circumstances it was a sibling and hardly the father. In such cases, the mother befits the translator for the father, which distresses household interaction. Further, at household settings, it is not possible that each person would sign, leading the DHH adolescents embarrassed and frustrated in any attempt to communicate.
(Kushalnagar et al., 2017). Though, if everyone in the household is deaf, the DHH adolescent is likely to become part of a close knit, supportive deaf community where he or she would be appropriately socialized with increased interaction and protected from depression vulnerability (Guardino & Cannon, 2016).

According to McKee et al. (2015), communication challenges separate deaf American Sign Language users from social media, healthcare memos, and well-being communication. When these are tied with public sidelining, DHH adolescents are predisposed to high risk of depression and inadequate health literacy. A study in USA by McKee et al. (2015) on assessing health literacy in deaf American Sign Language users, a total of 405 respondents (166 DHH and 239 hearing) were registered in this research. A cross-sectional design was used. The results revealed that 48% percent of DHH respondents had poor well-being literacy and DHH persons were 6.9 times more than hearing partakers to have poor health literacy because of communication breakdown.

A similar study was done by Kushalnagar et al. (2017) on parent adolescent communication complications. A total of 143 DHH late adolescents and adults (64% male and 55% female) participated in the study. Results revealed that challenges in understanding simple interaction with parents increased the odds of depression. The study therefore suggested that more care should be set to supporting healthy communication between DHH girls and their mothers as well as DHH boys and their fathers. This might lessen the effect on future development of depression due to communication breakdown and increase their academic performance. This validates a study that found out that DHH adolescents who shared and interacted with their caregivers displayed better mental
flexibility and cognitive control as well as more creative thinking and problem solving skills extended to social and academic settings (Napoli et al., 2015).

Likewise, a study by Rosa and Angulo (2019) noted that 67.24% respondents who communicated by their fathers were helped to do homework. This reduced their depression and reinforced their academic performance. This is also in line with Duarte et al. (2016) who noted that caregivers helped DHH adolescents in doing homework and this increased their communication and academic performance at 22% (p=0.02). A contrary study by Akellot and Bangirana (2019) however noted that assisting DHH adolescents in doing homework was not associated with their academic performance (p=0.46).

Locally, DHH schools in Kenya poorly perform in national exams and when classified with other public schools. They are amongst the lowest with mean of 131 out of 500; examples are in 2012 KCPE; Kuja School for the deaf, Maseno School for the deaf and Mumias for the deaf achieved mean scores of 151,131 and 155 respectively and were categorized last in their own counties. It was noted that communication and information processing was the main contributor associated to poor performance (MOE, 2012).

A study done by Ayiela (2012) in Kenya in four counties; Kuja-Migori, Nyagweso-Homabay, Nyangoma-Siaya and Maseno-Kisumu, it employed ex-post facto research design and focused on special schoolteachers, headmasters and classes 7-8 pupils. Findings revealed that most teachers did not have enough fundamental communication approaches, thus it affected their teaching, which in turn affected learning outcome of DHH pupils. It was reported that in all four schools, teachers did not cover the curriculum content before DHH adolescents sat for KCPE.
The study recommended that KICD should review the curriculum and instructional materials. They should also organize sign language workshops and lesson presentations to enable teachers encourage DHH learners to learn and perform better academically. All these would also reduce the stress levels of DHH adolescents who struggle to communicate and grasp what other hearing teachers are teaching. The study also recommended that the DHH learners could be added more hours during exam period as their information processing is too low. The study also recommended that the Ministry of Education should conduct in-serve training on the use of instructional materials, format of teaching and communication approaches.

Similarly, Omutsani (2012) among schools in Nyanza on factors affecting performance of DHH learners in Kenya Certificate of Primary education examination. The sample size was 125 comprising 100 learners, 21 instructors and 4 head teachers who were purposely chosen. The tools used were surveys, interviews and observation check lists. Study findings indicated that DHH adolescents preferred that teachers use KSL when teaching to ease communication and reduce stress and frustration encountered. Additionally, the findings revealed that more than 50% of instructors were not well versed with KSL which was the main contributor of poor performance in KCPE as DHH adolescents were frustrated when answering questions.

A study by Rage (2014) investigated the repercussions of using KSL and English on academic performance of DHH adolescents at Kuja Secondary School in Kenya. A qualitative study design was used with a sample size of 16 DHH adolescents. The findings revealed that use of foreign languages on DHH learners contributed to struggles and frustration which led to poor academic performance. Results revealed that strategy makers
emphasized English as the national average of teaching and assessment. Similarly, Raga (2014) revealed that language differences among KSL and English reinforced a lot of stress and loneliness in interpersonal relationship.

The above studies show a gap where DHH adolescents struggle to communicate and in the process get stressed and despair. This may gradually lead to depression and affect their academic outcome. Similarly, Wanjiru (2014) noted that 60% of DHH adolescents whose caregivers communicated consistently involved in their learning portrayed significant benefits in their behaviors which reduced depressive symptoms and increased academic performance. In addition, 39% of DHH adolescents were assisted in doing homework by the parents and this improved their academic performance.

2.4.2 Individual’s self concept and perception

Deaf and hard of hearing population are unique with varied mental, social emotional changes and exhibitions. These are lonely groups with limited access to the hearing world (Crowe et al., 2016). DHH adolescents navigate difficult times in their lives when they are transitioning from childhood into adulthood and may find challenges coping with many physical, physiological and psychological difficulties (Harris, 2014). They often struggle with the self image and self perception (Korte, 2017). In addition, worries about how their peers and other significant people in their lives perceive them may exacerbate their issues leading to low self confidence and sometimes depression. This in turn affects their academic performance and produces a long lasting negative impact on their lives (Rhodes, 2017).

Adolescent stage is compounded with self-image issues. In addition, low self-esteem and self-image lead to psychosocial problems (Demehri, Movallali, & Ahmadi,
Self-esteem is important in the concept and perception of individuals with respect to their abilities and includes all aspects of cognitive, perceptual, and emotional development (Korte, 2018). Moreover, Kobosko et al. (2018) noted that DHH adolescents have a lower regard, especially in their social lives in relation to their counterparts. Social reaction, societal attitude toward DHH adolescents and different emotions such as compassion, pity and frequently blaming them perpetuate their social predicament (Acak & Kaya, 2016). These lead to frustration and disturbances in their mood and behavior, which contribute to low self-esteem, isolation and loneliness (Mousavi, Movallali, & Nare, 2017).

Basing this on a study in United Kingdom, DHH adolescents suffer from bad emotions and low personal-regard leading to general undesirable personal-view (Rhodes, 2015). The study used Stanford Achievement Test-10 to measure academic performance. Multiple regression, using step-wise data entry with a sample size of 28 DHH adolescents. Results revealed that negative self-perception affected academic performance of DHH adolescents. The study suggested that to help DHH adolescents would help them to value themselves and increase their interest in academic performance.

A study in India on academic and intellectual self-concept of DHH adolescents by (Kumari & Bhatt, 2014) noted that there is an agreement that DHH adolescents tend to have poor self-view. This is due to the struggle in processing details and the isolation from ordinary learning that they experience. The research sample size was 100 between ages 12 to 17 years. Results indicated that academic performance and self-concept was associated with intellectual self-concept of DHH adolescents. In addition, DHH males had better self-concept than the DHH females. It was suggested that counsellors should utilize strategies
which could enhance the development of favorable self-concept among DHH teens to reduce stress and increase academic performance.

Notably, Maurya and Singh (2016) investigated the relationship between self concept and academic achievement of DHH adolescents. The study revealed that poor academic performance was associated with low self concept. There was also poor mental health which was due to lack of expression and understanding of others towards themselves. This resulted in depression, anxiety and insecurity. The study suggested appropriate counseling with an aim to reinforce self concept and similarly their learning habits.

Another study done in Ethiopia on the self-concept of DHH and hearing students done by Mekonnen, Hannu, Elina, and Matti (2016) investigated self-concept of DHH adolescents in diverse learning environment matched with those of hearing adolescents. The sample size was 103 grade 4 learners nominated from 7 cities in Ethiopia. Findings revealed that DHH students had a lower self-concept which affected their interpersonal relationships. The study recommended appropriate counseling to integrate the self-concept and foster personal growth.

In Kenya, Pwokah (2016) did a study in Uasin Gishu on perceptions of DHH adolescents on teaching, learning and their academic performance. Results revealed that academic performance of DHH adolescents was low. Poor performance was associated with the negative self-degradation. In addition, the use of limited instructional material and the perception attached to them affected their self regard which in turn affected the learning process and academic outcome.
Another study was done in Kiambu by Wanjiru (2014) on parental attitudes and their socio-demographic effects on DHH adolescent’s self perception and academic performance. It was a case study with 65 parents of DHH adolescents. Results indicated that parent’s age, marital status and child’s birth order did not influence parent’s attitude towards DHH adolescent. However, parents’ level of education, occupation and the number of children parents had influenced the attitude and how they perceived their DHH adolescents. The same parental attitude affected DHH adolescent’s self esteem and confidence, which in turn affected their academic performance.

2.4.3 Abuse and bullying of DHH adolescents

Deaf and hard of hearing persons are more vulnerable to abuse than the hearing peers. The results of a study done in USA by Wakeland, Austen, and Rose (2018) on abuse in DHH population indicated that, the prevalence for all types of abuse were high within the DHH population compared to hearing population. In addition, all types of abuse had an impact on academic performance of DHH adolescents directly or indirectly (Wakeland, Austen, & Rose, 2018).

According to Humphries et al. (2016), DHH adolescents are exposed to physical abuse. It is hard for them to reveal corporal, sexy or expressive abuse because of worry of the perpetrator and being mistaken (Watson, 2014). The exposure to abuse affects their mental health status over time which gradually becomes depressive and likely to affect DHH academic performance (Archer & Zoller, 2018). In addition, London, Scheidell, Frueh, and Khan (2017) argued that sexual and corporal exploitation in early infant can cause serious mental health issues especially when adolescents cannot express their feelings to the authority figures. Moreover, Yvonne (2017) noted DHH adolescents
suffering from sexual abuse are more than the hearing people. The study stated cases of penetrative sexual exploitation being experienced by 40% of DHH adolescents (65% females and 35% males) by age sixteen.

Another form of physical abuse which affects academic performance of DHH adolescents is social bullying (Broekhof, Kouwenberg, Oosterveld, Frijns, & Rieffe, 2017). Some adolescents are vulnerable for social and academic risk factors like intimidation and conveying information (Archer & Zoller, 2018). Similarly, Terlecksi et al., (2020) noted that 77% of DHH adolescents reported being bullied because of communication difficulties and this affected their academic performance. The same study revealed that 43% of DHH adolescents found it hard to make new friends and did not feel confident to speak because of communication breakdown and this contributed to poor academic performance.

Additionally, from literature, DHH teenagers feel less accepted socially (Van Gent et al., 2012). Furthermore, there are few scholarships on mistreatment among DHH teenagers and this confirms more harassment on DHH teenagers (Pinguart & Pfeiffer, 2015). At the same time, DHH adolescents also show impairments in their emotion regulation and communication which has negative impact to academic performance of DHH adolescents (Broekhof et al., 2018).

2.4.4 Social identity and interactions

Usually, in the course of adolescence, gender, age, ethnicity, and hearing status affect the progress of social person and interaction (Dilshad, 2016). Notash and Elhamkia (2016) noted that DHH adolescents struggle to deal with social issues of hearing impairment in a hearing world. Notably, DHH pupils undergo negative encounter when interacting with their counterparts in mainstream schools. This is supported by, Kuenburg,
Fellinger, and Fellinger (2016) who argued that most DHH adolescents were not able to get mental fitness services and extended to maturity untreated resulting in severely social dysfunctional issues. Further, Wong et al. (2017) argued that poor interpersonal skills were related with mental issues which were as a result of social bullying and labeling.

A research was done in Pakistan to measure social emotional adjustment of DHH adolescents, at both primary and elementary levels (Dilshad, 2016). Social emotional Assessment Inventory was used to collect data from teachers of randomly selected 256 DHH adolescents. Findings discovered that there was moderate level of social emotional regulation among DHH youths. In addition, there was no major change in social expressive regulation of primary and elementary level in males and females. Noticeable change was witnessed in sub-scale emotional adjustment about male and female DHH adolescents.

On the contrary, Knight (2018) conducted a study in US on Social identity in hearing youth who have deaf caregivers. Results indicated that the Kodas were negative about hearing people and did not feel comfortable being identified with their deaf parents. This affected their social interaction and academic performance negatively.

A study was conducted on social demographic and academic achievement of DHH youths (Satapathy, 2008). The sample size was 80 DHH of both genders aged 13 to 21 mostly from the lower and middle socio-economic class. The outcome indicated that depression had a negative association with learning outcome of hearing adolescents while depression had a positive impact on the case of DHH adolescents. Additionally, social-emotional adjustment improved learning outcome of both groups. However, many socio-demographic factors such as number of siblings, financial status and age had a major association with learning outcome of DHH youths.
Similarly, Kisanga (2017) in Tanzania did a study concerning educational barrier of deaf learners and their management plans. Results revealed that communication barrier was a major problem to learners with HI. The study also revealed attitude blocks such as culture’s negative perception of DHH adolescents as ‘unable’, ‘load’ and ‘beggars’. This lead to social loneliness and problems in having and maintaining relationships. The study suggested that the government should review its national budget in educational sector to consider special counseling services for learners with special education needs.

2.4.5 Underachieving

The significance of early and complete access to speech of one’s surroundings cannot be overlooked when it comes to developmental milestones (Tseng, 2016). It helps in reducing the negative perception of self-hate, rejection and subtle denial which predisposes DHH adolescents to depression (Hsu et al., 2016). Attainment of principal speech maintains the change of perceptual representations that convert the base for more intellectual growth and rational thinking. The delayed milestones affect the family relationship which in turn influence academic achievement (Knoors & Marschark, 2014). In addition, emotional attunement is affected as well, which is key in secure attachment and enhancing good relationship and positive beliefs at the family level (Brown & Cornes, 2015). On the same, the family is the integral social support because hearing loss can create chronic stress that can lead to depression and academic underachievement. High level of social support can reduce irrational beliefs and alleviate depression and increase academic achievement (West, 2017).

In USA, Meinzen-Derr et al. (2019) did a study on language underperformance in young children who are deaf or hard-of-hearing using a sample size of 149 DHH.
Participants had a mean NVIQ in the average range of (95.4 (20.3)). Receptive language scores were significantly lower than their NVIQ by 10.6 (p<100) while 21.1% had receptive scores 100, <85 with 42% having a poor performance in language. Teenagers with poor language performance (n=61, 41.5%) were likely have more severe hearing loss levels, inferior status socially and economically and were mostly blacks. It was concluded that DHH adolescents continue to demonstrate language underperformance due to language deficits which affect their social functioning.

A study done in Kent State, Lowa City by Luft (2017) about effects of DHH adolescents and family values on depression and academic achievement. It pointed out that academic performance of the deaf learners is characterized by several distinctive values and beliefs, such as the language used at family level, caregiver being role model to DHH learners and their families (Luft, 2017). Further, Luft (2017) revealed that caregivers go to school visits, coach them life skills and cheer their DHH adolescents to work ha in school were other additional family values which had impact in their stress levels and academic performance.

Scarinci et al. (2018) argued that caregivers’ values and beliefs on language progress, life and social skills on the family promote positive deviation in school. This was reinforced by a study which affirmed that caregivers always discussed with their DHH adolescents on how to have a normal life that influenced their decisions and academic performance (Crowe et al., 2014). Similarly, Guardino and Cannon (2016) argued that household care and qualities contribute to DHH adolescents’ social and academic progress. Wong et al. (2017) on the contrary noted that DHH adolescents’ academic performance depends on other related factors such as other disabilities.
Another study conducted in Scotland revealed that one of the most serious problem is underachievement (Deaf Association Scotland, 2015). Underachievement was associated with not being fluent in a language by the time DHH adolescent begins schooling. This leads to other many learning challenges often mistaken as for DHH (Tollefson, 2013). The study also revealed that weak memory, behavioral and emotional issues, bad reading understanding and problems in comprehending other peoples’ viewpoints are related to bad performance (Wauters & De Klerk, 2014).

In Croatia, Hrastinski and Wilbur (2016) carried out a research on education performance of deaf and hard-of-hearing students in an ASL program sampling 85 DHH teenagers. They compared two different subgroups in ASL proficiency. The findings reveal that DHH teenagers with high ASL proficiency outperformed their less proficient peers in national reading comprehension metrics in English and mathematics. Similarly, a study done in Australia indicated that language used at home was a significant predictor of depression among mental health problems (Brown & Cornes, 2015). In South Africa, Skrebneva (2015) conducted a study on guidelines to curriculum adaptations to support deaf learners in inclusive secondary schools. The findings of the study were supported by literature review to formulate practical guidelines for assisting educators to accommodate the language used both at home and school in order to support DHH adolescents.

Similarly, in Zimbabwe, Mashawi (2016) conducted a study to determine syllabus for earing challenged children as a benchmark of getting to secondary schools. The research revealed that teachers had problems in curriculum interpretation using sign language. Also, teachers failed to finish the syllabus since they focused a lot on practical
subjects to the detriment of academic units. The study recommended that sign language be included in the syllabus supplement other syllabus content.

Moreover, Kodiango and Syomwene (2016) did a study on Challenges faced by DHH adolescents in composition writing and in answering comprehension question in English language skills. It was done in selected schools in Homa Bay County in Kenya. The study established that DHH adolescents face challenges in composition writing and answering comprehension questions in English language lessons. The study further discovered that DHH take a lot of time in trying to comprehend what to write causing them to be frustrated as they are timed up.

Furthermore, Musonda and Phiri (2017) investigated emerging factors affecting academic performance of DHH adolescents at grade twelve examinational level. The results indicated that teachers of DHH learners had limited skills and inappropriate language thereby leading to poor performance of DHH learners in final examination. DHH learners were also reported to have difficulties in understanding comprehension and writing skills. In addition, the study revealed that curriculum offered to DHH learners in most schools was unsuitable for them in the sense that it was too bulky. The study recommended that teachers handling DHH learners should use a variety of instructions both in teaching and assessing DHH adolescents to meet their varied necessities (Musonda & Phiri, 2017).

In Kenya, an education report on special needs education through the Government of Kenya (2009) revealed that special education in Kenya can be mapped out to early 1940. Special schools for the physically challenged began during around this time. Schools such as Aga Khan in Nairobi and Mombasa opened doors in the late 1950s. In 1960, Nyang’oma School was started while Mumias Primary School for the deaf began operations in 1961.
(Kajirwa, 2009). During this time, many schools for the deaf used the ‘oral ‘way to teach, concentrating on communication, interpretation and hearing support to alleviate hearing loss (Mathew, 2014).

Kenya implemented free primary education in 2003. Learning was and is still known as a basic right for pupils including students abled differently (Muhombe, Rop, Ogola, & Wesonga, 2015). Caregivers who were economically unable to take their children to primary school were then required to do so. The policy increased the enrolment of learners into the government schools across Kenya, including those abled differently (Ilondanga, Adongo, Othuon, & Simatwa, 2015). In addition, enrolment of DHH adolescents to deaf units in regular schools increased. Beneath the free primary education program, the government did not build new classrooms nor guarantee that the number of teachers allocated to schools matched the increased number of learners (Musyoka, Gentry, & Bartlett, 2016).

Majority of Kenya’s’ DHH adolescents enter school later than their hearing counterparts (Mweri, 2014). They take long in school than hearing pupils who attend preschool before they enter school. Mwanyuma (2016) attributed a pattern in Kenya where the age range in a class widens from standard 3 onwards partially to repetition. While standard 8 pupils were between ages 12 and 21 years. Further, DHH pupils in Kenya finish primary school when they are much older due to late entry (Tumo, 2017). Even worse, DHH learners complete standard 8 but they hardly continue to the next level because of there being few secondary schools for the deaf in Kenya. Ndurumo who is deaf and third in Africa to have a doctorate degree, argued that DHH learners face a lot of challenges which make them not go past standard 8. He further said that the major reasons are
difficulties in communication, learning and evaluation where DHH learners compete with the hearing counterparts in KCPE within the given time and end up scoring extremely low marks (Ndurumo, 2018).

In Nairobi, Kigotho conducted a study on barriers which hinder academic achievement of DHH adolescents in inclusive learning environment (Kigotho, 2016). It was a cross-sectional descriptive study using a sample size of 10 DHH youths. The findings revealed that the mode of instruction used by teachers, framing of examination questions, poor lighting noisy classroom environment and challenges in socially integrating with the hearing, loneliness and isolation triggered underachievement of DHH adolescents. The study recommended counseling in schools to create awareness and accept uniqueness in order to accommodate DHH learners and also reduce negative attitudes and perceptions. Teachers should encourage class participation and give extra time during examinations.

2.4.6 Risky behavior

Despite much of the deaf literature being based in the USA, less is known of the economically less developed countries (Bozzay et al., 2017). Research into the deaf community is essential in identifying methods of reducing the risk of mental health problems arising from an issue that is under-researched by psychologists (Hsu et al., 2016). In addition, Kunnen (2014) noted that deaf children have long been considered a population at risk of difficulties in developing social competence because of the negative effects of hearing loss on language and communication development.

de Laat, Van Deelen, and Wiefferink (2016) argued that earlier hearing screening is crucial to detecting any anomaly. Further, Yvonne (2017) noted that in most Western countries, childhood hearing screening at 5 years of age is performed by the school medical
officer through a screening audiogram of both ears. Research shows that in the period between hearing screening on newborns and the fifth year of life, the number of children with significant sensorineural hearing loss doubles to about 0.5%-1.0% of all children (de Laat et al., 2016).

Awareness of the risks of loud noises and hearing protection is paramount (Herrera, et al., 2016). Hearing damage due to exposure to loud noises can be prevented by the use of hearing protection (Mohammadpoorasl, Hajizadeh, Marin, Heidari, & Ghalenoee, 2018). Additionally, Feder et al. (2017) argued that increasing the distance to the sound source and decreasing the volume of music helps in reducing hearing loss. Further, de Laat et al. (2016) recommended that it is necessary that adolescents are well informed about risks related to exposure to loud noises and equipped with skills to limit or avoid these risks. In addition, the risk of hearing damage, including tinnitus, is greater in adolescents through exposure to loud music and use of earphones, a tendency that seems to be increasing (Gonzalez-Gonzalez, 2018). In the United States, 7%-16% of young people between 12-19 years report often hearing a whistle or beep in the ear (Gehret, Trussell, & Michel, 2017).

A similar study was done in Pakistan by Zia et al. (2016). It was on earphone usage and recreational noise as a precursor for hearing loss. The study was conducted at Dow International Medical college. All final year DHH students were invited for the survey. Data was collected regarding the duration and hours of use of personal music players. This was to detect the degree of the change in hearing threshold, so audiograms assessment was done on 56 participants from high risk group. Results revealed that majority of earphone users are young adolescents. The audiogram showed mild hearing loss in frequencies over
0.5-8 khz. The study concluded that there was mild hearing loss in the high risk group. Therefore adequate counseling was needed to improve on good study skills to improve academic performance and reduce earphone habits. This study would use REBT to mitigate the adolescent listening habits for the hard of hearing adolescents.

2.5 Relationship between Depression and Academic Performance of DHH Adolescents

Available data indicate that deaf adolescents are more vulnerable to mental health problems than their hearing counterparts (Fellinger et al., 2015). For example, overall rates of mental health problems have been documented to range between 19% and 77% in this group. These rates are higher than those found among youth in the general population (Stancliffe, Ticha, Larson, Hewitt, & Nord, 2015). According to Ohre, Volden, Falkum, and Tetzchner (2016), DHH adolescents were found to be two to four times more likely than hearing youth to exhibit internalizing problems which mostly affect their academic performance including depressive symptomatology. Another study documented that approximately 26% of DHH adolescents met criteria for a clinical diagnosis interview delivered from the Diagnostic Interview Schedule for Children (Fellinger et al., 2015). Further, it was noted that DHH adolescents who met the criteria had poor academic performance due to diminished concentration and loss of interest in learning.

Deafness is defined as the heterogeneous condition with far-reaching effects on social, emotional and cognitive development (Bate et al., 2017). According to DSM-5, depressive disorder for adolescent includes major depressive disorder, dysthymic disorder, cyclothymic disorder, bipolar disorder I and II and mood disorder (American Psychiatric Association, 2013). Depression has serious consequences on DHH adolescents (Berry, 2017). It results in disruption of social, familial functioning and poor school performance.
Depressive symptoms in DHH adolescents may stem from a wide variety of situations that involve social interactions, rejection and isolation. However, in some cases, depression can be caused by an associated hearing loss (Adigun, 2017). It is worthy noting that distress symptoms among DHH adolescents are not different from symptoms experienced by hearing individuals. For instance, Hsu et al. (2016), while investigating the psychological distress dimension of the hearing impaired subjects, reported that they were more prone to depression, anxiety, interpersonal sensitivity and hostility than subjects with no hearing problem.

In Australia, Brown and Cornes (2015) investigated mental health problems of 89 DHH adolescents. Students were educated in a range of learning settings, had varying degrees of hearing loss and used a range of communication modes. Results revealed that overall, DHH adolescents reported levels of stress and mental health problems compared with hearing peers. The comprehensive disorders were three times more likely to be reported while the slight disorders were between 2 and 7 times more. Analysis indicated that communication used at home was a significant predictor of depression out of mental health problems (Brown & Cornes, 2015).

In addition, communication breakdown may make it difficult for DHH adolescents to participate properly in class which can lead to exclusion (Brice & Strauss, 2016). A study conducted by Marschark, Shaver, Nagle and Newman (2015) indicated that communication affected academic achievement in comprehension passage, maths, social studies and science at 13%, 13%, 13% and 15% respectively.

In Iran, a study by Rostami et al. (2014) investigated depression among the DHH adolescents where 11 articles were retrieved, and 8 of them indicated a higher degree of
depression amongst DHH adolescents in comparison with hearing ones. The remaining 3 articles showed no difference between 2 groups. Notably, mild levels of depressive symptoms were common in DHH adolescents than hearing adolescents.

Similarly, Notash and Elhamkia (2016) did a study in Iran to compare the feelings of loneliness, depression and stress in DHH adolescents and hearing adolescents. The sample size was 60 (30 DHH and 30 hearings adolescents). Results indicated that there was a significant difference between feelings of loneliness, depression and stress between DHH adolescents and hearing adolescents studying at Tabriz school (p<0.01). In addition, their mental health was reported to be lower. Moreover, DHH adolescents reported severe depression, social and practical problems compared with their hearing peers.

As stated by Carlsson et al. (2015), persons who get depression in teenage are at a risk of feeling a number of negative effects in academic performance which in adulthood causes a lot of stress when it comes to job opportunities. Baguley (2015) recommended early screening measures for assessing depression in adolescents as a key remedy.

In India, Prabhu (2016) conducted a study to determine the severity of stress, anxiety, and depression using Depression Anxiety Stress Scales in adolescents and young adults with auditory neuropathy spectrum disorder. Depression Anxiety Stress Scales was administered to 20 individuals with auditory neuropathy spectrum disorder. The findings revealed that individuals with auditory neuropathy spectrum disorder had a moderate degree of depression and anxiety. In addition, symptoms were more in females than in males.

A study in Nigeria by Ameye et al. (2015), a cohort study of 50 DHH adolescents attending special school (36 males and 14 females) indicated that all participants had severe
depression. Adverse psychosocial consequences were found in this study population. It showed that social isolation was a major source of worry for 70% of the respondents and close to 40% admitted to being angry mainly because of societal attitude towards DHH adolescents. Underachievement was found to be 44%. The study concluded that DHH adolescents are faced with economic and psychosocial adverse consequences which are the main causes of depression and academic underperformance.

Accordingly, Awori, Mugo, Orodho, and Karugu (2010) did a study in Kenya on the relationship between self-esteem and academic achievement of DHH adolescents in selected secondary schools. The sample size was 53 DHH girls. Findings indicated that low performance was associated with irrational beliefs which emanated from family factors such as socio-economic status where girls were forced to report late because of school fees and other learning materials. In addition, DHH girls were not catered for adequately as personal effects were disregarded. The study recommended counseling strategies to reduce irrational beliefs and improve academic performance.

2.6 Efficacy of Using REBT in Reducing Depression Symptoms

In preparing children to deal with life challenges, it is important that schools devote attention to well organized and theoretically sound programs employing a preventive approach to mental health (Banks, 2011). Use of REBT integrates modifications of thinking patterns, feelings and behaviors. It is a cognitive-emotive-behavioral system of therapy, based on the assumption that emotional problems result from irrational beliefs and illogical thinking about an event rather than from the event itself. REBT is a mental health and an educational intervention. It attempts to teach students how to help themselves by providing a structured method of processing extreme emotions (Turner, 2016).
The underlying premise of REBT is that irrational beliefs which are often learned in childhood affect how a person processes the thought process, which affects one’s feelings and behavior. For this study, REBT was used to mitigate depression and also deal with the core beliefs, and irrational beliefs of DHH adolescents to accept who they are. This helped them to dispute the irrational beliefs, thus reduced depression and enhanced academic performance.

A study done in Boston by Gregas (2006) indicated that REBT had the potential to positively impact deaf learners particularly those in multicultural settings who face barriers of stereotyping and discrimination. Consequently, REBT was found to be a valuable tool for multicultural learners especially those with hearing problems. This is because it recognizes and respects the power within an individual to positively influence learning and future life. The article explained how teachers and counselors can utilize REBT strategies to empower DHH adolescents to excel in academics. As part of information, Banks (2009) reviewed an article on REBT use among children and adolescents who have emotional and behavioral disorders in educational settings in Ohio. The article discussed the need for a comprehensive intervention strategy for learners who experience difficulty managing self-defeating emotions and behaviors in school. The review results indicated that application of REBT had a comprehensive intervention on academic improvement.

Another study was done by David et al. (2018) in USA. The aim of the study was to review REBT articles to summarize the effectiveness and efficacy of REBT since it begun and investigate the alleged mechanisms of change. Systematic search identified 84 articles, out of which 68 provided data for between-group analyses and 39 for within-group analyses. Results indicated medium effect size of REBT compared to other interventions.
on outcomes and irrational beliefs at posttest. For the within-groups analyses, it was found that medium effects for both outcomes were archived, and irrational beliefs were minimized. The study concluded that REBT is a psychological intervention in many fields including educational settings for special learners.

Similarly, Wood, Barker, Turner and Sheffield (2018) conducted a study in USA to examine the effects of rational emotive behavior theory on performance outcomes in elite Paralympic deaf athletes. It aimed to study the direct and maintain the results of REBT on physical, mental and performance outcomes of Paralympic athletes. A case research design was used, and eight athletes recruited from a special school. They received five, one on one REBT sessions. Procedures of illogical views were collected once a week, whereas the remaining mental and physical events were collected at a pre-post and a 9-month follow up time point.

Consequently, the analyzed data indicated reduction in irrational beliefs coupled with reductions in systolic blood pressure indicative of adaptive physiological response. Athletic performance improved during competition simulations and reduced avoidance. Also, social validation data indicated greater self-awareness and improved emotional control. From this study, the researcher adds that the efficacy of REBT not only facilitates psychological health but enhances extra curriculum activities.

In regard to McCrone (2004), DHH adolescents have been victims of bullying by hearing students. The study used a sample of 3 cases of DHH adolescents who were bullied in school with their hearing peers. Consequently, in 3 cases, their academic performance was negatively affected. The first case was about a 11 year DHH boy with mild cerebral palsy who was sexually abused as he was trying to use the dormitory shower. The second
case was a 16 year old DHH girl with a cochlear implant. She was bullied on the school bus and through online messaging about her weight, braces and sign language. This affected her adversely and she went into depression.

The last case was an artistic 15 year old DHH boy. He used to walk with a knife in school because of the kind of bullying he was undergoing. He developed aggressive tendencies which lead him to a lonely life. The school therapist used REBT to gain insight and was able to identify their irrational thinking which affected their feelings and behavior and in turn influenced their academic performance. McCrone (2004) confirmed that the whole school was helped by the therapist through REBT to deal with bullying in school.

Zhaleh et al. (2014) did a study in Iran and noted that depression influences the individual’s thought, feelings, behaviour and health. The study examined the effectiveness of REBT on adolescent girls’ depression. Experimental design with a Sample size of 30 females who scored 20 or above in the Child Depression Inventory Questionnaire was used. The respondents were divided randomly in 2 groups of 15 subjects, experimental and control groups. The experimental group participated on a weekly basis in 10 sessions of 50 minutes receiving REBT trainings. Findings obtained showed the effectiveness of REBT on the decrease of depression scores at the post-test stage. Therefore, results concluded that REBT was effective on reduction of depression in female adolescents.

Correspondingly, Ugwu (2018) noted that application of REBT has been reported to be a good strategy in reducing negative emotions which in turn helped to increase children’s behavior and learning (Ugwu, 2018). A majority of the parents had a negative attitude towards their children’s mental retardation. In addition, 92% of the parents agreed that mentally retarded children were considered a burden to them. However, parents were
counselled. The findings reported that REBT helped the parents to overcome their emotional and negative attitude to their children with disabilities.

Similarly, Onuigbo et al. (2018) did a study in Nigeria to examine the impact of REBT intervention on stress levels and irrational beliefs among special education teachers in elementary schools. The sample size was 86 divided in 43 experimental group and 43 control group. Participants were treated in 12 weeks and a followup program was done for 2 weeks. Results from the study showed that experimental group experienced a significant mean decline in stress levels and their beliefs shifted to rational ones. Consequently, it was concluded that REBT was an effective therapeutic modality that can be applied by REBT clinicians for the management of stress. In Kenya, REBT has been used in other areas but not with DHH adolescents. That informs why the researcher was interested in using REBT which effectively reduced depression and enhanced academic performance among the DHH adolescents.

2.7 Conceptual Framework

A conceptual framework identifies the association of assumptions, concepts, anticipations, beliefs or theories that support a study. The conceptual framework for this study shows the relationship between the independent and dependent variables.
Figure 2.3: Conceptual Framework

Source: Author (2020)

2.8 Discussion

According to the conceptual framework above, the independent variable is rational emotive behavior theory. The independent variable through systematic structured sessions was used as an intervention to identify the belief system of DHH adolescents such as irrational beliefs, negative perception, stigma and dogmatic language which cause depression and mitigate them with an intention to influence the dependent variable positively. Expected outcome was reduced depression symptoms and improved academic grades. In addition, there were confounder’s variables such as Government policies, social support and individualized tuition. However, the confounders were controlled to avoid any association between the exposure hence REBT and the outcome. This was to prevent the distortion of results.
Similarly, effect modifiers were overlooked as they affect the outcome of the study. They included, adolescent’s age, social economic status and gender, severity of mental disorder, and Gender. Illiteracy amongst some parents is a great challenge that discourages them from assisting their children in homework. Stigmatization is a major factor affecting most people with disabilities. Some parents live in denial and are ashamed even to associate themselves with their DHH adolescents, so in the process they ignore to learn KSL effecting communication and parental warmth which affect their academic performance. There is minimal interaction and therefore understanding their needs becomes a problem.

2.9 Summary

This chapter presented the introduction to the study and discussed the theoretical and conceptual frameworks that would inform and guide this study. It also reviewed the general and empirical literature and presented the discussion and summary of the chapter. The next chapter will discuss research methodology.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents description of study design which was used in the study. It defines methods of data collection, target population, sample size, sampling procedure, and selection of data collection instruments. Methods of data collection including pretesting, methods of data analysis and ethical considerations are also discussed.

3.2 Research Design

A research design is a blueprint of action that guides the researcher in the entire process of data collection and analysis in agreement with research objectives and research questions (Creswell, 2014). It describes the procedure used by the researcher in the selection of respondents, data collection, data analysis and how to report the findings (British Educational Research Association (BERA), 2013). In social science research, finding evidence relevant to a research problem entails identifying the kind of evidence required to test a theory, to appraise a program, or to correctly describe a phenomenon (Labaree, 2016). Research design explains how research was carried out (Obwatho, 2014). Further, Kothari (2013) argues that research design is a well-thought plan for collecting and analyzing data to provide information sought.

This study adopted quasi-experimental design to assess the effectiveness of REBT in mitigating depression and enhancing academic performance of DHH adolescents in selected schools, Nairobi County. The Quantitative method was used to analyze the efficacy of REBT in behavior modification and academic performance. According to
Tugwell, Geldsetzer, Lavis, and Grimshaw (2017), quasi-experimental design is when the experimental and control groups are not fully randomized during assignment.

The researcher opted for quasi-experiment design to facilitate keen observation of the changes that emerged among DHH adolescents that are exposed to REBT. The design was also appropriate because experimental group was in a school setting and other factors such as family interference were controlled. Observations were done before treatment, three months after treatment and six months after treatment. Another advantage of quasi-experimental design was that the difference was compared in the three occasions for both experimental and control groups. Lastly, the design was appropriate because the researcher compared the array of modification over time from before and after treatment; hence, it was a time-series which included simple, interrupted and control time-series design (Rahman, 2017).

3.3 Population

A research population is a whole set of elements that share common characteristic defined by the sampling method established by the researcher (Asiamah, Mensah, & Oteng-Abayie, 2017). It represents the general population from which a target population is derived from. In this case, the estimated population of deaf and hard of hearing in Kenya was approximately 900,000 (WHO, 2018). In Nairobi, approximately 359 adolescents had hearing impairment in public primary schools (MoEST, 2014).

3.3.1 Target population

This is the total group of individuals from which the sample is drawn (Mohsin, 2016). It defined persons units for which the results of the research were generalized to. For this study, the targeted population was the public primary schools for the deaf in 84
Nairobi County. However, the study was carried in two selected primary schools in Nairobi County. The selected schools were Aga Khan Primary School deaf unit in Westland Sub County, Nairobi County, Kenya. The second school was Joseph Kangethe deaf unit, which is along Ngong road. Aga Khan had a total population of 83 DHH learners from Pre-Primary one to class eight, while Joseph Kangethe Primary Deaf Unit had a total population of 55.

3.3.2 Study site

Nairobi County was established in 1899 by the foreign experts in British East Africa as a depot on the Uganda railway. It was established in 2013 on the boundaries as Nairobi province after Kenya’s 8 provinces were divided into 47 counties. The last official population was taken in 2009 and that time the population was 3,138,369 people. Nairobi County has seventeen counties, the highest number of sub counties in the country, which were further divided into 85 electoral wards. The County is on the central Kenyan plateau at an altitude of around 1680 m (5500 feet). It has an estimated urban population of between 3 and 4 million. The languages used are English and Kiswahili. Nairobi is the commercial and cultural center of Kenya. For many years, the town has provided an attraction for rural Kenyan migrants in search of wage labor. Many people live in Kibera, the major slum in Nairobi, where most inhabitants live in extreme poverty. The total number of schools in Nairobi were 1626, out of which 1288 were primary schools and 338 were secondary schools. There were 37 primary schools for the deaf in Kenya and 4 vocational schools catering for the deaf. Omulo (2018) noted that there were only about 12000 deaf children in 118 special schools from primary to tertiary level in Nairobi, Kenya.
Aga Khan Primary School

Aga Khan Primary School for the deaf is located in Highridge, 1st Parklands avenue, off Limuru road in Westlands sub-county. The deaf unit is a day public primary school run by a religious organization. This educational institution is a special school, and mixed type of institution. The pupils to class ratio in this school was 14:1. It started with two classrooms but currently has six classes. PPI, PP2, class one and class two are mixed in one class in most cases. This is because of lack of enough resources in the school. For the last three years, the school had not graduated any KCPE candidate because of the learning barriers caused by lack of resources and DHH personal attributes.

The Aga Khan deaf unit had a population of 83 DHH adolescents against five teachers. Aga Khan Primary School deaf unit, was the experimental group where intervention was administered using REBT. It was a suitable experimental group because it was a unit inside the Regular School with diverse DHH learners from different backgrounds. In addition, DHH adolescents do the same exams with their hearing counterparts within the same environment. Further, the unit had enough population to draw a sample from. The school classes had a conducive environment and DHH adolescents in upper classes had their separate classes unlike other deaf units in Nairobi County where they were all placed in one room.

Joseph Kangethe Primary School

Conversely, Joseph Kangethe was established in 1950 as the only school in the area catering for the deaf children in the Kibera slum area. It was also one of the schools with the highest enrolment of children due to free primary education policy. A deaf unit was established in 1982 with an aim of promoting inclusive education for the deaf. The deaf
unit had 55 DHH adolescents against three teachers plus two in teaching practice. PP1, PP2 and class one classes were mixed in one room while class two up to eight were in one big room but segmented in different corners. Joseph Kangethe was the control group and had no intervention introduced. The school was chosen to be the control group because it lacked good boundaries. The DHH adolescents were combined in two rooms which posed a problem during intervention.

3.4 Sample Size

This is a central feature of any empirical study in which the objective is to make inferences about a population from a sample (Malone, Nicholl, & Coyne, 2016). A sample in a research is the reduced group of individuals derived from a target population using a sample frame (Asiamah, Mensah, & Oteng-Abayie, 2017). This study targeted deaf and hard of hearing adolescents who presented with depressive symptoms that affected their learning process and academic performance. This was based on the results of the BDI screening, and a sample meeting the inclusion and exclusion criteria was selected from the available sampling frames.

The sample size was based on precedence studies done in other countries including Kenya. Satapathy (2008), did a study on the extent of association between academic performance and selected psychosocial such as stress, self-esteem and social-emotional adjustment together with age, caregivers’ education, occupation, number of siblings and family income of deaf adolescents. The sample size consisted of 80 DHH learners of both genders aged 13 to 21 years of age generally from the lower and middle socio-economic class. Results showed that stress had a significant impact on academic performance of
DHH learners. Socio-demographic had significant correlation with academic performance of DHH learners.

A similar study was done by Notash and Elhamkia (2016) in Iran to compare loneliness, depression and stress in deaf adolescents and normal students studying in secondary schools. It had a sample size of 30. The results revealed that there was a significant difference between feelings of loneliness, depression and stress between deaf students and normal students.

Another study done by Musonda and Phiri (2017) on emerging factors affecting academic performance of the DHH adolescents used a sample size of 15 DHH adolescents. The results discovered that teachers of DHH adolescents had restricted skills in the suitable mode of communication which affected the learning process adversely leading to low academic achievement. The study therefore recommended that teachers should confirm that the content in the syllabus was covered expansively through additional lessons, regular homework and customized learning with teachers using a variety of approaches of communication in instruction and evaluating DHH pupils.

Recently, a study was done by Sambu, Otube, and Bunyasi (2018) to measure academic performance of deaf pupils in selected schools in Kenya. A sample size of 50 DHH adolescents was used. The results revealed that use of KSL to teach DHH adolescents had led to better academic performance and reduced stress levels.

Apart from basing the sample size on superior studies, clinical trials were expected to have enough statistical power to discover variations between groups considered to be of clinical interest. Consequently, it was an essential part of research design to calculate sample size with provision for adequate levels of significance and power. The formula by
Casagrande, Pike, and Smith (1978) was used to compute the sample size and the following was considered; the prevalence of deaf and hard of hearing learners in Kenya at 60% and success rate of REBT in treatment of primary school pupils with mental health challenges in Kenya at 40%.

The significance level of 0.05, the confidence level of 95% and the power at the lowest 80% as an improved estimated formula for calculating sample sizes for associating two binomial distributions (Rational Emotive Behavior Theory and Control Groups) in mitigating depression and enhancing academic achievement of DHH adolescents in selected primary schools in Nairobi County, Kenya.

Ho: P = P_A

H_a: P ≠ P_B

\( \hat{P} = \frac{P_A - P_B}{2} \)

\[
\begin{align*}
(Z_{1-\alpha} \sqrt{\frac{2 \hat{P} (1 - \hat{P})}{\hat{r}}} + Z_{1-\beta} \sqrt{P_A (1 - P_A) + P_B (1 - P_B)}^2) \\
\end{align*}
\]

\( \alpha \) = Significant level (Type 1 error) – 0.05

\( \beta \) = Power of the test (Type II error) – 0.20

\( Z_{1-\alpha} \) = Standard normal deviate at 95% Cl (1.64)

\( Z_{1-\beta} \) = Standard normal deviate at 80% Power Cl (1.28)

\( P_A \) = Estimated proportion in arm 1 = 60% which is 0.6.

\( P_B \) = Estimated proportion in arm 2 = 40% which is 0.4.

\( r \) = Proposed effect size at 80% \((P_A - P_B)^2 = (0.6 - 0.4)^2 = 0.04\)

\( \hat{P} = \frac{P_A + P_B}{2} = \frac{0.6 + 0.4}{2} = 0.4 \)

\[
\begin{align*}
(1.64 \sqrt{2 (0.4) (1-0.4)} + 1.28 \sqrt{0.6 (1-0.6) + 0.4 (1-0.4)})^2 \\
\end{align*}
\]

89
The attrition rate was 30%. The sample size for this study was 64, with 32 for experimental group and 32 for control group. The sample size selected had a decent representation of the population which was targeted for the study; it also had appropriate features which were studied.

3.5 Sampling Techniques

Sampling procedure was the method used by the researcher to pick the sample population that participated in the study (Oladipo, Ikimari, Kiplang’at, & Barasa, 2015). Kothari (2013) observed that the researcher must select a procedure and a given sample size that has a smaller sample error. This study used purposive method to select the Aga Khan and Joseph Kangethe public primary schools in Nairobi among five deaf public primary schools. The two schools were chosen because they had high a number of DHH adolescents for the study. Aga Khan was chosen to be an experimental group because the whole unit had DHH adolescents from mixed background and was well defined to avoid contamination during the intervention process. Joseph Kangethe had a large population from Kibera slum, which could have affected the whole intervention process. Due to the limited number of DHH adolescents, simple random sampling was utilized to get the sample size.
3.6 Data Collection Instruments

The researcher utilized socio-demographic questionnaire and document analysis to collect data from the participants. Socio demographic questionnaire, BDI-II and class record form was presented in English, while BDI-II was presented in both English and Kenya Sign Language. This enabled the DHH adolescents to choose KSL.

3.6.1 Researcher-generated questionnaire

The social demographic questionnaire was generated by the researcher and included the following variables: age, gender, class performance and religion. Further, it included the caregivers’ employment status, family economic status, family setup, marital status of their parents, who they stay with and who is responsible for school visits, school fees payments, doing homework and the mode of communication used at the family level. Socio demographic questionnaires were administered in person through the help of trained research assistants.

The researcher ensured reliability of the socio-demographic questionnaire using the pre-test method which was done in Racecourse primary deaf unit in Nairobi County. The researcher administered the instrument to a group of 6 subjects which was 10% of the target population. After the instrument was administered, the researcher waited for two weeks and administered the same instrument to the similar group under the same settings for a second time. A comparison of the first and second totals was done using Pearson’s product moment correlation coefficient which determined the reliability index of the instrument. The pretest results helped the researcher to change some questions which were sensitive to the participants. According to Orodho (2008), a correlation coefficient of >0.7 was marked high enough for ascertaining the consistency of the instrument.

91
3.6.2 Beck depression inventory (BDI-II)

BDI-II was developed by Aaron T. Beck in 1966. It was a 21-item self-reporting rating inventory that measured the intensity, severity and depth of depression in patients with psychiatric diagnoses. The instrument measured mood, pessimism, and sense of failure, self-dissatisfaction, guilt, loss of interest, self-hate, self-blame, suicidal ideas, irritability, social withdrawal, insomnia, fatigue and loss of appetite. Items 1 to 13 assessed signs that were psychological in nature, while items 14-21 assessed more physical symptoms (Beck, Steer, & Garbin, 1988). BDI-II was a significant psychometric instrument displaying high reliability and capacity to discriminate between depressed and non-depressed subjects (Wang & Gorenstein, 2013).

External consistency, reliability and concurrent validity of BDI-II had been established across a wide variety of samples. BDI-II reliability for outpatient sample was a coefficient alpha of .92 (n=500), as stated in the manual. In a sample of 26 outpatients presenting with depression, a test-retest after one week produced a correlational of .93 (Beck 1966). BDI-II has been certified against the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). In this study, BDI-II screened for symptoms of depression which affected their daily functioning, learning and academic performance; screening was done at baseline, midline and end line.

The scoring of the instrument was done by adding up the total for each of the twenty-one questions. The maximum possible total for the whole test was sixty-three, while the possible lowest score for the test was zero. BDI-II scores were classified into six categories to mean the severity of the depressive illness such as normal ups and downs, mild mood disturbance, borderline clinical depression, moderate depression, severe
depression and extreme depression. Cut-off score guidelines for the BDI-II were assumed with the recommendation that thresholds be adjusted centered on the characteristics of the sample. Total score of 0-13 was considered minimal range, 14-19 was borderline, 20–28 was moderate, and 29-63 was severe.

3.6.3 Document analysis (DA)

Document analysis was done by analyzing Continuous Assessment Tests (CATS) performance. This helped in analyzing performance before and after treatment and assessed the effect of REBT in mitigating depression among DHH adolescents. Documents such as registers, diary books and exam report books were examined, and information was collected on class attendance and involvement of caregivers in progress of DHH adolescents by monitoring homework and signing their diaries. Report books were analyzed to check on the progress of academic performance in continuous assessment tests. Social demographic questionnaires were used at baseline. BDI-II was used at baseline, midline, and end line to analyses changes among DHH adolescents after REBT intervention. Document analysis was done at baseline, midline and end line to ascertain the effect of REBT. This analysis was conducted with permission from the school heads.

3.7 Inclusion and Exclusion Criteria

Since it was not possible to study the entire target population, a representative sample was drawn using inclusion and exclusion criteria. DHH adolescents between ages 14-20, who presented with depression symptoms at the time of screening were included. The other criterion used was all those without severe learning disability and mental disorders, and all those ready to join in the study by giving their approval to participate in
the study or having their caregivers sign on their behalf. DHH adolescents who had not finished one year in the two study schools were excluded. Also, excluded were all the participants who could not comprehend questionnaires. The researcher selected DHH adolescents between ages 14-20 from Pre-Primary one (PP1) to class eight because of the limited number of DHH learners and that is why even standard eight were included in the study.

3.8 Data Collection Procedures

This study collected quantitative data using socio-demographic questionnaires, BDI-II.

3.8.1 Recruiting participants

The proposal was permitted by the School of Human and Social Sciences, Daystar University Ethics Review Board (DU-ERB). After this, the researcher sought approval from National Commission for Science, Technology and Innovation (NACOSTI). Permission was also sought from and granted by the Ministry of Education. The authorization letters were used to seek entry into the sampled schools through the head teachers’ permission. Two research assistants were recruited, inducted trained for one week, and taken through the administration of tools. The research assistants worked alongside the principal research throughout the entire course of research.

Data collection started in the stipulated date and involved a baseline screening. Recruitment of participants in the sampled schools was done through announcements by selected head teachers who informed PPI to class eight learners to gather in the hall. The
researcher obtained official lists of all the participants from PPI to class 8. The list helped in assigning of unique codes for anonymity.

In the first meeting with the learners at the beginning of baseline study in their respective schools, the principal researcher introduced herself and the research assistants. They familiarized themselves with the participants and the school environment protocols. The researcher explained to the participants about the study plus the purpose, benefits and the dangers involved, and they made informed consent. Before administration of tools, the participants were informed of ethical issues and requirements. Since most of them were below 18 years, they were assisted by research assistants in giving assent. The consent form was signed by the school head teachers as guardians.

Data collecting tools were administered to respondents both in experimental and control groups. That was done after being guided on the expectations in responding to questions. It was done by reading out the instructions on questionnaires. At baseline, all tools were administered to both the experimental and the control groups in their classrooms. When they completed filling in the questionnaires, they were put in sealed boxes for confidentiality and security. The questionnaires were sorted, coded, organized, labelled and transported for further processing.
Baseline

Analysis of data

Enrolment (meet inclusion criteria)

Excluded (Don’t meet inclusion criteria)

Purposive sampling

Recruitment

Recruited for Control group

Recruited for Experimental group

Intervention

Continue with learning

Intervention Groups apply REBT

Midline assessment (3 Months)

Assessment/Analysis

End line Assessment (3 Months)

Final Analysis

3.8.2 Application of the intervention

The REBT intervention was structured, in group therapy. DHH adolescents were put into two groups of sixteen DHH adolescents. Treatment was done by the principle
researcher and two undergraduate students in counselling psychology with KSL skills. The therapists used REBT manual for counseling. After each session, the principle researcher met the research assistants and reviewed the session to ensure any emerging issues were corrected early enough and discussed before the next session.

Therapists were encouraged to be patient and flexible because they were dealing with a special population which needed more time to be understood. Each therapist was assigned a group. The other therapist interchanged after thirty minutes because signing and interpreting was cumbersome and tedious. Each group session took sixty minutes. The sessions were held twice a week because DHH adolescents take time to grasp concepts and their retention span was slow.

Intervention was done for 13 intensive weeks, after which midline assessment was done. Respondents filled in the BDI-II and their end term exam was recorded to assess any changes after intervention. End line assessment was done after 3 months, and their end term exam performance was recorded as well. The following were lesson break structures. The first two sessions were used in building rapport and taking clinical interview.

Table 3.1: Treatment Structure

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Time of session</th>
<th>Goal</th>
<th>Expected Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1-4</td>
<td>Initial Phase</td>
<td>Two sessions each week</td>
<td>Rapport building</td>
<td>Trusted therapeutic relationship</td>
</tr>
<tr>
<td>Session 1</td>
<td>Introduction</td>
<td>3-5</td>
<td>Emphathy, UPR</td>
<td>Rapport building</td>
</tr>
<tr>
<td>Session 2-8</td>
<td>Exploration stage</td>
<td>3-5</td>
<td>Activating events/beliefs</td>
<td>Consequences</td>
</tr>
<tr>
<td>Week 5-8</td>
<td>Middle phase</td>
<td>Two sessions each week</td>
<td>Detecting irrational beliefs</td>
<td>Effect on behavior</td>
</tr>
<tr>
<td>Sessions 9-16</td>
<td>Disputing irrational beliefs</td>
<td>3-5</td>
<td>Emotional wellness</td>
<td>Normal functioning</td>
</tr>
<tr>
<td>Week 9-12</td>
<td>Final phase</td>
<td>Two sessions each week</td>
<td>Relapse prevention</td>
<td>Termination</td>
</tr>
<tr>
<td>Sessions 17-24</td>
<td>Implementation</td>
<td>3-5</td>
<td>Maintenance</td>
<td>Independency</td>
</tr>
</tbody>
</table>
3.9: Pretesting

Doing a pre-test enabled the researcher to know if the research instruments were stated correctly and clearly understood. This was conducted long before the actual data collection just in case there was need to modify the instruments. Pretesting of the tools was done in Racecourse Primary School for the deaf in Starehe Sub County, opposite Pagwan Primary School, Mweni Road, 11 minutes’ drive to Nairobi city center. This was informed by Mugenda and Mugenda (2003), who posited that it was necessary to do pre-testing on individuals different from the actual participants in the study, though with the same features as the study sample. The pre-test sample was 1% of the sample size and the researcher used purposive method to select 10% of 32 participants who were used as a pre-test sample.

3.10 Data Analysis Plan

According to Kothari (2004), data analysis is the process of bringing order and meaning to raw data. Once the data has been collected, coding is done followed by analysis of data. Data from the field is coded numerically and analysed both qualitatively and quantitatively. Qualitative analysis involves making inferences from the DHH adolescents.

Quantitative data from the field was coded and double entered using MS Excel application. Electronic file backups were prepared to evade any loss or data interfering. Data cleaning and justification using filter questions were performed in order to achieve a spotless dataset that was exported into Statistical Package for Social Sciences version 25 (2015). Data was labelled in readiness for analysis.

Formulation encompasses summarizing and displaying raw data into statistical charts for analysis purposes. According to Kothari (2004), analysis includes working out certain measures and finding the various patterns of interactions that may be existing from
the obtained information. If there is any patterns of interactions found, it is used in the analysis of data, from where the investigator derives the research findings and conclusions.

To generate the output, the researcher used SPSS from International Business Machine (IBM) in data dispensation and analysis. In examining data, the investigator used both inferential and descriptive statistics to distribute the measures from the data (Mugenda & Mugenda, 2003). The summarized data was then put in frequency and percentage on the distribution tables and pie charts using SPSS. One-way Analysis of Variance (ANOVA) was used to determine significant factor affecting depression of DHH adolescents. Data was presented using graphs and pie charts. Finally, reporting of the research findings and recommendations followed.

3.11.1 Data management

Data safety was ensured during data collection by keeping the filled-out socio-demographic questionnaires and assessment tools in envelopes waiting for the respondents to complete the process. The researcher sealed and stored the filled-out questionnaires and assessment tools in a lockable locker where only the researcher accessed them. During data entry, only the researcher, data entry clerk and the statistician assessed the information. Additionally, both the research assistants and statistician filled out confidentiality forms. The computer where data was stored had a password to further protect the data.

Further, numbering of questionnaires was done using new codes developed by the researcher. The filled questionnaires were counter checked by the research assistants and any questionnaire which had not been fully filled in was returned to the participants for completion. Each questionnaire was coded, and data base was developed for easy entry. Statistical Package for Social Sciences (SPSS) was used for data management and analysis.
Next, data was entered into the data base which had been created. Data entry clerks entered the data by creating a data base. This ensured that the participants’ questionnaires tallied from the baseline to end line.

Research assistants and the lead researcher counter checked the data entries and the coding system. Entered data was cleaned by removing any identifiers for confidentiality and confirming registration numbers against the codes assigned. Data analysis was done with the help of a statistician who developed tables and presented the results of the study. The researcher together with the statistician was in constant communication to ensure proper data analysis. Thereafter, the researcher interpreted the data and published the outcome of the study with the help of the supervisors.

Table 3.2: Data Management Table

<table>
<thead>
<tr>
<th>Week</th>
<th>Data</th>
<th>Instruments</th>
<th>Data Analysis Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 0</td>
<td>Establish the severity of depression among DHH adolescents in Nairobi County.</td>
<td>BDI-II</td>
<td>Bivariate analysis, TURF Descriptive Analysis, Canonical Correlation Statistics.</td>
</tr>
<tr>
<td></td>
<td>To identify factors associated to depression and poor academic performance among DHH adolescents.</td>
<td>Demographic Questionnaire, Document analysis</td>
<td>Bivariate Analysis/Non-Parametric Chi-Square Test and Multinomial/ Logistic Regression Statistics.</td>
</tr>
<tr>
<td></td>
<td>To examine the relationship between depression and academic performance of DHH adolescents.</td>
<td>Demographic Questionnaire, BDI-II Document Analysis</td>
<td>Bivariate Analysis/Non-Parametric Chi-Square correlation coefficient Test, Hotelling’s T-Square, Reliability of Association Statistics.</td>
</tr>
<tr>
<td>Time 0</td>
<td>To assess the efficacy of using REBT in mitigating depression among DHH adolescents</td>
<td>Demographic Questionnaire, Document Analysis</td>
<td>Bivariate Analysis, Principal Component Analysis, Factor Analysis, PLS (Partial Least Square - DiD estimator, Independent Sample T Test &amp; ANOVA</td>
</tr>
</tbody>
</table>
3.12 Ethical Considerations

There are ethical issues surrounding social research, just as there are with any form of human action. The purpose of ethical considerations in research is to ensure the research process does not cause physical, emotional, physiological and mental harm to participants. Klenke (2008) argued that the most important ethical principles a researcher has to observe include informed consent, voluntary involvement, confidentiality and privacy, protection from damage and maintenance of the well-being of respondents. According to British Psychological Society Code of Human Research Ethics (2014) document, a researcher should respect the rights and dignity of participants in their research.

Throughout the study, a number of ethical concerns were considered in order to carry out the research in the right principles. Research began with a clearance of the topic by Daystar University’s Psychology Department. Before conducting the study, relevant approval was sought. First, the researcher collected an introductory letter from Daystar University School of Human and Social Sciences explaining the purpose of the study. Also, ethics clearance was obtained from the Daystar University Ethics Review Board (DUERB). Thereafter, permission letter from the National Commission for Science, Technology and Innovation (NACOSTI) was obtained to enable collection of data from the selected school.

The County Director of Education, Nairobi County was informed of the study so as to grant authority for the study to be conducted in Aga Khan School Deaf Unit and Joseph Kangethe primary for the deaf. The researcher also sought authorization from the school head teachers so as to inform them of the study and also book appointment for accessing caregivers for additional information. After permission was granted, the next step was to inform the participant’s parents through the school head teachers because most of the DHH
adolescents were minors. Participants were taken through matters pertaining to their rights in the following steps:

Informed Consent

The investigator clarified to the participants what the study was all about and what it entailed. The researcher took them through their rights including freedom to participate or withdraw without coercion. Participants were given time to ponder the information, process and ask questions. The written consent form had details on ethical considerations, procedure of the study, confidentiality, benefits, personal risks and freedom to participate or withdraw. Before embarking on research, the researcher ensured that all forms had been signed correctly and valid information provided. Those who were above 18 years signed the informed consent ready to take part in research. Those below 18 years of age were given assent from the school head teacher who signed the consent forms on their behalf. The principal researcher clearly briefed the respondents about the research before engaging them and emphasized that participation was voluntary. Further, the researcher showed them an introduction letter evidently stating that this study was particularly for academic progression.

Confidentiality

Bearing in mind the sensitivity of the information that the respondents provided, the issue of confidentiality and concealment was vital. The researcher appreciated the sensitivity of the information the respondents were giving about their personal life, thus, they need to observe privacy throughout the research. The identities of respondents remained anonymous throughout the research work by ensuring that no actual names were used. Numbers or coded names were used to conceal the respondents’ identities in case the
researcher disclosed information about an individual participant (Mugenda & Mugenda, 2003). To do this, the researcher assured the respondents verbally and also in writing of maintaining confidentiality during and after the research.

Voluntary Participation

The researcher assured respondents that they could choose to exit before the end of the study, without facing any negative consequences. Further, participants were free to discontinue at whichever stage. Finally, the researcher discussed with the participants the purpose of the research as well as the procedures to enable them to make informed decisions.

Risk Anticipated

The researcher informed the respondents that there was no identified risks associated with their participation in this research. However, there might be anticipated ordinary discomfort experienced in life or during the performance of routine physical or psychological examinations or test. The research assured the participants that in case of any discomfort, the researcher and the assistants gave the necessary counselling where any distress was encountered especially in cases of trauma which might elicit feelings of sadness.

Benefit of the Study

The participants were informed about the way research would benefit them. The researcher explained to them about the personal growth and behaviour change and the fact that there was no monetary compensation, the respondents benefited in that their depression was reduced and academic performance improved.
Dissemination of Research Results

Dissemination is the transfer of research-based knowledge to the ones that can best make use of it. The aim of disseminating research is for awareness, understanding and action. This was done through publication in journals, books, newspapers, digital repositories and presenting in conferences.

Plagiarism

The document was subjected to plagiarism test to rule out any unethical practice. This ensured that it was the researcher’s work being presented.

3.13 Summary

This chapter discusses the introduction to study design, population, sample size and sampling process, data collection procedure, pre-testing and data analysis. The target population for this research involved Aga Khan primary school, Deaf Unit and Racecourse primary school. The sample size was selected through simple random sampling technique. During collection of data, high level ethics was observed. Analysis of the collected data was done using SPSS version 25. The subsequent chapter will discuss data presentation, analysis and interpretation.
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter offers an overview of the presentation of findings, analysis, and interpretation of data collected from 64 respondents and the key findings from the study.

The respondents consisted of two groups: the experimental and the control group, respectively. The experimental group was treated using rational emotive behavior therapy (REBT) (n=32) and control (n=32). The entire recruited respondents from the beginning to the end, hence, there was 0% attrition rate. Most (54, 84.4%) of the respondents were aged between 14-16 years compared to 10(15.6%) who were aged between 17-19 years. In terms of gender distribution, most of the respondents were female (38, 61.3%) compared to the male (24, 38.7%). Assessments were done at baseline, midline and end line.

Baseline assessment focused on background characteristics such as demographic factors, parents’ educational level, and marital status, employment status, who the respondents lived with, who paid their school fees and who they shared their problems with. The baseline assessment also concentrated on suicidal behaviors of respondents as well as the severity of depression. In addition to this, assessment at baseline focused on academic performance of respondents. Data at baseline was analyzed for comparison with the midline to establish the effect of interventions on reduced depression and academic performance.

Respondents of the experimental group were treated using REBT, while no intervention on the control group. The final assessment was conducted after three months of two-hour sessions per week. SPSS version 23 was used to analyze the data collected using socio-demographic form and Beck depression inventory (BDI).
The following Table 4.1 reveals the background distribution of socio-demographic characteristics of the Deaf and Hard of Hearing (DHH) adolescents by study groups at baseline using the researcher-generated questionnaires.

### Table 4.1: Socio-Demographic Characteristics at Baseline

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>F</th>
<th>%</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents’ Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>54</td>
<td>(84.4)</td>
<td>16.8102</td>
<td>.73529</td>
<td></td>
</tr>
<tr>
<td>17-19</td>
<td>10</td>
<td>(15.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24</td>
<td>(38.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>38</td>
<td>(61.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant’s Class of Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class One</td>
<td>2</td>
<td>(3.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Two</td>
<td>5</td>
<td>(8.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Three</td>
<td>16</td>
<td>(25.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Four</td>
<td>13</td>
<td>(21.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Five</td>
<td>3</td>
<td>(4.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Six</td>
<td>1</td>
<td>(1.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Seven</td>
<td>12</td>
<td>(19.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Eight</td>
<td>10</td>
<td>(16.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Caregiver the Respondents Lives With</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both Parents</td>
<td>35</td>
<td>(55.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father alone</td>
<td>3</td>
<td>(4.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother alone</td>
<td>19</td>
<td>(30.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandparents</td>
<td>2</td>
<td>(3.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guardian</td>
<td>4</td>
<td>(6.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ Parents’ Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>41</td>
<td>(65.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>7</td>
<td>(11.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>9</td>
<td>(14.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>(4.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>3</td>
<td>(4.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ Father’s Occupation Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>12</td>
<td>(19.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>29</td>
<td>(46.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>21</td>
<td>(33.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’ Mother’s Occupation Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>11</td>
<td>(17.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>29</td>
<td>(46.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>22</td>
<td>(35.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>9</td>
<td>(14.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>14</td>
<td>(22.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>7</td>
<td>(11.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>2</td>
<td>(3.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend school</td>
<td>4</td>
<td>(6.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>26</td>
<td>(41.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s Level of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>11</td>
<td>(17.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>10</td>
<td>(15.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>13</td>
<td>(20.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>3</td>
<td>(4.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend school</td>
<td>5</td>
<td>(7.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>21</td>
<td>(33.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Further, results revealed that the study respondents aged 14-16 years were more, which was proportionately higher (84.4%) than those aged 17-19 years who stood at 15.6%. With regard to distribution of gender, the frequency of female respondents was higher (61.3%) when compared to males (38.7). In terms of gender distribution, the frequency of female respondents was higher at 61.3% compared to male respondents at 38.7%.

In accordance to the class of study, the frequency of respondents in class three was higher (25.8%) compared to class one (3.2%), class two (8.1%), class four (21%), class five (4.5%), class six (1.6%), class seven (19.4) and class eight (16.1%).

Respondents were distributed across all classes although they were older than the classes they were in probably due to their delayed milestones as a result of their disability. Additionally, respondents’ distribution on who they lived with revealed that those who lived with both parents were more (55.6%) compared to those who lived with mother alone (30.2%), father alone (4.8%), grandparents (3.2%) and guardians (6.3%).

Similarly, these findings revealed that 65.1% of respondents’ parents were married, followed by those who were separated (14.3%), single (11.1%), divorced (4.8%) while those who did not know their parents’ marital status comprised 4.8%. Further, respondents’ fathers’ occupational status indicated that 46.8% were employed compared to 33.9% who were in business and 19.4% who were not working. Likewise, findings on respondents’ mothers’ occupational status revealed that 46.8% were employed compared to 35.5% who were not working.

Additionally, the study sought to establish respondents’ fathers’ level of education. The study findings revealed that 41.9% respondents had no idea of their fathers’ level of education while 22.6% reported that their fathers had completed college level of education.
Similarly, 14.5% of fathers had acquired university, 11.3% secondary and 3.3% primary, education levels. According to the respondents, the fathers who had never attended school were at 6.5%.” Likewise, distribution of mothers’ level of education indicated that those respondents who did not know the level of their mothers’ education were higher at 33.3% compared to those whose mothers attained secondary level at 20.6%, university at 17.7%, college at 15.9%, and those who did not attend school at 7.9% and primary level at 4.8%. Bivariate inter-group distribution of respondents’ socio demographic characteristics is demonstrated in Table 4.2.
### Table 4.2: Characteristics across Research Groups at Baseline

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total</th>
<th>%</th>
<th>Experimental</th>
<th>Control</th>
<th>Chi-Square Test</th>
<th>Value</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents’s Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>54 (84.4)</td>
<td>26 (40.6)</td>
<td>28 (43.8)</td>
<td>0.474</td>
<td>1</td>
<td>0.491</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-19</td>
<td>10 (15.6)</td>
<td>6 (9.4)</td>
<td>4 (6.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents’s Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24 (38.7)</td>
<td>14 (22.6)</td>
<td>10 (16.1)</td>
<td>0.708</td>
<td>1</td>
<td>0.400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>38 (61.3)</td>
<td>18 (29.0)</td>
<td>20 (32.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent’s Class of Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class One</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
<td>20.438</td>
<td>7</td>
<td>0.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Two</td>
<td>5 (8.1)</td>
<td>0 (0.0)</td>
<td>5 (8.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Three</td>
<td>16 (25.8)</td>
<td>7 (11.3)</td>
<td>9 (14.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Four</td>
<td>13 (21.0)</td>
<td>11 (17.7)</td>
<td>2 (3.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Five</td>
<td>3 (4.5)</td>
<td>0 (0.0)</td>
<td>3 (4.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Six</td>
<td>1 (1.6)</td>
<td>0 (0.0)</td>
<td>1 (1.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Seven</td>
<td>12 (19.4)</td>
<td>9 (14.5)</td>
<td>3 (4.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Eight</td>
<td>10 (16.1)</td>
<td>5 (8.1)</td>
<td>5 (8.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Caregiver the Respondent Lives with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both Parents</td>
<td>35 (55.6)</td>
<td>16 (25.4)</td>
<td>19 (30.2)</td>
<td>7.892</td>
<td>4</td>
<td>0.096</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father alone</td>
<td>3 (4.8)</td>
<td>2 (3.2)</td>
<td>1 (1.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother alone</td>
<td>19 (30.2)</td>
<td>12 (19.0)</td>
<td>7 (11.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandparents</td>
<td>2 (3.2)</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guardian</td>
<td>4 (6.3)</td>
<td>0 (0.0)</td>
<td>4 (6.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent’s Parents’ Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>41 (65.1)</td>
<td>23 (36.5)</td>
<td>18 (28.6)</td>
<td>7.993</td>
<td>4</td>
<td>0.092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>7 (11.1)</td>
<td>2 (3.2)</td>
<td>5 (7.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>9 (14.3)</td>
<td>4 (6.3)</td>
<td>5 (7.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (4.8)</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent’s Father’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>12 (19.4)</td>
<td>3 (4.8)</td>
<td>9 (14.5)</td>
<td>6.222</td>
<td>2</td>
<td>0.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>29 (46.8)</td>
<td>19 (30.6)</td>
<td>10 (16.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>21 (33.9)</td>
<td>9 (14.5)</td>
<td>12 (19.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent’s Mother’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>11 (17.7)</td>
<td>4 (6.5)</td>
<td>7 (11.3)</td>
<td>3.235</td>
<td>2</td>
<td>0.198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>29 (46.8)</td>
<td>18 (29.0)</td>
<td>11 (17.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>22 (35.5)</td>
<td>9 (14.5)</td>
<td>13 (21.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>9 (14.5)</td>
<td>4 (6.5)</td>
<td>5 (8.1)</td>
<td>9.386</td>
<td>5</td>
<td>0.095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>14 (22.6)</td>
<td>9 (14.5)</td>
<td>5 (8.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>7 (11.3)</td>
<td>5 (8.1)</td>
<td>2 (3.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>2 (3.2)</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend school</td>
<td>4 (6.5)</td>
<td>3 (4.8)</td>
<td>1 (1.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>26 (41.9)</td>
<td>8 (12.9)</td>
<td>18 (28.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>11 (17.7)</td>
<td>10 (15.9)</td>
<td>1 (1.6)</td>
<td>21.744</td>
<td>5</td>
<td>0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>10 (15.9)</td>
<td>6 (9.5)</td>
<td>4 (6.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>13 (20.6)</td>
<td>7 (11.1)</td>
<td>6 (9.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>3 (4.8)</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend school</td>
<td>5 (7.9)</td>
<td>3 (4.8)</td>
<td>2 (3.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know</td>
<td>21 (33.3)</td>
<td>3 (4.8)</td>
<td>18 (28.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
With respect to distribution of respondents’ age, majority (40.6%) and (43.8%) of them in the experimental and control groups were aged 14-16 years, respectively. Chi-square analysis implies that the difference in distribution of age frequency across the two study groups was insignificant (p=0.474).

Similarly, the gender distributions among the two research groups shows that frequency of male was higher in experimental group at 22.6% as opposed the male respondents in control group at 16.1%. On the contrary, the frequency of female respondents in the control group was higher at 32% as opposed to the frequency of female respondents at 29%. The chi-square statistical analysis revealed that there was no significant difference in the distribution of gender across the research groups (p=0.708).

Likewise, the data in Table 4.2 implies that the difference in the distribution of who the study respondents lived with, marital status, parents’ occupational status and fathers’ level of education across the research groups was insignificant (Ps > 0.05).

4.2 Analysis and Interpretation of Data

4.2.1 Severity of depression among DHH adolescents in selected public primary schools

This objective discussed how severity of depression was distributed among DHH adolescents in relation to social demographic characteristics. The respondents’ scores on depression were classified into borderline, moderate and severe using DBI-II.

The distribution of severity of depression in relation to the socio-demographic characteristics is well illustrated in Table 4.3.
### Table 4.3: Severity of Depression and the Socio-Demographic Characteristic

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total %</th>
<th>Depression Scores</th>
<th>Chi-Square Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Borderline</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Respondent’s Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>54(84.4)</td>
<td>1 (1.6)</td>
<td>18 (28.1)</td>
</tr>
<tr>
<td>17-19</td>
<td>10(15.6)</td>
<td>0 (0.0)</td>
<td>4 (6.3)</td>
</tr>
<tr>
<td>Respondent’s Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24(38.7)</td>
<td>0 (0.0)</td>
<td>7 (11.3)</td>
</tr>
<tr>
<td>Female</td>
<td>38(61.3)</td>
<td>1 (1.6)</td>
<td>14 (22.6)</td>
</tr>
<tr>
<td>Respondent’s Class of Study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class One</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Class Two</td>
<td>5 (8.1)</td>
<td>1 (1.6)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Class Three</td>
<td>16(25.8)</td>
<td>0 (0.0)</td>
<td>4 (6.5)</td>
</tr>
<tr>
<td>Class Four</td>
<td>13(21.0)</td>
<td>0 (0.0)</td>
<td>4 (6.5)</td>
</tr>
<tr>
<td>Class Five</td>
<td>3 (4.5)</td>
<td>0 (0.0)</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Class Six</td>
<td>1 (1.6)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Class Seven</td>
<td>12(19.4)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>Class Eight</td>
<td>10(16.1)</td>
<td>0 (0.0)</td>
<td>5 (8.1)</td>
</tr>
<tr>
<td>The Caregiver the Respondent Lives With</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both Parents</td>
<td>35(55.6)</td>
<td>1 (1.6)</td>
<td>13 (20.6)</td>
</tr>
<tr>
<td>Father alone</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Mother alone</td>
<td>19(30.2)</td>
<td>0 (0.0)</td>
<td>7 (11.1)</td>
</tr>
<tr>
<td>Grandparents</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Guardian</td>
<td>4 (6.3)</td>
<td>0 (0.0)</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Respondent’s Parent’s’ Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>41(65.1)</td>
<td>1 (1.6)</td>
<td>13 (20.6)</td>
</tr>
<tr>
<td>Single</td>
<td>7 (11.1)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Separated</td>
<td>9 (14.3)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>I don’t know</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Respondent’s Father’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>12(19.4)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>Employed</td>
<td>29(46.8)</td>
<td>0 (0.0)</td>
<td>9 (14.5)</td>
</tr>
<tr>
<td>Business</td>
<td>21(33.9)</td>
<td>1 (1.6)</td>
<td>8 (12.9)</td>
</tr>
<tr>
<td>Respondent’s Mother’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>11(17.7)</td>
<td>1 (1.6)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Employed</td>
<td>29(46.8)</td>
<td>0 (0.0)</td>
<td>12 (19.4)</td>
</tr>
</tbody>
</table>
The respondent’s scores on depression were classified into borderline, moderate and severe using DBI-II. The distribution of respondents’ scores on BDI-II showed that respondents aged 14-16 years had higher scores of severe depression at (54.7%), followed by moderate depression (28.1%) and borderline depression (1.6%) as opposed to respondents aged 17-19 years who scored 9.4% (severe depression), 6.3% (moderate depression). This implies that depression was more severe among respondents aged 14-16 years. Chi-square tests revealed that there was no significant difference in the distribution of severity of depression among the respondent’s age groups (p=0.850).

With regard to gender distribution, severe depression was higher among female respondents (37.1%) as compared to male respondents (27.4%). In addition, moderate depression was higher at 22.6% for female respondents as opposed to male respondents who stood at 11.3%. In regard to borderline depression, female participants scored...
1.16%. This indicates that depression was severe among female respondents. The chi-square test showed that there was no significant difference in the distribution of severity of depression in relation to gender at baseline.

On class of study, severe depression was higher in class three (19.4%) as opposed to class four at 14.5%, class seven at 14.5%, class eight at 8.1%, class five at 3.2%, class two at 3.2%, and class six at 1.6%. Further, moderate distribution was higher in class eight at 8.1% as compared to class three at 6.5%, class four at 6.5%, class seven at 4.8%, classes one and two at 3.2% each, and class five at 1.6%. This denotes that depression was severe among class three respondents. Chi-square test revealed that there was no significant difference in the distribution of severe depression and classes of study respondents at baseline.

Based on who the respondents lived with, severe depression was high (33.3%) among respondents who lived with both parents as opposed to those who lived with their mothers alone who were at 19%. Those who lived with their fathers were at 4.8% which was similar to those who lived with their guardian at 4.8%, while those who lived with their grandparents were at 3.2%. In addition, the distribution of moderate depression was high (20.6%) among respondents who lived with both parents compared with those who lived with their mothers alone (11.1%), and guardians (1.6%). Respondents who lived with fathers and grandparents did not portray symptoms of moderate depression. However, chi-square test revealed that there was no significant difference in the distribution of severe depression and the caregivers the respondents lived with a baseline.

As regards marital status, distribution of severe depression among the respondents whose parents were married was higher (42.9%) compared to those whose parents were
separated (9.5%), single parents (7.9%), those who did not know the marital status of their parents (3.2%) and those who were divorced (1.6%). The findings showed that depression was more severe among respondents whose parents were married. Nevertheless, chi-square test indicated that there was no significant difference in the distribution of severe depression and respondents’ parents’ marital status at baseline (p=0.977).

Additionally, frequency of severe depression was higher among respondents whose fathers were employed (32.3%) as opposed to participants whose fathers were in business (19.4%) and those whose fathers were not working (14.5%). This could be attributed to the fact that fathers are pillars of families and sources of security. Their continuous absence from home can be associated with lack of security in families and father-attachment. Further, moderate depression was high among respondents whose fathers were employed (14.5%) in relation to those in business (12.9%) and those not working (4.8%). This indicates that severe depression was high among respondents whose fathers were employed. The chi-squire test indicates that there was no significant difference in the distribution of severe depression among respondents and their fathers’ occupational status at baseline.

In the same manner, severe depression was higher among the respondents whose mothers were employed (27.4%) as opposed to those whose mothers were in business (24.2%) and those not working (12.9%). Pertaining to moderate depression, the frequency was higher among respondents whose mothers were employed (19.4%) as opposed to respondents who were in business (11.3%) and not those who were not working (3.2%). In reference to borderline depression, respondents whose mothers were not working were more aggrieved (1.6%). This infers that severe depression was high among respondents...
whose mothers were employed. The statistics showed that there was no significant
difference in the distribution of severe depression and respondents’ mothers’ occupational
status at baseline.

The distribution of severe depression was higher among the respondents who did
not know their fathers’ level of education (27.4%) compared to respondents whose fathers
had attained college education (12.9%), university education (9.7%), and secondary
education (6.5%), did not attend school (4.8%) and primary education (3.2%). Likewise,
moderate depression was higher on respondents who did not know their fathers’ level of
education (14.5%) as opposed to those whose fathers had college education (8.1%),
university (4.8%), secondary education (4.8%) and 1.6% for those who did not attend
school. Further the findings of the study revealed that as far as borderline depression was
concerned, respondents whose fathers had college level of education scored 1.6%. Notably, severe depression was high among respondents who did not know their fathers’
level of education. However, chi-square tests indicated that there was no significant
difference in the distribution of severe depression and respondents’ fathers’ level of
education at baseline ((p=0.889).

Similarly, participants who did not know their mothers’ level of education
presented with severe depression (20.6%) as compared to participants whose mothers had
university education (14.3%), secondary education (12.7%), college education (7.9%),
those who did not have any education (6.3%) and those with primary level of education
(3.2%). Concerning moderate depression, its distribution was higher among respondents
who did not know their mother’s level of education (12.7%) as opposed to respondents
whose mothers’ had college education (7.9%), secondary education (6.3%), university
education (3.2%), primary education (1.6%) and those who did not have any formal education (1.6%). Further, those respondents whose mothers had attained secondary level had borderline depression which stood at 1.6%. However, chi-square tests revealed no significant difference in the distribution of severe depression and respondents’ mothers’ level of education at baseline (p=0.733).

4.2.2 Factors associated with depression and poor academic performance

The second objective examined the factors associated with depression and poor academic performance among the DHH adolescents. The association between predictive factors and academic performance was also looked at. The following Table 4.4 denotes the distribution of respondent’s academic performance at baseline.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency %</th>
<th>Mean &amp; Std. Deviation</th>
<th>Std, Error of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>E = Poor</td>
<td>10 (15.6)</td>
<td>.9219 ± (SD: .06019)</td>
<td></td>
</tr>
<tr>
<td>D, D- = Weak</td>
<td>49 (76.6)</td>
<td>.48155</td>
<td>.06019</td>
</tr>
<tr>
<td>C, C+, C-, D+ =</td>
<td>5 (7.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>64 (100.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The respondent’s scores were distributed into average, weak and poor using the school grade system. The respondents whose academic performance was graded to be weak were higher (76.6%), compared to poor (15.6%) and average (7.8%). This indicates that higher proportion of the respondents were weak in academic performance.

Socio-Demographic Characteristics and Respondent’s Academic Performance

Distribution of socio-demographic characteristics and Respondents’ academic performance is shown in Table 4.5.
Table 4.5: Socio-demographic Characteristics and Academic Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total %</th>
<th>Respondent’s Academic Performance</th>
<th>Chi-Square Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>E = Poor</td>
<td>D, D- = Weak</td>
</tr>
<tr>
<td>Respondent’s Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>54 (84.4)</td>
<td>8 (12.5)</td>
<td>41 (64.1)</td>
</tr>
<tr>
<td>17-19</td>
<td>10 (15.6)</td>
<td>2 (3.1)</td>
<td>8 (12.5)</td>
</tr>
<tr>
<td>Respondent’s Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24 (38.7)</td>
<td>5 (8.1)</td>
<td>18 (29.0)</td>
</tr>
<tr>
<td>Female</td>
<td>38 (61.3)</td>
<td>5 (8.1)</td>
<td>29 (46.8)</td>
</tr>
<tr>
<td>Respondent’s Class of Study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class One</td>
<td>2 (3.2)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Class Two</td>
<td>5 (8.1)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>Class Three</td>
<td>16 (25.8)</td>
<td>4 (6.5)</td>
<td>12 (19.4)</td>
</tr>
<tr>
<td>Class Four</td>
<td>13 (21.0)</td>
<td>4 (6.5)</td>
<td>9 (14.5)</td>
</tr>
<tr>
<td>Class Five</td>
<td>3 (4.5)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Class Six</td>
<td>1 (1.6)</td>
<td>0 (0.0)</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Class Seven</td>
<td>12 (19.4)</td>
<td>1 (1.6)</td>
<td>10 (16.1)</td>
</tr>
<tr>
<td>Class Eight</td>
<td>10 (16.1)</td>
<td>1 (1.6)</td>
<td>8 (12.9)</td>
</tr>
<tr>
<td>The Caregiver the Respondents Lives With</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both Parents</td>
<td>35 (55.6)</td>
<td>6 (9.5)</td>
<td>25 (39.7)</td>
</tr>
<tr>
<td>Father alone</td>
<td>3 (4.8)</td>
<td>1 (1.6)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Mother alone</td>
<td>19 (30.2)</td>
<td>2 (3.2)</td>
<td>17 (27.0)</td>
</tr>
<tr>
<td>Grandparents</td>
<td>2 (3.2)</td>
<td>1 (1.6)</td>
<td>1 (1.6)</td>
</tr>
<tr>
<td>Guardian</td>
<td>4 (6.3)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>Respondent’s Parent’s Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>41 (65.1)</td>
<td>9 (14.3)</td>
<td>28 (44.4)</td>
</tr>
<tr>
<td>Single</td>
<td>7 (11.1)</td>
<td>0 (0.0)</td>
<td>7 (11.1)</td>
</tr>
<tr>
<td>Separated</td>
<td>9 (14.3)</td>
<td>1 (1.6)</td>
<td>8 (12.7)</td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>3 (4.8)</td>
</tr>
<tr>
<td>I don’t know</td>
<td>3 (4.8)</td>
<td>0 (0.0)</td>
<td>2 (3.2)</td>
</tr>
<tr>
<td>Respondent’s Father’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>12 (19.4)</td>
<td>1 (1.6)</td>
<td>10 (16.1)</td>
</tr>
<tr>
<td>Employed</td>
<td>29 (46.8)</td>
<td>7 (11.3)</td>
<td>20 (32.3)</td>
</tr>
<tr>
<td>Business</td>
<td>21 (33.9)</td>
<td>2 (3.2)</td>
<td>17 (27.4)</td>
</tr>
<tr>
<td>Respondent’s Mother’s Occupational Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>11 (17.7)</td>
<td>3 (4.8)</td>
<td>6 (9.7)</td>
</tr>
<tr>
<td>Employed</td>
<td>29 (46.8)</td>
<td>3 (4.8)</td>
<td>24 (38.7)</td>
</tr>
<tr>
<td>Business</td>
<td>22 (35.5)</td>
<td>4 (6.5)</td>
<td>17 (27.4)</td>
</tr>
</tbody>
</table>

Father’s Level of Education
The distribution of academic performance of the respondents considered to be weak was higher at 64.1% among those aged 14-16 years as opposed to those aged 17-19 who performed at average and poorly at 7.8% and 12.5%, respectfully. Similarly, participants who were graded as weak were higher at 12.5% among participants aged 17-19 years old. The chi-squire test established no significant relationship (p=1.089) between participants’ academic performance and age. As far as gender distribution was concerned, frequency of female participants whose academic performance were weak was higher (46.8%) compared to poor (8.1%) and average (6.5%). In the same way, frequency of weak academic performance was higher (29%) among male participants as compared to poor (8.1%) and average (1.6%). There was no significant difference in the distribution of academic performance and gender at baseline (p=1.278).

As indicated in Table 4.5, the frequency of weak academic performance was noted to be high across all socio-demographic factors as opposed to other grades. The statistical analysis using chi-squire established a significant difference in the distribution of academic performance and socio-demographic characteristics (Ps>0.05). Table 4.6 exhibits a logit log linear regression to evaluate factors that led to poor academic performance.
Factors Causing Poor Academic Performance

Table 4.6: Factors that Lead to Poor Academic Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>.963</td>
<td>.292</td>
<td></td>
<td>3.293</td>
<td>.002</td>
<td>.376</td>
<td>1.550</td>
</tr>
<tr>
<td>How respondents communicate with caregivers</td>
<td>.001</td>
<td>.061</td>
<td>.003</td>
<td>.022</td>
<td>.982</td>
<td>-.121</td>
<td>.124</td>
</tr>
<tr>
<td>How mode of communication contributed to Respondent's academic performance.</td>
<td>-.010</td>
<td>.060</td>
<td>-.025</td>
<td>-.159</td>
<td>.014*</td>
<td>-.129</td>
<td>.110</td>
</tr>
<tr>
<td>Who caters for Respondents at school?</td>
<td>-.052</td>
<td>.061</td>
<td>-.122</td>
<td>.858</td>
<td>.395</td>
<td>-.175</td>
<td>.070</td>
</tr>
<tr>
<td>Respondent's opinion on who encourages him/her to have good performance</td>
<td>.019</td>
<td>.057</td>
<td>.049</td>
<td>.335</td>
<td>.739</td>
<td>-.096</td>
<td>.134</td>
</tr>
<tr>
<td>Who assists the Respondents in private studies at home?</td>
<td>.079</td>
<td>.067</td>
<td>.185</td>
<td>1.188</td>
<td>.240</td>
<td>-.055</td>
<td>.214</td>
</tr>
<tr>
<td>How often does Respondent's caregiver assist in doing homework at home?</td>
<td>-.153</td>
<td>.078</td>
<td>-.352</td>
<td>-1.966</td>
<td>.054*</td>
<td>-.310</td>
<td>.003</td>
</tr>
<tr>
<td>Does she/he give extra schoolwork at home?</td>
<td>.005</td>
<td>.176</td>
<td>.005</td>
<td>.029</td>
<td>.007*</td>
<td>-.348</td>
<td>.358</td>
</tr>
<tr>
<td>Who goes to school to meet the teacher regarding the Respondent's school performance and overall discipline?</td>
<td>.003</td>
<td>.035</td>
<td>.014</td>
<td>.100</td>
<td>.921</td>
<td>-.067</td>
<td>.073</td>
</tr>
<tr>
<td>The person the participant shares problem with</td>
<td>.111</td>
<td>.055</td>
<td>.276</td>
<td>2.009</td>
<td>.050*</td>
<td>.000</td>
<td>.221</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Marks the respondent attained in the last exam

Logit log linear regression is a statistical method for analysing data set in which there is one or more independent variables that determine outcomes of dependent variables.
How mode of communication contributed to respondents’ academic performance was statistically noted as a risk factor of respondents academic performance $\beta = -0.010$ ($p=0.014$). In the same way, regression analysis showed that the variable: “How often do participants’ caregivers assist in doing homework at home?” was found to be statistically a risk factor of academic performance $\beta=-0.153$ ($p=0.054$). Further, analysis related to; “Does she/he give extra schoolwork at home?” was a risk factor of academic performance $\beta=0.005$ ($p=0.007$). Additionally, the person respondent shares their problems with was statistically found to be a risk factor to participants’ academic performance $\beta=0.111$ ($p=0.050$).

The mean descriptive statistics of respondent's academic performance and predictive factors at baseline is indicated in Table 4.7.
Table 4.7: Respondent’s Academic Performance and Predictive Factors

<table>
<thead>
<tr>
<th>Models</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>My caregiversPoor</td>
<td>10</td>
<td>1.7000</td>
<td>.82327</td>
<td>.26034</td>
<td>1.1111</td>
<td>2.2889</td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>48</td>
<td>2.3958</td>
<td>.98369</td>
<td>.14198</td>
<td>2.1102</td>
<td>2.6815</td>
<td></td>
</tr>
<tr>
<td>attend all school organized parents’ meetings</td>
<td>5</td>
<td>3.0000</td>
<td>.70711</td>
<td>.31623</td>
<td>2.1220</td>
<td>3.8780</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>63</td>
<td>2.3333</td>
<td>.98374</td>
<td>.12394</td>
<td>2.0856</td>
<td>2.5811</td>
<td></td>
</tr>
<tr>
<td>When I need assistance in any school work, my caregiver attends promptly</td>
<td>Poor</td>
<td>10</td>
<td>2.3000</td>
<td>.82327</td>
<td>.26034</td>
<td>1.7111</td>
<td>2.8889</td>
</tr>
<tr>
<td>Weak</td>
<td>48</td>
<td>2.5833</td>
<td>.84635</td>
<td>.12216</td>
<td>2.3376</td>
<td>2.8291</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5</td>
<td>2.8000</td>
<td>.44721</td>
<td>.20000</td>
<td>2.2447</td>
<td>3.3553</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>2.5556</td>
<td>.81869</td>
<td>.10315</td>
<td>2.3494</td>
<td>2.7617</td>
<td></td>
</tr>
<tr>
<td>My caregiversPoor</td>
<td>10</td>
<td>1.8000</td>
<td>1.03280</td>
<td>.32660</td>
<td>1.0612</td>
<td>2.5388</td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>46</td>
<td>2.7174</td>
<td>1.00362</td>
<td>.14216</td>
<td>2.4194</td>
<td>3.0154</td>
<td></td>
</tr>
<tr>
<td>always encourage me to work hard in school</td>
<td>Average</td>
<td>5</td>
<td>2.8000</td>
<td>1.09545</td>
<td>.48990</td>
<td>1.4398</td>
<td>4.1602</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>2.5738</td>
<td>1.05608</td>
<td>.13522</td>
<td>2.3033</td>
<td>2.8442</td>
<td></td>
</tr>
<tr>
<td>My caregiversPoor</td>
<td>10</td>
<td>1.6000</td>
<td>1.03280</td>
<td>.32660</td>
<td>1.0612</td>
<td>2.5388</td>
<td></td>
</tr>
<tr>
<td>attend sign language seminars organized by the school</td>
<td>47</td>
<td>1.5319</td>
<td>.97470</td>
<td>.14216</td>
<td>1.2457</td>
<td>1.8181</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5</td>
<td>2.2000</td>
<td>1.30834</td>
<td>.58310</td>
<td>.5811</td>
<td>3.8189</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>1.6290</td>
<td>1.01196</td>
<td>.12852</td>
<td>1.3720</td>
<td>1.8860</td>
<td></td>
</tr>
<tr>
<td>My caregiver visits teachers uninvited and demands to know my academic progress</td>
<td>Poor</td>
<td>10</td>
<td>1.6000</td>
<td>.96609</td>
<td>.30551</td>
<td>.9089</td>
<td>2.2911</td>
</tr>
<tr>
<td>Weak</td>
<td>48</td>
<td>1.9792</td>
<td>.86269</td>
<td>.12452</td>
<td>1.7287</td>
<td>2.2297</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5</td>
<td>2.4000</td>
<td>.54772</td>
<td>.24495</td>
<td>1.7199</td>
<td>3.0801</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
<td>1.9524</td>
<td>.86934</td>
<td>.10953</td>
<td>1.7334</td>
<td>2.1713</td>
<td></td>
</tr>
<tr>
<td>My caregiversPoor</td>
<td>10</td>
<td>1.9000</td>
<td>.87560</td>
<td>.27689</td>
<td>1.2736</td>
<td>2.5264</td>
<td></td>
</tr>
<tr>
<td>are my role models</td>
<td>46</td>
<td>2.4565</td>
<td>1.02646</td>
<td>.15134</td>
<td>2.1517</td>
<td>2.7613</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5</td>
<td>3.2000</td>
<td>.44721</td>
<td>.20000</td>
<td>2.6447</td>
<td>3.7553</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>2.4262</td>
<td>1.00762</td>
<td>.12901</td>
<td>2.1682</td>
<td>2.6843</td>
<td></td>
</tr>
<tr>
<td>When I am faced with challenges,</td>
<td>Poor</td>
<td>10</td>
<td>2.2000</td>
<td>.78881</td>
<td>.24944</td>
<td>1.6357</td>
<td>2.7643</td>
</tr>
<tr>
<td>Weak</td>
<td>48</td>
<td>2.4167</td>
<td>1.06857</td>
<td>.15423</td>
<td>2.1064</td>
<td>2.7269</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>5</td>
<td>3.2000</td>
<td>.83666</td>
<td>.37417</td>
<td>2.1611</td>
<td>4.2389</td>
<td></td>
</tr>
<tr>
<td>My caregivers help me to feel better</td>
<td>Average</td>
<td>63</td>
<td>2.4444</td>
<td>1.02827</td>
<td>.12955</td>
<td>2.1855</td>
<td>2.7034</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------</td>
<td>----</td>
<td>---------</td>
<td>----------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>My caregivers always teach me how to be positive in life</td>
<td>Poor</td>
<td>10</td>
<td>1.9000</td>
<td>.87560</td>
<td>.27689</td>
<td>1.2736</td>
<td>2.5264</td>
</tr>
<tr>
<td></td>
<td>Weak</td>
<td>46</td>
<td>2.5870</td>
<td>1.04512</td>
<td>.15409</td>
<td>2.2766</td>
<td>2.8973</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>5</td>
<td>3.0000</td>
<td>.70711</td>
<td>.31623</td>
<td>2.1220</td>
<td>3.8780</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61</td>
<td>2.5082</td>
<td>1.02669</td>
<td>.13145</td>
<td>2.2452</td>
<td>2.7711</td>
</tr>
</tbody>
</table>

The grand mean of respondents who claimed “My caregivers attend all school organized parents meetings” was $2.3333 \pm (SD: .98374)$. The model on “When I need assistance in any schoolwork, my caregiver attends promptly” indicated that the grand mean was $2.5556 \pm (SD: .81869)$. Further, the total mean of respondents whose caregivers always encouraged them to work hard in school was $2.5738 \pm (SD: 1.05608)$. Respondents who asserted that their caregivers attend sign language seminars organized by the school had a grand mean of $1.6290 \pm (SD: 1.01196)$.

As indicated, the grand mean of respondents who acknowledged that their caregiver visits teachers uninvited and demand to know their academic progress was $1.9524 \pm (SD: .86934)$. Further, the grand mean of respondents who claimed “My caregivers are my role models” was $2.4262 \pm (SD: 1.00762)$. Additionally, the grand mean of respondents who agreed that when they are faced with challenges, their caregivers help them to feel better was $2.4444 \pm (SD: 1.02827)$. Moreover, the grand mean of respondents who claimed “My caregivers always teach me how to be positive in life” was $2.5082 \pm (SD: 1.02669)$. The
The grand mean of respondents whose caregivers teach them life skills was 2.7258 ± (SD: .94382).

### Association of Predictive Factors and Academic Performance

Table 4.8 illustrates ANOVA Analysis testing association of predictive factors and academic performance.

**Table 4.8: ANOVA on Association of Predictive Factors and Academic Performance**

<table>
<thead>
<tr>
<th>Factor Description</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>My caregivers attend all school organized parents meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>6.421</td>
<td>2</td>
<td>3.210</td>
<td>3.595</td>
<td>.034*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>53.579</td>
<td>60</td>
<td>.899</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>60.000</td>
<td>62</td>
<td>.989</td>
<td>4.494</td>
<td>.731</td>
</tr>
<tr>
<td>When I need assistance in any schoolwork, my caregiver attends promptly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>7.192</td>
<td>2</td>
<td>3.596</td>
<td>3.492</td>
<td>.037*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59.726</td>
<td>58</td>
<td>1.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>66.918</td>
<td>60</td>
<td>1.019</td>
<td>1.183</td>
<td>1.161</td>
</tr>
<tr>
<td>My caregivers attend sign language seminars organized by the school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2.366</td>
<td>2</td>
<td>1.183</td>
<td>1.161</td>
<td>.320</td>
</tr>
<tr>
<td>Within Groups</td>
<td>60.102</td>
<td>59</td>
<td>1.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>62.468</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregiver visits teachers uninvited and demand to know my academic progress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2.278</td>
<td>2</td>
<td>1.139</td>
<td>1.533</td>
<td>.224</td>
</tr>
<tr>
<td>Within Groups</td>
<td>44.579</td>
<td>60</td>
<td>.743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>46.857</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers are my role models</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>5.805</td>
<td>2</td>
<td>2.902</td>
<td>3.055</td>
<td>.052*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>55.113</td>
<td>58</td>
<td>.950</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>60.918</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When am faced with challenges, my caregivers help me to feel better</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>3.489</td>
<td>2</td>
<td>1.744</td>
<td>1.686</td>
<td>.194</td>
</tr>
<tr>
<td>Within Groups</td>
<td>62.067</td>
<td>60</td>
<td>1.034</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>65.556</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers always teach me how to be positive in life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>5.194</td>
<td>2</td>
<td>2.597</td>
<td>2.595</td>
<td>.083</td>
</tr>
<tr>
<td>Within Groups</td>
<td>58.052</td>
<td>58</td>
<td>1.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>63.246</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers teach me life skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>8.681</td>
<td>2</td>
<td>4.341</td>
<td>5.609</td>
<td>.006*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45.657</td>
<td>59</td>
<td>.774</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Groups</td>
<td>54.339</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The study assumed that the mean of the variables as indicated in Table 4.8 was not equal to the means of academic performance of the participants at baseline. Hence, the variables were not predictive factors of academic performance. For instance, “My caregivers attend all school organized parents’ meetings” was tested using ANOVA to determine whether the mean of respondents whose caregivers attended all school organized parents’ meetings was equal to the mean of academic performance among respondents. The results revealed a significant relationship (p=0.034) between respondents’ academic performance mean and caregivers who attended all school organized parents’ meetings. This can be interpreted to mean that if caregivers could attend all schools organized meetings, respondents’ academic performance could significantly improve.

Another variable that was tested by ANOVA was to assess whether the mean of respondents whose caregivers always encouraged them to work hard in school was equal to the mean of academic performance among the respondents. The results showed a significant association between the mean of respondents whose caregivers always encouraged them to work hard in school and their academic performance (p=0.037). This signified that caregivers’ constant encouragement to respondents to work hard in school could improve their academic performance.

On the same note, “my caregivers are my role models” was tested to check whether the mean of respondents whose caregivers were role models was equal to the mean of academic performance among the respondents. The findings indicated that there was a significant association between the mean of respondents whose caregivers were their role models and this implied that the respondents’ academic performance would improve if caregivers assumed role modelling responsibility (p=0.052).
Another variable, “my caregivers teach me life skills” was tested to determine if the mean of respondents whose caregivers teach them life skills was equal to the mean of academic performance among the respondents. The results indicated that there was a significant association between respondents whose caregivers taught them life skills and their academic performance (p=0.006). That denotes that if caregivers could teach respondents life skills, their academic performance would significantly improve.

Respondent’s Scores on Depression at Baseline and Predictive Factors

Descriptive statistics of Respondent's scores on depression at baseline and predictive factors is as shown in Table 4.9.

<table>
<thead>
<tr>
<th>Table 4.9: Respondent’s Scores on Depression at Baseline and Predictive Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>How often does Respondent's caregiver assist in doing homework at home?</strong></td>
</tr>
<tr>
<td>17-20 = Borderline Clinical Depression</td>
</tr>
<tr>
<td>21-30 = Moderate Depression</td>
</tr>
<tr>
<td>31-40 = Severe Depression</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>How respondent communicate with caregivers</strong></td>
</tr>
<tr>
<td>17-20 = Borderline Clinical Depression</td>
</tr>
<tr>
<td>21-30 = Moderate Depression</td>
</tr>
<tr>
<td>31-40 = Severe Depression</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>How mode of communication contributed to Respondent's</strong></td>
</tr>
<tr>
<td>17-20 = Borderline Clinical Depression</td>
</tr>
<tr>
<td>Academic Performance</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Respondent’s opinion on who encourages him/her to have good performance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Who assists the respondent in private studies at home?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Does she/he give extra schoolwork at home?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Who goes to school to meet the teacher regarding the Respondent’s school performance and overall discipline?</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The above Table presents the mean and standard deviation of respondents who responded to the following variables as predictive factors of academic performance “How often does respondent's caregiver assist in doing homework at home?”, How respondent’s communicate with caregivers, How the mode of communication contributed to respondent's academic performance, respondent's opinion on who encourages him/her to have good performance, Who assists the respondents in private studies at home, Does she/he give extra school work at home?, Who goes to school to meet the teacher regarding the respondent's school performance and overall discipline?, The person respondents share their problems with and who pays for respondents’ school fees?

Table 4.10 presents the ANOVA analysis showing relationships in means of respondents’ scores on depression and predictive factors.
<table>
<thead>
<tr>
<th>Table 4.10 Difference in Means Scores on Depression and Predictive Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How often does respondent’s caregiver assist in doing homework at home?</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>How respondents communicate with caregivers</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>How mode of communication contributed to respondent’s academic performance</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Respondent’s opinion on who encourages him/her to have good performance</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Who assists the Respondents in private studies at home</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Does she/he give extra schoolwork at home?</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Who goes to school to meet the teacher regarding the respondent’s school performance and overall discipline?</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>The person the respondents shares problems with</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Who caters for respondents at school?</strong></td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

This study assumed that there was no significant difference in the means of respondent’s academic performance and the variables presented in Table 4.10. For instance,
the variable; “How often does respondent’s caregiver assist in doing homework at home?” was tested and the results showed that there was a significant relationship between the means of respondents whose caregivers often assist the respondents in doing homework at home and academic performance (p=0.005). This implies that there is a significant relationship between respondents who often get assistance from their caregivers and academic performance. By implication, when the respondents get assisted in doing homework often, it is a predictive factor of good academic performance and if otherwise, it can as well predict poor academic performance.

Further, the variable “How mode of communication contributed to respondent’s academic performance” was assumed to be a predictive factor of academic performance among the respondents. The result of the ANOVA analysis indicated that means of respondents who saw mode of communication as a contributing factor to academic performance was statistically associated (p=0.012) to academic performance. This implies that the mode of communication used to the respondents was key to effective academic performance. Similarly, the query whether the caregiver gave extra school work at home could be a predictive factor to academic performance was tested with ANOVA analysis and the result showed that there was a significant association (p=0.001) between academic performance and getting additional engagement from caregivers while at home.

Distribution of grand mean academic performance, depression scores and key demographic Characteristics at baseline is well explained in Table 4.11.
As indicated on the Table 4.11, in terms of respondents’ gender, the grand mean academic performance at baseline was .9206 ± (SD: .48532). The Eta squared measure of association was noted to be significant (p=0.020), whereas the grand mean depression at baseline was 3.6190 ± (SD: .52143) and the Eta Squared measure of association was equally significant (p=0.018). The ANOVA test revealed no significant relationship (p=0.290) in the distribution of academic performance and depression scores and gender at baseline.

Concerning distribution of respondent’s age, the grand mean academic performance at baseline was .9219 ± (SD: .48155). The measure of association showed a significant Eta squared of p=0.012 against the grand mean depression among respondents’ age which was 3.6250 ± (SD: .51946). There was also a significant measure of association at Eta squared (p=0.000) between academic performance and gender. However, there was
no significant relationship (p=0.870) established between age and academic performance of respondents at baseline.

As regards respondent’s level of education, the grand mean academic mean for all the classes was .9194 ± (SD: .48917) and the Eta squared test of association showed no significant (p=0.203) depression and academic performance. Also, the grand mean depression among respondent’s level of education was 3.6129 ± (SD: .52338) and the measure of association showed no significant Eta squared (p=0.163). The ANOVA test showed no significant difference in the distribution of academic performance and depression scores among respondents’ level of education at baseline (p=0.077).

4.2.3 Relationship between depression and academic performance

The objective looked at the relationship between academic performance and depression. This particularly examined what happens when depression is high and how it affects the outcome in academic performance and vice versa. The next Table 4.12 shows nonparametric spearman’s correlation that evaluates the relationship between depression and academic performance.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Nonparametric Spearman’s Correlations</th>
<th>Academic Scores at baseline</th>
<th>Depression Scores at baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic scores at baseline</td>
<td>64</td>
<td>.9206</td>
<td>.48532</td>
<td>Academic Coefficient Sig (2 tail)</td>
<td>1.000</td>
<td>-280</td>
</tr>
<tr>
<td>Depression scores at baseline</td>
<td>64</td>
<td>3.6190</td>
<td>.52143</td>
<td>Depression Coefficient Sig (2 tail)</td>
<td>.025</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Spearman’s rank correlation coefficient is a nonparametric measure of statistical dependence between rankings of two variables and it measures the power of monotonic relationship between paired data. Hence, this study sought to study the relationship between 131
academic performance and depression among respondents. As revealed in the Table 4.12, the grand mean depression score was 3.6190 ± (SD: 52143) against the grand mean of respondents’ academic performance at .9206 ± (SD: .48532). The nonparametric spearman’s correlation test indicated a negative correlation between academic performance and depression (p=0.025). This implies that there is inverse relationship between the two variables. In other words, when one variable decreases, the other increases.

4.2.4 Efficacy of REBT in mitigating depression symptoms

The objective sought to investigate the effectiveness of REBT intervention in mitigating depressive symptoms to enhance academic performance. The intervention was applied on the experimental group and it was progressively done. Table 4.13 illustrates the distribution of mean respondents’ scores on depression from baseline to end line.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Statistics</th>
<th>Respondent’s Scores on Depression</th>
<th>Baseline</th>
<th>Midline</th>
<th>End line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>Mean</td>
<td>3.6296</td>
<td>3.1887</td>
<td>2.8889</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>54</td>
<td>53</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.52472</td>
<td>.89830</td>
<td>1.02178</td>
<td></td>
</tr>
<tr>
<td>17-19</td>
<td>Mean</td>
<td>3.6000</td>
<td>3.0000</td>
<td>2.7000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.51640</td>
<td>1.15470</td>
<td>1.41814</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Grand Mean</td>
<td>3.6250</td>
<td>3.1587</td>
<td>2.8594</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>64</td>
<td>63</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.51946</td>
<td>.91944</td>
<td>1.08184</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eta Squared Test</td>
<td>p = 0.000</td>
<td>p = 0.006</td>
<td>p=0.004</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Mean</td>
<td>3.7083</td>
<td>3.0833</td>
<td>2.7083</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.46431</td>
<td>1.05981</td>
<td>1.08264</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Mean</td>
<td>3.5789</td>
<td>3.1842</td>
<td>2.8947</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.55173</td>
<td>.33359</td>
<td>1.08527</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Grand Mean</td>
<td>3.6290</td>
<td>3.1452</td>
<td>2.8226</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>62</td>
<td>62</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.51958</td>
<td>.92056</td>
<td>1.07923</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eta Squared Test</td>
<td>p=0.011</td>
<td>p=0.015</td>
<td>p=0.003</td>
<td></td>
</tr>
<tr>
<td>Class One</td>
<td>Mean</td>
<td>3.0000</td>
<td>4.0000</td>
<td>4.0000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.00000</td>
<td>.00000</td>
<td>.00000</td>
<td></td>
</tr>
<tr>
<td>Class Two</td>
<td>Mean</td>
<td>3.2000</td>
<td>3.6000</td>
<td>3.4000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.83666</td>
<td>.54772</td>
<td>.89443</td>
<td></td>
</tr>
<tr>
<td>Class Three</td>
<td>Mean</td>
<td>3.2500</td>
<td>3.3125</td>
<td>2.6875</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.44721</td>
<td>.60208</td>
<td>1.19548</td>
<td></td>
</tr>
<tr>
<td>Class Four</td>
<td>Mean</td>
<td>3.6923</td>
<td>2.6154</td>
<td>2.3077</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.48038</td>
<td>1.04391</td>
<td>.94733</td>
<td></td>
</tr>
<tr>
<td>Class Five</td>
<td>Mean</td>
<td>3.6667</td>
<td>3.3333</td>
<td>3.6667</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.57735</td>
<td>.57735</td>
<td>.57735</td>
<td></td>
</tr>
<tr>
<td>Class Seven</td>
<td>Mean</td>
<td>3.7500</td>
<td>3.1667</td>
<td>2.7500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.45227</td>
<td>.93744</td>
<td>.62158</td>
<td></td>
</tr>
<tr>
<td>Class Eight</td>
<td>Mean</td>
<td>3.5000</td>
<td>3.0000</td>
<td>2.9000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.52705</td>
<td>1.24722</td>
<td>1.44914</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Grand Mean</td>
<td>3.6129</td>
<td>3.1311</td>
<td>2.8226</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>62</td>
<td>61</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>.52338</td>
<td>.92151</td>
<td>1.07923</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eta Squared Test</td>
<td>p=0.163</td>
<td>p=0.135</td>
<td>p=0.166</td>
<td></td>
</tr>
</tbody>
</table>
The grand mean respondents’ scores on depression as regards age distribution at baseline was 3.6250 ± (SD: .51946). A decline to 3.1587 ± (SD: .1587) was noticed at midline, which declined further to 2.8594 ± (SD: .8594) at end line. The measure of association was significant as revealed by Eta squared of (Ps <0.05) across the assessment time. Similarly, gender distribution showed a drastic reduction in the grand mean depression scores from baseline to end line; for instance, the baseline grand mean depression was 3.6290 ± (SD: .51958), which reduced to 3.1452 ± (SD: .92056) at midline and 2.8226 ± (SD: 1.07923) at end line. The measure of association statistics indicated a significant Eta squared of (Ps <0.05). In addition, concerning participant’s level of education, the grand mean depression at baseline was 3.6129 ± (SD: .52338), which declined noticeably to 3.1311 ± (SD: .92151) at midline and 2.8226 ± (SD: 1.07923) at end line. The measure of association test shows insignificant Eta squared (Ps>0.05).

Mean Reduction Estimates of Depression Scores for REBT and Control Groups

Table 4.14 demonstrates Principal Component Analysis (PCA) of mean reduction estimates of depression scores for REBT and control groups.

<table>
<thead>
<tr>
<th>Time</th>
<th>N</th>
<th>Mean &amp; Std.Dev</th>
<th>KMO</th>
<th>Time</th>
<th>N</th>
<th>Mean &amp; Std.Dev</th>
<th>KMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>REBT</td>
<td></td>
<td></td>
<td></td>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>32</td>
<td>3.6875(.47093)</td>
<td>.037</td>
<td>Baseline</td>
<td>32</td>
<td>3.5806 (.56415)</td>
<td>.586</td>
</tr>
<tr>
<td>Midline</td>
<td>32</td>
<td>2.6250(.94186)</td>
<td></td>
<td>Midline</td>
<td>32</td>
<td>3.7097(.46141)</td>
<td></td>
</tr>
<tr>
<td>End line</td>
<td>32</td>
<td>2.0938(.92838)</td>
<td></td>
<td>End line</td>
<td>32</td>
<td>3.6129(.55842)</td>
<td></td>
</tr>
</tbody>
</table>

Principal component analysis is a variable reduction technique that shares many similarities with exploration Factor Analysis (FA). Its aim is to reduce a larger set of variables into a smaller set of artificial variables called principal components, which account for most of the variance in the original variables. As shown on the Table 4.14, at
experimental group (REBT intervention), the mean depression was 3.6875 ± (SD: .47093) and significantly declined to 2.6250 ± (SD: .94186) at midline and further declined to 2.0938 ± (SD: .92838) at end line. Kaiser Meyer-Olkin (KMO) measure of significant reduction shows that the noticeable reduction at experimental group was significant (p=0.037). Additionally, at the control group it showed that the mean depression at baseline was 3.5806 ± (SD: .56415). The depression symptoms at midline were increased to 3.7097 ± (SD: 46141) and slightly declined to 3.6129 ± (SD: .55842) at end line. KMO measure of significant reduction test indicated insignificant reduction (p=0.586).

![Figure 4.1: State of Depression Symptoms at Baseline across the Groups](image-url)
Figure 4.1 presents the sequential chat showing the frequency of depression symptoms in means at baseline across the research groups. Point 1 represents the experimental group whereas point 2 represents the control group.

![Graph showing depression symptoms at baseline](image)

**Figure 4.2: State of Depression Symptoms at Midline across the Groups**

Figure 4.2 indicates the sequential chat showing the frequency of depression symptoms in means at midline across the research groups. Point 1 represents the experiment group whereas point 2 represents the control group. A noticeable decline in mean depression was evident in the experimental group.
Figure 4.3 presents the sequential chat showing the frequency of depression symptoms in means at end line across the research groups. Point 1 represents the experimental group whereas point 2 represents the control group. A significant decline in mean depression was evident among the experimental group.

The Effect Sizes of the Intervention

The following Table demonstrates partial Eta squared analysis of effect sizes for group mean differences using Cohen’s $d$ standardized mean difference in between-subjects’ effects.
### Table 4.15: Effect Sizes of the Intervention

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type III Sum of Square</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Grand Mean 95% Confidence Interval</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline-Midline</td>
<td>.071</td>
<td>3</td>
<td>.024</td>
<td>.190</td>
<td>.902</td>
<td>.014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline-End line</td>
<td>.177</td>
<td>3</td>
<td>.059</td>
<td>.471</td>
<td>.704</td>
<td>.034</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midline-end line</td>
<td>.341</td>
<td>5</td>
<td>.068</td>
<td>.546</td>
<td>.740</td>
<td>.064</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base-Mid-end line</td>
<td>.034</td>
<td>2</td>
<td>.017</td>
<td>.137</td>
<td>.872</td>
<td>.007</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test of Between-Subjects Effects**

| Baseline   | 180        | 61  | 180        | .668  | .417 | .011               | -1.55 - .368                      |       |       |
| Midline    | 18.526     | 61  | 18.526     | 33.348| .000 | .353               | -1.460 - -.709                    |       |       |
| End line   | 36.339     | 61  | 36.339     | 61.449| .000 | .502               | -1.907 - -1.132                   |       |       |

As indicated on the Table 4.15, the between-subjects effect size partial eta squared ($\eta^2_p$) for both intra-class correlation was noted to have medium effects from baseline to midline $F=33.348 \ d=.353 \ (CI=-1.460 - -.709)$. Similarly, a significant medium effect size was noted between midline and end line at $F=61.449 \ d = .502 \ (CI=-1.907 - -1.132)$. The implication of this medium effect size in this study shows the magnitude of intervention on depression among the respondents from baseline to end line.
Figure 4.4: Estimated Marginal Means of the Intervention

Figure 4.4 presents the profile plot demonstrating the impact of the interventions on the mean depression scores over the three assessment periods. The line graph shows steeper declines in the depression scores after controlling the respondents’ level of education. This depicted that REBT intervention reduced depression in DHH adolescents.
Table 4.16 presents the independent sample T-test group mean statistics.

**Table 4.16: Independent Sample T-Test Group Mean Statistics**

<table>
<thead>
<tr>
<th>Respondent’s scores on Depression</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group at Baseline</td>
<td>32</td>
<td>3.6875</td>
<td>.47093</td>
<td>.08325</td>
</tr>
<tr>
<td>Control Group at Baseline</td>
<td>32</td>
<td>3.5625</td>
<td>.56440</td>
<td>.09977</td>
</tr>
<tr>
<td>Experimental Group at Midline</td>
<td>32</td>
<td>2.6250</td>
<td>.94186</td>
<td>.16650</td>
</tr>
<tr>
<td>Control Group at Midline</td>
<td>32</td>
<td>3.7097</td>
<td>.46141</td>
<td>.08287</td>
</tr>
<tr>
<td>Experimental Group at End Line</td>
<td>32</td>
<td>2.0938</td>
<td>.92838</td>
<td>.16412</td>
</tr>
<tr>
<td>Control Group at End Line</td>
<td>32</td>
<td>3.6250</td>
<td>.55358</td>
<td>.09786</td>
</tr>
</tbody>
</table>

At baseline, the mean depression at experimental group was 3.6875 ± (SD: .47093) against the mean depression at control group which was 3.5625 (SD: .56440). The group statistics at midline indicated that mean depression in experimental group was 2.6250 ± (SD: 94186) as opposed to control group mean depression 3.7097 ± (SD: .46141). Also, at end line, the mean depression in experimental group was 2.0938 ± (SD: .92838) compared to the mean depression in control group 3.6250 ± (SD: .55358).

The following Table 4.17 demonstrates the independent sample T-test. This statistical model is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups.

**Table 4.17: The Independent Samples T Test**

<table>
<thead>
<tr>
<th>Respondent’s scores on Depression</th>
<th>Equality of Variance</th>
<th>T-Test for Equality of Means</th>
<th>95% CI of Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>T</td>
<td>df</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>Baseline</td>
<td>3.632</td>
<td>.061</td>
<td>.962</td>
</tr>
<tr>
<td>Midline</td>
<td>14.399</td>
<td>.000</td>
<td>.61</td>
</tr>
<tr>
<td>End line</td>
<td>10.754</td>
<td>.002</td>
<td>5.775</td>
</tr>
</tbody>
</table>

140
The value of significant level was set at p=0.05, on which the study can determine the effectiveness of the intervention. As indicated on the Table 4.17, the mean difference at midline was -1.08468 SE difference of .18783 which shows a significance of p=0.000. The effectiveness of the intervention at end line shows a mean difference of -1.53125 with the standard error difference of .18783 (CI = -1.91321 - -1.14929). The T-Test for equality of means was significant (p=0.000). This implies that there was a significant difference in population means of the two unrelated groups. This means that the treatment at experimental group was statistically effective to reduce the depression symptoms among the participants.

Factor Estimates of Academic Performance for REBT and Control Groups

Table 4.18 illustrates the Principal Components Analysis (PCA)’s symptoms reduction of academic performance.

| Table 4.18: Estimates of Academic Performance for REBT and Control Groups |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | N | Mean & Std.Dev | KM O | Time | N | Mean & Std.Dev | KM O |
| Experimantal Baseline | 32 | .7500 ± (.50800) | .000 | Control Baseline | 3 | 1.0938 ± (.39015) | .019 |
| Midline | 32 | 1.4063 ± (.49899) | | Midline | 3 | 1.2500 ± (.43994) | |
| End line | 2 | 1.3750 ± (.49187) | | End line | 2 | 1.4375 ± (.50402) | |

The analysis explores mean estimates of academic performance Scores for the experimental and Control Groups at baseline, midline, and end line. PCA is a variable reduction technique that shares many similarities to exploration factor analysis. Its aims is to reduce a larger set of variables into a smaller set of artificial variables called principal components, which account for most of the variance in the original variables.
Principal component analysis shows a noticeable increase in academic performance mean was seen from baseline to midline among the participants treated with REBT at .750 ± (SD: .50800) to 1.406 ± (SD: .49899) and slightly reduced from midline to end line (1.406 ± (SD: .49899) to 1.375 ± (SD: .492). Kaiser Meyer-Olkin measure of significant reduction (KMO) test shows that the magnitude of increase in academic performance as a result of intervention to treat depression using REBT was significant (p=0.000). This seems to suggest that treating depression symptoms among the participants can equally increase the academic performance of the participants.

Similarly, a noticeable increase in the mean academic performance was seen among the participants in the control group. The mean academic performance increase from 1.0938 ± (SD: .39015) at baseline to 1.2500 ± (SD: .43994) at midline. The mean academic performance further increased to 1.4375 ± (.50402) at end line. Kaiser Meyer-Olkin measure of significant reduction (KMO) test shows that there was a significant increase in mean academic performance among the participants in control group (p=0.019). This seems to imply that participants’ academic performance can be improved without REBT intervention.

4.3 Summary of Key Findings

The findings of this study showed that the proportion of severe depression was more among DHH adolescents aged 14-16 at 57.9%. Further, as regards gender distribution, the frequency of severe depression was higher among female participants at 37.1%. It was also noted to be higher among participants whose level of study was class three at 19.4%, participants who lived with both parents at 33.3%, and participants whose parents were employed at 46.8%.
In regard to factors associated with depression and poor academic performance, the study findings revealed that the main risk factors of participants’ academic performance were the mode of communication used, frequency of participants’ caregiver assistance in doing homework, giving extra homework and who the participants share their problems with at $\beta = -0.010 \ (p=0.014)$, $\beta=-0.153 \ (p=0.054)$, $\beta=0.005 \ (p=0.007)$ and $\beta=0.111 \ (p=0.050)$ respectively.

Further, the study findings revealed that there was association between predictive factors and academic performance of caregivers attending school organised meetings ($p=0.034$), encouraging participants to always work hard ($p=0.034$), caregiver being role models to participants ($p=0.052$) and participants being taught life skills by caregivers ($p=0.006$). In addition, the study findings also indicated that the mode of communication used, how often caregivers assisted DHH adolescents in doing homework and giving of extra homework were predictive factors to DHH adolescents’ depression at $p=0.01$, $p=0.005$ and $p=0.001$ respectively.

Further, the nonparametric spearman’s correlation test tested the relationship between depression and academic performance among DHH adolescents. The test established existence of a significant relationship between academic performance and depression ($p=0.025$). This implies that depression and academic performance co-exists among the participants. Regarding efficacy of REBT in mitigating depression symptoms, results revealed that the between-subjects effect size partial eta squared ($\eta^2_p$) for both intra-class correlation was noticed to have medium effects from baseline to midline $F=33.348 \ d=.353 \ (CI=-1.460 \ - \ .709)$. Similarly, a significant medium effect sizes was noticed between midline and end line at $F=61.449 \ d = .502 \ (CI= -1.907 \ - -1.132)$. The implication
of this medium effect sizes in this study describes the magnitude of REBT intervention on depression among the participants from baseline to end line.

4.4 Summary

This chapter presented and systematically discussed the findings of the study. It also summarized, the noteworthy findings and presented results in tables. The chapter also discussed the analysis and interpretation and highlighted key findings of the study. The next chapter focuses on discussions, conclusions, and recommendations.
CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the findings of the study are discussed in respect to the study objectives, conclusions and recommendations made for the institutions for further research.

5.2 Discussion of Key Findings

This study aimed at establishing the effectiveness of REBT in mitigating depression and enhancing academic performance among deaf and hard of hearing adolescents. The study was done among the screened and eligible students from the Aga Khan and Joseph Kangethe Primary School in Nairobi. Evaluation of the participants at baseline, midline and end line was done among the participants and finally the effect size of the therapeutic approach and effectiveness of the intervention was evaluated to determine its efficacy.

5.2.1 Severity of depression among DHH adolescents in selected public primary schools

The objective investigated the distribution of severity of depression among the DHH adolescents and the social demographic characteristics. The participant’s scores on depression were classified into borderline, moderate and severe depression using BDI-II.

The findings of this study showed that the proportion of severe depression was more (57.9%) among DHH adolescents aged 14-16 years. The reasons for experiencing depression at the onset of adolescence stage could be a desire for greater autonomy, pressure to conform with peers, exploration of sexual identity and increased access to and use of technology. Further, depressive symptoms in DHH adolescents may stem from situations that involve social interactions such as loss of ability to interact, rejection, stigmatization and isolation. This was supported by Center for Behavioral Health Statistics and Quality (2016) who reported that 12.5% of DHH adolescents in the United States were affected by
severe depression. This finding was reinforced by another study done by Hapunda-Chibanga (2016) whose results revealed that the prevalence of severe depression was at 4.9% among DHH adolescents.

To reinforce this finding, a study conducted by Rostami et al. (2014), reported that adolescence was a very difficult period of life because they are highly stressed and moody due to developmental changes that occur at this phase of life that involves fast physical and emotional changes, struggle for identity and self-image (Brice & Strauss, 2016). This development phase in adolescents is likely to accelerate depressive symptoms. Adigun (2017) concurs with this finding by observing that 25% of adolescents investigated experienced major depression. These findings were reinforced by a study by Hapunda-Chibanga (2016) whose results revealed that the prevalence of moderate to severe depression among DHH adolescents was 4.9% in a school-based cross sectional survey in which 1277 DHH adolescents aged between 6 to 13 years participated.

The current study results revealed that the prevalence of depression among DHH adolescents was high, which may have been accelerated by major problems in communication, stigmatization and low self-esteem that lead to social and psychological alienation in the family and at school. This ultimately leads to stress and consequent depression. As a result, this affects their academic performance negatively because of depressed mood episodes that these adolescents undergo.

Another study by Watt and Devis as cited in Rostami et al. (2014) used the revised BDI to investigate the prevalence and severity of depression among 50 DHH adolescents in a deaf residential school. DHH adolescents were 70 while hearing respondents were 85. The findings of the study revealed that severe depression was higher among DHH
adolescents as a group (M=10.52) than among hearing participants (M=6.59). However, this was contrary to a study conducted by Brown and Cornes (2015) who observed that age was not a contributing factor of depression among DHH adolescents.

The study findings showed that severe depression was high on respondents whose fathers were employed at 32.3%. This could be attributed to the fact that fathers are pillars of families and sources of security. Their continuous absence from home can be associated with lack of security in families and father-attachment. Further, because of their absence it could lead to minimal interaction and lack of parental guidance which leads the children to see their fathers as strangers, a state that could easily trigger depression.

This finding differs with a study conducted by Kushalnagar et al. (2017), which revealed that severe depression was high among DHH males who communicated with their mothers. This could be because of lack of identity from a father figure; it could also be attributed to lack of a male counterpart to guide and help the DHH males understand the masculinity changes they experience at adolescence stage. This implies that greater attention should be given to promoting healthy communication between DHH adolescents with their fathers. This is contrary to observations made by Rostami et al. (2014) that children’s fathers’ profession did not seem to have any effect on the children’s levels of depression.

With regard to gender, severe depression was highly distributed among females (37.1%) as compared to males (27.4%). In addition, moderate depression distribution was higher for female respondents (22.6%) as opposed to male respondents (11.3%). This finding is supported by a study conducted by Tambs et al. (2007) where females had more severe depression than males. The findings agree with findings of another study that found
out that females had severe depression as compared to males at 16.9% and 14.7% respectively (Ming et al., 2014).

The findings concur with a study conducted by Emond et al. (2015) which established that 31% females reported severe depression when compared to their male counterparts who were at 14%. Several reasons could explain why females tend to exhibit depression symptoms more than their male counterparts. Such reasons include hormonal changes during puberty or pregnancy, temporary mood swings related to fluctuating hormones, pre-menstrual syndrome symptoms such as abdominal bloating, breast tenderness, headache, and irritability. In addition to these reasons, depression may increase during the early transition to menstrual periods or after.

However, this finding was contrary to a study conducted by Gomaa and colleagues (2014) where more males (52.5%) than females (46.7%) had severe to extreme depression. This notwithstanding, the finding is not consistent with the findings of a study by Hsu and other researchers (2016) which found out that relative risk of depression was equally distributed on both genders. Additionally, conflicted results on a national cohort study by Kim and colleagues (2017) indicated that severe depression was consistent in all ages and sex groups. Noticeable inconsistency could be as a result of uncontrollable variables or random experimental error in research. Another reason for the inconsistency could be the environment where the research was conducted.

Based on who the respondents lived with, severe depression was highly distributed on respondents who lived with both parents at 33.3% as opposed to those who lived with mothers only at 19%, those who lived with fathers only at 4.8%, those who lived with guardians at 4.8% and those who lived with grandparents at 3.2%. This finding can be
explained with the fact that approximately 90% of DHH adolescents are born to parents who are not DHH, thus, there is reduced attachment and decreased attuned communication due to communication breakdown that easily lead to frustrations and consequent depression (Szarkowski & Brice, 2016). Additionally, inadequate expression of what the DHH go through affect how they feel. Their feelings expose them to stressful situations which eventually make them vulnerable to depression (Bozzay et al., 2017). On the other hand, this finding could represent modest cultural differences in the experiences of depressed adolescents and the deaf at large.

It is evident that DHH adolescents have a cultural identity distinct from that of more dominant cultural groups (Rogers et al., 2014). This leads to child-parent conflicts that cause depression to DHH adolescents as they desire to express themselves and find freedom to be who they want to be but they are not able. Similarly, absent parents who spend more time at work affect their relationship with their DHH adolescents leading to feelings of rejection, isolation and confusion (Landsberger et al., 2014). Furthermore, this finding indicates that distribution of severe depression was higher among the respondents whose parents were employed (32.3% and 27.4%), which confirms why DHH adolescents who lived with both parents had high distribution of severe depression. Therefore, parents should create quality time for their DHH adolescents to guide and teach them how to cope with life challenges. In addition, the parents should take a bold step and learn sign language to make communication with their children easy and more effective.
5.2.2 Factors Associated to Depression and Poor Academic Performance among DHH Adolescents

This objective sought to investigate factors associated to depression and poor academic performance of DHH adolescents. Those factors are practices which if they are applied by the caregiver, they reduce depression and enhance academic performance of DHH adolescents.

The findings of this study indicated that the mode of communication used by caregivers was statistically noted to be a risk factor on respondents’ academic performance $\beta = -.010$ (p=0.014). This can be explained by the extent to which DHH adolescents interact with others, the accommodations and support provided to help them express themselves, reduce depression and improve academic performance. Besides, communication barriers may make it difficult for DHH adolescents to participate appropriately in class which can lead to exclusion (Brice & Strauss, 2016).

A study conducted by Marschark et al. (2015) indicated that communication affected academic achievement in comprehension passage, maths, social studies and science at 13%, 13%, 13% and 15% respectively. These findings corroborate with a study by Brice and Strauss (2016) where parents and teachers who were not using sign language as a mode of communication were restricting DHH adolescent’s cognitive development and precipitating poor academic performance. These results were also supported by a recent study by Terlektsi et al. (2020) which noted that 77% of DHH adolescents reported being bullied because of communication difficulties and this affected their academic performance. The same study revealed that 43% of DHH adolescents found it hard to make
new friends and did not feel confident to speak because of communication breakdown, and this contributed negatively to their academic performance.

This study sought to find out how often respondents’ caregivers assisted them in doing homework. The findings revealed a statistical risk factor to academic performance $\beta=-0.153$ (p=0.054). These findings match those of a study done by Alegre de la Rosa and Angulo (2019) where 67.24% respondents were helped by their fathers to do homework and this reinforced their academic performance. Likewise, Duarte et al. (2016) supported this study with their results which revealed that when caregivers helped DHH adolescents in doing homework, their communication and academic performance increased at 22% (p=0.02).

This was again supported by a study conducted by Wanjiru (2014) who noted that 60% of DHH adolescents whose parents were consistently involved in their learning process portrayed significant benefits in their behaviors as it led to reduced depressive symptoms and increased academic performance. In addition, 39% of DHH adolescents were assisted in doing homework by the parents and this improved their academic performance. However, this finding differs with a study conducted by Akellot and Bangirana (2019) which noted that assisting DHH adolescents in doing homework was not associated with their academic performance (p=0.46).

In addition, the finding indicates that being given extra work at home was statistically a risk factor of academic performance $\beta=0.005$ (p=0.007). This can be interpreted that assisting DHH adolescents in doing homework and giving extra homework promotes strong ties between the DHH and their caregivers. This positively reinforces their self-esteem and instils confidence in them promoting healthy child-parent relationship.
Consequently, positive reinforcement creates a good environment to ask questions and share their feelings, which in return motivates them to work hard in school and post good academic results.

As a risk factor to respondents’ academic performance $\beta=0.111$ ($p=0.050$) was statistically found on the person’s respondents shares their problems with. This was supported by a study that found out that DHH adolescents who share and interact with their parents display better mental flexibility and cognitive control as well as more creative thinking and problem solving skills extended to social and academic settings (Napoli et al., 2015). However, Brice and Strauss (2016) noted that DHH adolescents find themselves in a unique acculturative situation that is distinct from other adolescents. This is because 95% of DHH adolescents were born to hearing parents who had limited knowledge of sign language.

The findings of this study were in conformity with a study conducted in Australia which revealed that language used at home was a significant predictor of depression as part of mental health problems (Brown & Cornes, 2015). A similar study by Marschark et al. (2015) concurred with this study when they observed that with regard to communication in hearing families, fathers were the most vulnerable. It also revealed that, in approximate 50% of cases, it was the mother who was the main signer and in 50% of occasions it was a sibling but rarely the father which caused a lot of loneliness, stress to DHH adolescents and limited family sharing.

Further, Kushalnagar et al. (2017) revealed that difficulties in understanding basic communication with parents increased the odds of depression. This finding concurs with a study conducted by Kushalnagar et al. (2017) which revealed that the mothers’
communication with male DHH was associated with depression. The study revealed that approximately 27% reported that they had communication difficulties. A similar study conducted by Wambui (2015) found that communication barrier both at home and in school was the main reason associated with poor academic performance. This implies that greater attention is needed to promote healthy communication between DHH adolescents and their caregivers to potentially reduce the emergence of depression at a later time in their lives.

Another study by Jaiyeola and Adeyemo (2018) revealed that majority of DHH adolescents had parents with typical hearing levels and about 80% of parents were unable to communicate, which created a gap for depression vulnerability and direct effect on their quality of life. This notwithstanding, the association of communication mode and depression has evidence to show that DHH adolescents were still at high risk of psychosocial stress such as low self-esteem and empathy after controlling language ability (Netten et al., 2015).

Statistically significant associations were found between caregivers who attended all school organized meetings and academic performance at p=0.034. This finding corroborates that of a study by Wong and other researchers (2018) which noted that 61.15% agreed that their fathers attend school meetings, and this resulted in good academic performance. Other factors which were found statistically associated with academic performance were respondents whose caregivers always encouraged them to work hard in school (p=0.037), and caregivers who were role models and taught life skills, which contributed to improved academic performance at (p=0.052) and (p=0.006) respectively. This finding concurs with a study conducted by Wong et al. (2018) which revealed that parents who teach their DHH adolescents life skills become their role models.
Consequently, this strengthens their problem-solving skills and decision making, which may be related to successful transition from elementary to high school.

This can be interpreted to mean that adolescence is a challenging transitional period for many young people including the DHH adolescents (Wong et al., 2017). They go through many changes; physical, cognitive, emotional and social development of their lives during this stage. These changes lead to unnecessary stress, anger issues and low self-esteem resulting in low academic performance and maladaptive behaviours in school and at home. In addition, adolescence is a period of experimenting, experiencing and expanding in growth and development (Brice & Strauss, 2016).

Adolescents need help and guidance in decision making, problem solving, critical thinking, developing interpersonal skills, self-awareness, empathy, coping with stress and managing emotions. According to Ramakrishna et al. (2016), teaching of life skills promotes healthy behaviour and mental wellbeing. Life skills fulfill an important role in developing communication skills, interpersonal skills and problem-solving skills as these are critical in shaping individuals’ personalities.

These findings correspond with Scarinci and colleagues (2018) who noted that caregivers’ values and beliefs on language development, life and social skills on the unity of the family promote positive deviation in school. This was reinforced by a study which affirmed that caregivers always discussed with their DHH adolescents on how to have a normal life that influenced their decisions and academic performance (Crowe et al., 2014). Similarly, Guardino and Cannon (2016) claimed that family support and attributes contribute to DHH adolescents’ social and academic development. This was contrary to a study conducted by Wong and other researchers (2017) which stated that DHH
adolescents’ academic performance depends on other related factors such as other disabilities.

Another contradiction on life skills was noted in a study by Ramakrishna et al. (2016) which found out that it is the role of educators to teach life skills along with other subjects at primary and high schools. Further, the study denoted that life skills fulfill an important role in developing communication, interpersonal and problem solving skills as they shape individuals’ personalities. The same sentiments were echoed by Adibsereshki et al. (2015) who stated that school is the only place where DHH adolescents learn life skills and ways of being in the world.

5.2.3 Relationship between depression and academic performance of DHH adolescents.

This objective scrutinized at the relationship between depression and academic performance and how the relationship affects the functioning of DHH in terms of academic achievement. The nonparametric spearman’s correlation test findings revealed that there was a significant relationship between academic performance and depression (p=0.025). This implies that depression and academic performance co-exists among the respondents. Existing research suggests that DHH adolescents were more vulnerable to depression and poor academic performance than their hearing counterparts (Fellinger et al., 2015). For example, overall prevalence rates of mental health problems have been documented to range between 19% and 77% in this group, rates that are higher than those found among youth in the general population (Stancliffe et al., 2015).

According to Ohre et al. (2016), DHH adolescents were found to be two to four times more likely than hearing youth to exhibit internalizing problems which mostly affects their academic performance including depressive symptomatology. Similarly, another
study documented that approximately 26% of DHH adolescents met the criteria for a clinical diagnosis interview derived from the Diagnostic Interview Schedule for Children (Fellinger et al., 2015). Further, it was noted that DHH adolescents who met the criteria had poor academic performance due to diminished concentration and loss of interest in learning. This is so because depression has serious consequences on DHH adolescents (Berry, 2017). It results in disruption of social, familial functioning and poor school performance.

The findings of this study mirror a study conducted in the United States by Warner-Czyz et al. (2015), which revealed that self-esteem ratings were associated with depressive mood resulting to poor academic performance. Therefore, clinicians working with DHH adolescents need to understand components contributing to self-esteem to improve identification and mitigate depressive symptoms. These findings were also supported by a study conducted in Australia by Brown and Cornes (2015) who investigated mental health problems of 89 DHH adolescents. Students were educated in a range of educational settings, had varying degrees on hearing loss and used a range of communication modes.

Results revealed that DHH adolescents reported increased symptoms of depression and poor academic performance compared with hearing peers. The broad syndromes were three times more likely to be reported while the narrowband syndromes were between 2 and 7 times more. A binary logistic regression analysis showed that the language used at home was a significant predictor of depression and poor academic performance (Brown & Cornes, 2015).

This finding was supported by Carlsson et al. (2015) whose findings revealed that DHH individuals who develop depression in adolescence were at the risk of experiencing
a number of negative outcomes in academic performance which in adulthood causes a lot of stress when it comes to job opportunities. Likewise, a study was conducted in India by Prabhu (2016) to determine the severity of stress, anxiety, and depression using depression anxiety stress scales in adolescents and young adults with auditory neuropathy spectrum disorder.

The findings showed that depression was a major cause of poor academic performance. These findings were also supported by a study conducted in Nigeria by Ameye et al. (2015). It was a cohort study of 50 DHH adolescents attending special school. Sociodemographic characteristics of self reported deafness, financial condition, psychosocial consequences such as social isolation, denial of privileges, educational attainment, and satisfaction with life were assessed using semi-structured questionnaires.

Results indicated that all respondents had profound hearing loss. Adverse psychosocial consequences were found in this study population. Social isolation was a major source of worry for 70% of the respondents and close to 40% admitted to being angry mainly because of societal attitude towards DHH adolescents. Underachievement was also found 44%. The study concluded that DHH adolescents are faced with economic and psychosocial adverse consequences which are the main causes of depression and academic underperformance.

Consequently, Awori et al. (2010) did a study in Kenya on the relationship between self-esteem and academic achievement of DHH females in selected secondary schools. The sample size was 53 DHH females. Rosenberg self esteem scale was used to measure self esteem dimensions. Results indicated that DHH females had high self esteem but low academic performance. Low performance was associated with irrational beliefs which
emanated from family factors such as socio economic status where females were forced to report late to school because of lack of school fees and other learning materials. In addition, DHH female’s needs were not catered for adequately as personal effects were disregarded. The study recommended counseling strategies to reduce irrational beliefs which lead to depression as a way of improving academic performance.

5.2.4 Efficacy of REBT in mitigating depression and enhance academic performance of DHH adolescents

This objective was examining the effectiveness of REBT intervention in reducing depression with an aim to improve academic performance of DHH adolescents. The experimental group received the REBT treatment while the control group was not given any intervention.

The study findings indicate that there was a significant reduction of depression symptoms at REBT (experimental) group (p=0.037) compared to control group at (p=0.586). This is in agreement with a study conducted by Kumar (2009), which revealed that REBT intervention reduced depressive symptoms experienced by DHH adolescents.

Similarly, these findings were supported by Zhaleh et al. (2014) whose report revealed the effectiveness of REBT in reduction of depression. Likewise, Ugwu (2018) supported these findings by noting that application of REBT has been reported useful counselling strategy in reducing negative emotions and promoting effective parents’ emotional functioning state which in turn help to increase children’s behavior and learning. Notably, 80% of the parents had negative attitude towards their children’s mental retardation. Sadly, 92% of the parents agreed that mentally retarded children were considered burdensome. However, parents were counselled and REBT helped parents to
overcome their emotional and negative attitude to their children who were living with disabilities.

Onuigboet et al. (2018) did a study in Nigeria to examine the impact of REBT intervention on stress levels and irrational beliefs among special education teachers in elementary schools. The sample size was 86 divided in 43 for experimental group and 43 for control group. Respondents were treated in 12 weeks and a followup program was done for 2 weeks. Results showed that experimental group experienced a significant mean decline in stress levels and their beliefs shifted to rational ones. Consequently, it was concluded that REBT was an effective therapeutic modality that can be applied by REBT clinicians for the management of stress. In Kenya, REBT has been effectively used in other areas but not with DHH adolescents. The reason why the researcher was interested in the use of REBT was to reduce depression and enhance personal growth and sustain learning to foster academic performance of DHH adolescents.

5.3 Conclusions

This chapter provides conclusions of the major findings of the study as presented and discussed in the preceding sections. The findings demonstrate that among the deaf in Nairobi County, there are considerable numbers of DHH who suffer from severe depression. One of the factors associated with severity of depression was communication barriers leading to DHHs feeling isolated and stigmatized. The current study revealed remarkable relationship between depression and academic performance of DHH adolescents. The Logit Linear regression analysis revealed the main risk factors of respondents’ academic performance as the mode of communication used, frequency of participants’ caregiver assistance in doing homework, giving extra homework and who the
respondents share their problems with respectively. Further, the study findings revealed that there was association between predictive factors and academic performance; Caregivers attending school organised meetings, encouraging respondents to always work hard, caregiver being role models to respondents, and respondents being taught life skills by caregivers. In addition, the study findings also indicated that the mode of communication used, “how often caregivers assisted DHH adolescents in doing homework and giving of extra homework” were predictive factors to DHH adolescents’ depression. The finding of this study revealed that the line graph shows steeper declines in the depression scores after controlling for the respondents’ level of education. This depicted that REBT intervention had an impact at post-treatments.

5.4 Recommendations

This section of this study is considered important because it illuminates the possible interventions required to address the challenges facing the DHH adolescents.

1. The government should facilitate training of caregivers, teachers and interpreters KSL who handle DHH students. This will ease interpersonal communication and reduce child-parent conflict and depression through sharing and effective expression of their feelings and emotions.

2. Clinical psychologists and those in related fields come up with the most effective approaches -Clinicians should take a bio-psychosocial approach so that the challenges facing the DHH adolescents can be identified and interventions made so as to wholesomely help the DHH persons and reduce depression.
3. The government and other stakeholders should update database for persons who are deaf. This should be done properly so as to capture the correct figures of DHH persons to aid in planning and proper reporting and referencing.

4. Government through the ministry of education having sign language interpreters assigned to deaf students can ensure that the deaf students get opportunities for proper education so that they too can pursue their dreams in careers. It is will also help the educational structure to avoid alienating the DHH by way of instruction such that the students fail to comprehend normal English which is used in instruction of other professions.

5. National policy makers (Ministry of Education/KICD) implement inclusion of sign language in the curriculum taught in schools and exclusion of school based counselors.

6. Schools’ Boards of governors and principles to give guidance to Caregivers on how to be involved in their DHH adolescents's whereabouts especially in academic and mental health issues.

7. Mental health professional working with DHH should be alert and consider screening for depression using KSL tools for somatic symptoms of depression as they adopt the use of REBT because of the visual strength, cognitions and behavior change to reduce depression.

5.5 Recommendations for Further Research.

One of the main limitations of the study was lack of back translated tools that would adequately serve to help the DHH understand the study better. Back translation in this regard meant for example the Beck Depression Inventory into Kenya sign language.

161
and having a sign language interpreter translate it to common English language to check if the initial translation was correctly done. This would ensure reliability and validity of the back-translation. Therefore, the study suggests that further studies be carried out using tools that are translated into sign language and translated back into English.

Communication barrier is a malleable factor that can be addressed with interventions and environmental changes. There are no empirically tested interventions that address communication issues that are unique to the experiences of DHH children, and none addresses these issues in the context of preventive depression. A randomized-controlled preventive depression study is needed to address both the parent and adolescent’s ability to be flexible, considering that the ability to recognize and solve communication breakdowns can serve to improve the relationship and maintain healthy parent-adolescent connection as well as promote positive youth perceived quality of life and prevent depressive disorders.

A longitudinal study that documents trajectory development associated with parent-child communication and depression will also prove to be fruitful. The identification of modifiable risk factors will inform parent-child communication interventions aimed at proactive management of stressors that occur at critical time points, with goals of reducing the risk for depression in DHH individuals and improving healthy communication outcomes earlier in life to promote academic performance.
REFERENCES


Hagen, C. (2016). *Barriers to education for youth with disabilities in Malawi: A qualitative study of policy and practice in urban and rural areas*. Oslo, Norway: Norwegian University.


APPENDICES

Appendix A: Questionnaire

My name is Stella Moraa Osoro Kerongo, a PhD student in Clinical Psychology at Daystar University. I am carrying out a research on Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing adolescents in Selected Public Primary Schools in Nairobi County, Kenya. You have been selected to participate in the current study and I’m requesting you to fill the questionnaire below. Your honest responses to the following questions will greatly enhance the quality of this study. The responses you give will be confidential and only be used for the purpose of this research. I kindly request you to answer ALL the questions. Please tick (√) your response or give the necessary information in the spaces provided. Your honest responses and cooperation is highly appreciated. Please note that the word caregiver refers to your parents, guardian or sponsor.
SECTION 1: SOCIAL DEMOGRAPHIC DATA

1). Age: ………………………………………………………..

2) .Gender  Male  Female  

3). Class  PP1  PP2  One  Two  Three  
Four  Five  Six  Seven  Eight  

4) Indicate marks you attained in the last three terms

Term one:
Marks  Out of

Term two:
Marks  Out of

Term three:
Marks  Out of

5). With whom do you live at home?

<table>
<thead>
<tr>
<th>Both father and mother</th>
<th>Father</th>
<th>Mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grandfather/grandmother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siblings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guardian</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6) Which of these statements is true about your parents?

<table>
<thead>
<tr>
<th>Married</th>
<th>Single</th>
<th>Separated</th>
<th>Divorced</th>
<th>I don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7). Based on your answer in Q6, please answer the following questions

A) Where does father work? Not working □  employed □  Business □

b) Where does mother work? Not working □  employed □  Business □

8). what level of education have your parent’s attained (tick the highest level for each)

<table>
<thead>
<tr>
<th></th>
<th>University</th>
<th>College</th>
<th>Secondary</th>
<th>Primary</th>
<th>did not attend</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Please note that the word caregiver refers to your parents, guardian or sponsor.

1) How do you communicate with your caregiver?

Signs □  Kenya sign language □  writing □  Symbols □

(a) Based on your answer in Q1) above, please tick how the mode of communication has contributed to your academic performance.

Very good □  Good □  Average □  Poor □  Very poor □

2) Who facilitates your learning, for example paying school fees?

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Father and mother</td>
</tr>
<tr>
<td>Father</td>
</tr>
<tr>
<td>Mother</td>
</tr>
<tr>
<td>Sponsor</td>
</tr>
<tr>
<td>Siblings</td>
</tr>
</tbody>
</table>
3) In your opinion, who encourages you to have good performance?

- Mother
- Father
- Sponsor

☐ Any other please
(specify)........................................................................................................

4) Who assists you in doing your private studies when at home?

- Father
- Mother
- Sibling
- Alone

5) How often does your caregiver assist you in doing homework at home?

- Very often
- Often
- Rarely
- Never

6) Does she/he give extra school work when at home?

- Yes
- No

7) Who goes to school to meet the teachers regarding your school performance?

<table>
<thead>
<tr>
<th>Father</th>
<th>Mother</th>
<th>Both mother and father</th>
<th>Grandfather/mother</th>
<th>Sibling</th>
<th>Sponsor</th>
<th>No one</th>
</tr>
</thead>
</table>

188
SECTION 2B: THE TABLE BELOW SHOWS PARTICIPANTS RATING CAREGIVER’S INFLUENCE IN VARIOUS FIELDS OF ACADEMIC PERFORMANCE

Please state the extent to which you Agree/Disagree with the following statements.

Key: SA – Strongly Agree, A – Agree, D- Disagree, SD – Strongly Disagree

<table>
<thead>
<tr>
<th>Rating</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>My caregivers attend all school organized parents meetings</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>When I need assistance in any school work, my caregivers attend</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>promptly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers always encourage me to work hard in school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers attend sign language courses organized by the school</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers are strict on proper use of leisure time at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregiver visits teachers uninvited and demands to know my academic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>progress.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My caregivers are my role models and I follow their way of doing things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Consent Explanation

This study is being conducted by Stellah Osoro Kerongo, a PhD student doing Clinical Psychology at Daystar University. This research is on *Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing adolescents in Selected Public Primary Schools in Nairobi County, Kenya*. The research team would conduct psychological assessments to establish whether your child has depression. You and your child would be required to respond to a few questions on the social-demographic questionnaire as well as on Beck’s Depression Inventory. Your child would be given a chance to ask questions on the study. This study is useful in that its recommendations would be used to help reduce depressive symptoms and increase academic performance. Apart from the above mentioned benefits, there would be no other benefits or financial incentives for taking part in this study.

The exercise would take about 2hrs every week for 3 months. Your child will not be identified; instead he or she will be assigned a number, which will be used as the individual study code for the child, which will be personally held by the researcher. High confidentiality will be observed throughout the study. Collected data will only be disclosed to someone who can help in case your child or someone else is in danger. We have all the necessary approvals, including government approvals for this study to be done, which the researcher will make available to you before the study commences. As the parent/custodian of this child, I am requesting for your permission to include your child in this study. You can withdraw at any time during the course of data collection without any consequences. Attached find a copy of the same for your consideration.

Yours Sincerely,

Stellah Osoro Kerongo

Tel. 0721473361

I have read and understood all the information above and confirm that I am willing to participate in the study.

Participants signature: ________ Date_________

Researcher’s signature: _________ Date_________
Appendix D: Consent to Participate Form (Experimental Group)

Dear Participant,

My name is Stellah Osoro Kerongo, I am a PhD student at Daystar University studying Clinical psychology, and I am conducting a research entitled:

“Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing adolescents in Selected Public Primary Schools in Nairobi County”

You are kindly invited to participate in this study. You will be required to fill in a questionnaire with some personal information and details about yourself. Some psychological tests will also be administered to you where you will be required to answer some questions to measure whether you have depression. I wish to let you know that if you agree to participate in the study, you are free to refuse to answer any question or even withdraw from the study at any time you wish. You will not be penalized in anyway.

If you agree to participate in this study, you will participate in assessment at the start of the study. You will be part of a group which will be administered rational emotive behavior therapy twice a week for a period of three months after which you will be required to answer the follow up questions. Another set of questions will be administered to you after another three months interval. There is a possibility that in the course of the study you may experience some negative emotions triggered from your childhood experiences. If you are affected I will refer you to a counselor for further help.

The benefits of your participating in the study include your getting treatment for free and the results will be used to design an effective program to be implemented in your school and other similar schools countrywide.

All the information that will be collected from this research will be treated with confidentiality and your identity will be protected through data coding. This proposal will be reviewed and approved by Daystar University Ethics Review Board whose mandate is to make sure that people who take part in this research are protected from harm. If you have any questions later, you can contact me on 0721473361 or my supervisor Dr. Alice Munene on 0725354050, Daystar University.

I have read and understood all the information above and confirm that I am willing to participate in the study.

Participants signature: ________ Date_________

Researcher’s signature: _________ Date_________
Appendix E: Consent to Participate Form (Control Group)

Dear Participant,

My name is Stellah Osoro Kerongo, I am a PhD student at Daystar University studying Clinical psychology, and I am conducting a research entitled:

“Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing adolescents in Selected Public Primary Schools in Nairobi County”

You are kindly invited to participate in this study. You will be required to fill in a questionnaire with some personal information and details about yourself. Some psychological tests will also be administered to you where you will be required to answer some questions to measure whether you have depression. I wish to let you know that if you agree to participate in the study, you are free to refuse to answer any question or even withdraw from the study at any time you wish. You will not be penalized in anyway.

If you agree to participate in this study, you will participate in assessment at the start of the study. You will be part of a group which will be administered rational emotive behavior therapy twice a week for a period of three months after which you will be required to answer the follow up questions. Another set of questions will be administered to you after another three months interval. There is a possibility that in the course of the study you may experience some negative emotions triggered from your childhood experiences. If you are affected I will refer you to a counselor for further help.

The benefits of your participating in the study include your getting treatment for free and the results will be used to design an effective program to be implemented in your school and other similar schools countrywide.

All the information that will be collected from this research will be treated with confidentiality and your identity will be protected through data coding. This proposal will be reviewed and approved by Daystar University Ethics Review Board whose mandate is to make sure that people who take part in this research are protected from harm. If you have any questions later, you can contact me on 0721473361 or my supervisor Dr. Alice Munene on 0725354050, Daystar University.

I have read and understood all the information above and confirm that I am willing to participate in the study.

Participants signature: ________ Date_________

Researcher’s signature: _________ Date_________
Appendix F: Research Assistant Confidentiality Form

Title of research:

Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing Adolescents in Selected Primary Schools in Nairobi County, Kenya.

Principal Researcher: Stellah Osoro Kerongo

I, __________________________ (name of research assistant), agree to assist the principal researcher with this study by____________________________ (conducting psychological assessment and providing REBT intervention). I agree to maintain full confidentiality when performing these tasks.

Specifically, I agree to:

1. Keep all research information shared with me confidential by not disclosing or sharing the information in any form with anyone other than the principal researcher.
2. Hold in strictest confidence the identification of any individual that maybe revealed during the course of performing the research responsibilities.
3. Desist from making copies of any raw material in any form unless specifically requested to do so by the principal researcher.
4. Keep all raw data that contains identifying information in any form or format secure while it is under my care. This includes,
   - Keeping digitalized raw data in computer password-protected files and other raw data in a locked file.
   - Closing any computer programs and documents of the raw data when temporarily away from the computer
   - Permanently deleting any email communication containing the data.
5. Give all raw data in any form or format to the principal researcher when I have completed the research tasks;
6. Destroy all research information in any form or format that is not returnable to the principal researcher upon completion of the research responsibilities.

Any violation of this agreement constitute a serious breach of ethical standards and I pledge not to do so.

Research Assistant

_________________________  _____________  __________
Print name  Signature  Date
Appendix G: Data Entry Clerk/Statistician Confidentiality Form

Title of research:

Rational Emotive Behavior Therapy in Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing Adolescents in Selected Primary Schools in Nairobi County, Kenya.

Principal Researcher:

Stella Osoro Kerongo

I, ______________________________ (name of data entry/Statistician), understand that I will access data for data entry and management that is strictly confidential. The participants in this research will reveal the information in good faith so that the information will remain strictly confidential. I agree to;

1. Keep all the research information that will be shared with me confidential by not sharing or disclosing the research information in any form or format.
2. Keep all research information in any form or format secure while it is in my possession.
3. Return all research information in any form to the researcher after completing the research tasks.
4. After consulting with the researcher, erase all research information in any form regarding this research that is not returnable to the researcher for example online information.

Any violation of this agreement will constitute a serious breach of ethical standards and I pledge not to do so.

Data Entry Clerk/Statistician

_________________________  ___________________  ____________
Print name          Signature          Date
Appendix H: Research Schedule

<table>
<thead>
<tr>
<th>Task</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal Development</td>
<td>December 2018</td>
</tr>
<tr>
<td>Proposal Defense</td>
<td>April 2019</td>
</tr>
<tr>
<td>Data Collection Data</td>
<td>May 2019</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>August 2019</td>
</tr>
<tr>
<td>Report Writing</td>
<td>January 2020</td>
</tr>
<tr>
<td>Thesis Defense</td>
<td>May 2020</td>
</tr>
</tbody>
</table>
Appendix I: Beck’s Depression Inventory

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.
Instructions; Please tick (✓) any of the statements which suits you.

1. 0 I do not feel sad.
    1 I feel sad.
    2 I am sad all the time and I can’t snap out of it.
    3 I am so sad and unhappy that I can’t stand it.

2. 0 I am not particularly discouraged about the future.
    1 I feel discouraged about the future.
    2 I feel I have nothing to look forward to.
    3 I feel the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
    1 I feel I have failed more than the average person.
    2 As I look back on my life, all I can see is a lot of failures.
    3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
    1 I don’t enjoy things the way I used to.
    2 I don’t get real satisfaction out of anything anymore.
    3 I am dissatisfied or bored with everything.

5. 0 I don’t feel particularly guilty.
    1 I feel guilty a good part of the time.
    2 I feel quite guilty most of the time.
    3 I feel guilty all the time.

6. 0 I don’t feel I am being punished.
    1 I feel I may be punished.
    2 I expect to be punished.
    3 I feel I am being punished.

7. 0 I don’t feel disappointed in myself.
    1 I am disappointed in myself.
    2 I am disgusted with myself.
    3 I hate myself.
8. I don’t feel I am worse than anybody else.
   1 I am critical of myself for my weaknesses or mistakes.
   2 I blame myself all the time for my faults.
   3 I blame myself for everything bad that happens.

9. I don’t have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I do not carry them out.
   2 I like to kill myself.
   3 I would kill myself if I had a chance.

10. I don’t cry any more than usual.
    1 I cry more than I used to.
    2 I cry all the time now.
    3 I used to be able to cry, but now I can’t cry even if I want to.

11. I am no more irritated by things that I ever was.
    1 I am slightly more irritated now than usual.
    2 I am quite annoyed or irritated a good deal of the time.
    3 I feel irritated all the time.

12. I have not lost interest in other people.
    1 I am less interested in other people than I used to.
    2 I have lost my interest in other people.
    3 I have lost all my interest in other people.

13. I make decisions about as well as I ever could.
    1 I put off making decisions more than I used to.
    2 I have greater difficulty in making decisions more than I used to.
    3 I can’t make decisions all the time.

14. I don’t feel that I look any worse than I used to.
    1 I am worried that I am looking old or unattractive.
    2 I feel there are permanent changes in my appearance that make me feel unattractive.
    3 I believe that I look ugly.

15. I can work about as well as before.
    1 It takes an extra effort to get started at doing something.
    2 I have to push myself very hard to do something.
    3 I can’t do any work at all.
16. 0 I can sleep as well as usual.
1 I don’t sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

17. 0 I don’t get tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost everything.
3 I am too tired to do anything.

18. 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

19. 0 I haven’t lost much weight, if any, lately.
1 I have lost more than five pounds.
2 I have lost more than ten pounds.
3 I have lost more than fifteen pounds.

20. 0 I am no more worried about my health than usual.
1 I am worried about physical problems like aches, pains, upset stomach, or constipation.
2 I am very worried about physical problems and it’s hard to think of much else.
3 I am so worried about my physical problems that I cannot think of anything else.

21. 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to.
2 I have almost no interest in sex.
3 I have lost interest in sex completely.
4
INTERPRETING THE BECK DEPRESSION INVENTORY

Now that you have completed the questionnaire, add up the score for each of the twenty-one questions by counting the number to the right of each question you marked. The highest possible total for the whole test is sixty-three. This means you circled number three on all twenty-one questions.

Becks depression inventory

This depression inventory can be self-scored. The scoring scale is at the end of questionnaire.

Since the lowest possible score for each question is zero, the lowest possible score for the test is zero. This mean you circled zero on each question. You can evaluate your depression according to the table below;

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Levels of Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>These ups and downs are considered normal</td>
</tr>
<tr>
<td>11-16</td>
<td>Mild mood disturbance</td>
</tr>
<tr>
<td>17-20</td>
<td>Borderline clinical depression</td>
</tr>
<tr>
<td>21-30</td>
<td>Moderate depression</td>
</tr>
<tr>
<td>31-40</td>
<td>severe depression</td>
</tr>
<tr>
<td>Over 40</td>
<td>Extreme depression</td>
</tr>
</tbody>
</table>
Appendix J: Beck’s Depression Inventory in Kenya Sign Language

DEPRESSION INVENTORY THIS SELF SCORE POSSIBLE/SCORE SCALE QUESTIONNAIRE ANF FIND/

1 0 ME SAD FEEL NOTHING//
   1. ME SAD FEEL//
   2. ME SAD ALWAYS STOP IMPOSSIBLE//
   3. ME SAD SAME HAPPY NOTHING//

2 0 ME FUTURE DISCOURAGE NOTHING//
   1. ME FUTURE FEEL FEEL DISCOURAGE//
   2. ME FEEL FORWARD LOOK NOTHING//
   3. ME FEEL FUTURE HOPELESS THING THING IMPROVE NOTHING//

3 0 ME FAILURE FEEL NOTHING//
   1. ME FAILURE FEEL MORE AVERAGE PERSON BETTER//
   2. ME LIFE MINE BACK LOOK FAILURE A LOT SEE//
   3. ME COMPLETE FAILURE SELF FEEL//

4 0 ME THING THING SATISFACTION GET SAME TIME PAST//
   1. ME NOW THING ENJOY SMALL PAST A LOT ENJOY//
   2. NOW ME REAL SATISFACTION GET NOTHING//
   3. NOW EVERYTHING SATISFY NOTHING SAME BORE//

5 0 ME GUILTY FEEL NOTHING//
   1. ME GUILTY FEEL TIME MOST//
   2. TIME MOST ME GUILTY FEEL//
   3. ME GUILTY FEEL ALWAYS//

6 0 ME PUNISH FEEL NOTHING//
   1. ME FEEL POSSIBLE PUNISH//
   2. ME PUNISH EXPECT//
   3. ME NOW PUNISH FEEL//

7 0 SELF FEEL DISSAPPOINTED NOTHING//
   1. ME SELF DISAPPOINTED//
   2. ME SELF DISGUSTED//
   3. ME SELF HATE//
8  0 ME FEEL WORSE SAME PEOPLE OTHER/
   1 TIME WEAKNESS SAME MISTAKE ME HAVE/SELF CRITICIAL/
   2 TIME ME FAULTS HAVE SELF BLAME ALWAYS/
   3 TIME THING BAD HAPPEN /ME SELF BLAME

9  0 ME SELF KILL THINK NOTHING/
   1 ME THINK SELF KILL BUT IMPOSSIBLE DO/
   2 ME SELF KILL WANT/
   3 ME CHANCE GET POSSIBLE KILL SELF/

10 0 NOW ME CRY SAME PAST/
   1 PAST ME CRY SMALL/NOW ME CRY MORE MORE/
   2 NOW ME CRY ALWAYS/
   3 PAST ME CRY POSSIBLE/NOW CRY WANT BUT IMPOSSIBLE/

11 0 TIME PAST THING MANY IRRITATE MORE/NOW NOTHING/
   1 NOW IRRITATE SMALL THAN USUAL
   2 ANNOYED/IRRITATE PAST BIG/
   3 TIME ALL IRRITATE PAST FEEL/

12 0 INTEREST OTHER PEOPLE LOSE BAD/
   1 NOW INTEREST PEOPLE OTHER ME HAVE SMALL/
   2 ME PEOPLE OTHER INTEREST LOSE A LOT/
   3 ME PEOPLE OTHER INTEREST LOSE FINISH/

13 0 ME DECISION BEST MAKE/
   1 PAST ME DECISION/
   2 PAST ME DECISION MAKE EASY/NOW HARD
   3 NOW ME DECISION MAKE NOTHING/

14 0 ME FEEL WORSE LOOK NOTHING/
   1 ME WORRY POSSIBLE OLD SAME UNATTRACTIVE L00K/
   2 ME FEEL POSSIBLE PERMANENT CHANGE APPEARANCE
       MINE HAVE/UNATTRACTIVE ME MAKE/
   3 ME BELIEVE UGLY LOOK/

15 0NOW ME WORK ABOUT WELL SAME BEFORE/
   1 TIME ME WANT SOMETHING START DO/EFFORT EXTRA PUT
       MUST/
   2 TIME ME ANYTHING WANT DO/SELF/PUSH MUST/
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ME WORK IMPOSSIBLE//</td>
</tr>
<tr>
<td>16</td>
<td>0 ME SLEEP WELL ALWAYS SAME USUAL//</td>
</tr>
<tr>
<td></td>
<td>1 PAST ME SLEEP WELL /NOW SLEEP WELL NOTHING//</td>
</tr>
<tr>
<td></td>
<td>2 ME WAKE HOUR 1-2 EARLIER /SLEEP AGAIN HARD//</td>
</tr>
<tr>
<td></td>
<td>3 ME WAKE HOUR SEVERAL EARLIER AGAIN SLEEP IMPOSSIBLE//</td>
</tr>
<tr>
<td>17</td>
<td>0 ME TIRED MORE NOTHING//</td>
</tr>
<tr>
<td></td>
<td>1 NOW TIRED ME A LOT GET/PAST TIRED SMALL//</td>
</tr>
<tr>
<td></td>
<td>2 ME WORK SMALL DO/TIRED GET//</td>
</tr>
<tr>
<td></td>
<td>3 ME TIRED WORK IMPOSSIBLE //</td>
</tr>
<tr>
<td>18</td>
<td>0 APPETITE MINE WORSE SAME ALWAYS//</td>
</tr>
<tr>
<td></td>
<td>1 PAST APPETITE MINE GOOD/ NOW BAD//</td>
</tr>
<tr>
<td></td>
<td>2 APPETITE MINE NOW WORSE//</td>
</tr>
<tr>
<td></td>
<td>3 ME NOW APPETITE HAVE NOTHING//</td>
</tr>
<tr>
<td>19</td>
<td>0 LATELY ME WEIGHT MUCH LOSE NOTHING//</td>
</tr>
<tr>
<td></td>
<td>1 ME POUND FIVE OR MORE LOSE FINISH//</td>
</tr>
<tr>
<td></td>
<td>2 ME POUND TEN OR MORE LOSE FINISH//</td>
</tr>
<tr>
<td></td>
<td>3 ME POUND FIFTEEN OR MORE LOSE FINISH//</td>
</tr>
<tr>
<td>20</td>
<td>0 PAST HEALTH MINE WORRY/NOW WORRY SAME//</td>
</tr>
<tr>
<td></td>
<td>1 ME PHYSICAL PROBLEM LIKE ACHE/PAIN/STOMACH UPSET CONSTIPATION WORRY WORRY //</td>
</tr>
<tr>
<td></td>
<td>2 ME PHYSICAL PROBLEM WORRY THING OTHER THINK IMPOSSIBLE//</td>
</tr>
<tr>
<td></td>
<td>3 ME PHYSICAL PROBLEM WORRY THING OTHER THINK NOTHING//</td>
</tr>
<tr>
<td>21</td>
<td>0 ME SEX INTEREST CHANGE NOTICE BADO//</td>
</tr>
<tr>
<td></td>
<td>1 PAST ME SEX INTEREST HAVE/NOW SEX INTERSET SMALL//</td>
</tr>
<tr>
<td></td>
<td>2 ME SEX INTEREST SMALL SMALL//</td>
</tr>
<tr>
<td></td>
<td>3 ME SEX INTEREST HVE NOTHING//</td>
</tr>
</tbody>
</table>

BECK DEPRESSION INVENTORY INTERPRET
NOW YOU QUESTIONNAIRE COMPLETE/SCORE TWENTY ONE
QUESTION NUMBER RIGHT HAND YOU MARK COUNT/THEN
ADD/HIGHEST POSSIBLE TEST GET SIXTY-THREE//THIS MEAN
NUMBER THREE CIRCLE QUESTION ALL TWENTY ONE//LOWEST
SCORE POSSIBLE ZERO/THIS MEAN YOU ZERO CIRCLE QUESTION
ALL//DEPRESSION YOUR EVALUATE TABLE BELOW FOLLOW///

<table>
<thead>
<tr>
<th>SCORE ALL</th>
<th>DEPRESSION LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>UP AND DOWN THIS NORMAL</td>
</tr>
<tr>
<td>CONSIDER</td>
<td>MOVE DISTURBANCE MILD</td>
</tr>
<tr>
<td>11-16</td>
<td>DEPRESSION CLINICAL</td>
</tr>
<tr>
<td>17-20</td>
<td>DEPRESSION MODERATE</td>
</tr>
<tr>
<td>BORDERLINE</td>
<td>DEPRESSION SEVERE</td>
</tr>
<tr>
<td>21-30</td>
<td>DEPRESSION A LOT A LOT</td>
</tr>
<tr>
<td>31-40</td>
<td></td>
</tr>
<tr>
<td>OVER 40</td>
<td></td>
</tr>
</tbody>
</table>

203
Appendix K: REBT Depression Manual

Managing depression using Rational Emotive Behavior Therapy (REBT)

Therapist Research Guide

This REBT depression manual/protocol is an evidence-based one, tested in a randomized clinical trial investigating the relative efficacy of rational-emotive behavior therapy (REBT), cognitive therapy (CT), and pharmacotherapy (fluoxetine) in the treatment of 170 outpatients with non-psychotic major depressive disorder (David et al., 2008). Patients were randomly assigned to one of the following: 14 weeks of REBT, 14 weeks of CT, and 14 weeks of pharmacotherapy. The continuous outcome measures used were the Hamilton Rating Scale for Depression (HRSD) and the Beck Depression Inventory (BDI); the categorical measure was SCID. In the REBT condition, at 14 weeks, the response rates (HRSD).

Aim of the best REBT depression manual

The aim of this manual is to teach you a variety of skills to help you manage any depressive symptoms of depression-related problems you might experience. More specifically, we are going to teach how to use Rational Emotive Behavior Therapy (REBT).

Research has found that approximately 75% of patients who undergo REBT will experience improvement in their depression symptoms. This manual will teach you how to help yourself feel less depressed and more energetic, and to cope as best as you can with any symptoms you may experience. Research has shown that the skill we’ll teach you are helpful in managing emotional distress.
1. Definitions:

(a) Depression basics

[This brief presentation is based on free/public educational texts from http://www.depression.com (1977-2008 GlaxoSmithKline: paragraphs 1, 2, 3, and 4) and http:www.nimh.nih.gov/health/publictions/depressions/depression-a-treatable-illness.shmtl (paragraph 2)].

“Some people say that depression feels like a black curtain of despair coming down over their lives. Many of them feel like they have no energy and can’t concentrate. Others feel irritable all the time for an apparent reason. The symptoms vary from person to person, but if you feel “down” “for more than two weeks, and these feelings are interfering with your daily life, you may be clinically depressed.” (GlaxoSmithKline)

“A depressive disorder is a problem that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things. A depressive disorder is not the same as passing blue mood. It is not a sign of personal weakness or a condition that can be wounded or wished away. People with a depressive illness cannot merely “pull themselves together “and get better. Without treatment, symptoms can last for weeks, months, or, years. Appropriate treatment, however can help most people who suffer from depression.” (NIH).

“Most people who have gone through one episode of depression will, sooner or later, have another one. You may begin to feel some of the symptoms several weeks before you develop a full-blown episode. Learning to recognize these early triggers or symptoms
and working with your therapist will help to keep the depression from worsening.’” (GlaxoSmithKline)

“Most people with depression never seek help, even though most of them would respond to treatment. Treating depression is especially important because it affects you, your family, and your work. Some people with depression try to harm themselves in the mistaken belief that the way they feel will never change. Depression is a treatable disorder.” (GlaxoSmithKline)

(b) What is Rational Emotive Behavior Therapy (REBT)?

1. Rational Emotive Behavior Therapy (REBT) is the first form of cognitive behavior therapy (CBT) and was created by Dr. Albert Ellis in 1995. According to the REBT model, people experience undesirable activating events, about which they have rational beliefs (RBs) and irrational beliefs (IBs). These beliefs then lead to emotional, behavioral, and cognitive consequences. Rational beliefs (i.e. Helpful/effective beliefs) lead to functional consequences with irrational beliefs (i.e. Unhelpful/negative beliefs) lead to dysfunctional consequences. Clients who engage in REBT are encouraged to actively dispute their IBs and to assimilate more efficient, adaptive and rational beliefs, with a positive impact on their emotional, cognitive and behavioral responses (Ellis, 196; 1944; Walen et al., 1962). Thus REBT is a psychological theory and treatment consisting of a combination of three different types of techniques (cognitive, behavioral, and emotive) you can use to help yourself feel better physically and emotionally, and to engage in healthier behaviors. What are Cognitive Techniques?
Cognitive techniques are specific strategies to change or modify unhelpful and/or negative thoughts concerning a particular event. (For example, learning to change one’s thoughts to cope better with one’s depression)

2. What are behavioral techniques?

Behavior techniques involve learning practical techniques that help you to cope in demanding or stressful situations, such as depression and/or loss. Examples of behavioral strategies include learning how to plan and manage your daily schedule, and learning how to distract yourself from negative thoughts.

3. What are Emotive Techniques?

Emotive techniques are designed to help you change your negative thought by emotional means. Humorous methods, poems, songs etc. generate feelings that help challenge and change negative thoughts.

3. Managing Depression with Cognitive Techniques: The power of our Thoughts:

Although we may not always be aware of our thoughts, they nevertheless can have a strong effect on how we feel and behave in response to a particular situation of event.

(a) Re-learning our A-B-Cs:

According to the cognitive theory, the effect that our thoughts can have on our physical, behavioral and emotional responses to a particular situation can be illustrated using the following diagram:
A=Activating events or situation that we experience

B=Beliefs or thoughts regarding the situation

C=Consequences: how we feel or act based on these beliefs

Let’s illustrate this model using an example:

Person 1: A (Activating situation) = A friend does not return your phone call

B (Beliefs/thoughts) = “I must have done something to upset them. I am such a horrible person.”

C (Consequences/Effect) = Anxious, upset, depressed

Person 2: A (Activating situation) = A friend doesn’t return your phone call

B (Beliefs/thoughts) = “They’re probably just really busy, and haven’t had time to get back to me yet.

The above example shows how two people may experience the same situation (e.g., having a friend not return one’s telephone call), but have very different reactions to the event based on how they interpret and evaluate the situation according to their thought and beliefs.

(b) How to think in a more positive and more rational way – The alphabet approach (A-B-C-D-E-F):

In this section, we’ll describe how to use the depression A-B-C-D-F Self Help forms we have included at the end of this manual.

It might be helpful if you look at the form we filled out together while you read through this section, in order to review our approach.
Recommendation: Learning to observe and change one’s thoughts takes practice. Like any new skill we learn (e.g., riding a bike, or learning to program our VCR), the more we practice, the better we get. Therefore, we recommend that you complete at least one of these forms per day. Blank copies of this form are located at the end of this booklet. One of our research staff would collect these forms from you during the course of your treatment.

If you need extra forms at any point, just ask our research staff.

Ok, now let’s begin

Let’s start at the very beginning – A’s (Activating Events)

On the top of the form, on the left hand side, you would see a box labeled “A (Activating Events).”

In this box, we like you to write about an upsetting event that happened to you today. We have provided some examples of upsetting events below the box, you should fill in examples that are personal to you.

We like to particularly encourage you to focus on monitoring the times when you feel particularly sad or when you are tired/fatigued.

If there is a day where nothing particularly upsetting happens, we would like you to fill in this “A” box with either (a) an upsetting

The treatment is based on the technique and descriptions in the REBT manuals (Ellis & Grieger, 1977; Wallen, Giuseppe, Dryden 1922). After explaining the basic rules of therapy (scheduling, confidentiality, etc.) rationale of REBTS and the ADCDE model, the goals of
REBTS are discussed with the patients. The overall elegant REBT treatment is focused on the irrational beliefs mediating depressive symptoms: Demandingness (DEM), self-downing (SD), awful zing (AFW) and low frustration tolerance (LFT). Cognitive (i.e. disputation), behavioral and emotive techniques would be used to change the target irrational beliefs. Automatic thoughts and faulty inferences are not the focus of intervention. Also, distinctive elegant REBT strategies would be focused on (1) reducing secondary problems (2) promoting unconditional self-acceptance; and (3) focusing on the identification and modification of DEM as the central irrational belief involved in depression. In REBT, if DEM is not readily recognizable among cognition collected as homework as well as verbalization during therapy sessions, its presence is inferred from its derivate (I.e., self-downing, awful zing, and low frustrations tolerance). The hypothesis regarding the presence of DEM is tested by asking patients about it directly [e.g., “it is awful that I did not pass the exam.” (Af\text{f}ul zing); therapist: “it sounds like you had to pass that exam, right?” (DEM)]. However, the disputation of inferred DEM is made only if the patient accepts the clinical conceptualization including DEM.

The REBT intervention consists of a 14 weeks clinical trial [12 weeks of full treatment and 2 weeks of follow-up meetings (one meeting each week) focused on the therapy termination], involving a maximum of 20 individual 50-minute therapy sessions.

Weeks 1-4 (initial phase: 2 sessions each week)
- Session 1 (introduction)
  - General clinical conceptualization (for example using an integrative stress-vulnerability bio-psycho-social-cultural mode), based on the clinical
diagnosis/assessment (previously collected information) and clinical interview

- Building a therapeutically relationship (empathy, collaboration, congruence, unconditional acceptance of patient as person)
- REBT education and Treatment expectations
- Problem list

Note: the order to the components targeted in the therapy process could vary among patients; also, the build of therapeutically relationship starts from the first meeting with patients and the check of its status continues during the whole psychotherapy process.

Session 2-8

- Each problem from the list is approached based on the ABC(DEF) model of REBT

Weeks 5-8 (middle phase: 2 session each week)

Session 9-16

- Working toward strengthening the patients rational beliefs and weakening the irrational beliefs
- Encourage the patient to see the links between problems, particularly those which are characterized by common irrational beliefs

Weeks 9-12 (final phase: 1 session each week)

Session 17-20

- Prepare patients for the task of becoming his/her future therapist
- Discuss dependency problems and relapse prevention
Structure of the first session (this is similar to other cognitive-behavior therapy approaches, like cognitive therapy):

- Starting to build an emphatic and collaborative therapeutic relationship
- Setting the agenda (and providing a rationale for doing so)
- Doing a mood check, including objective scores
  - Briefly reviewing the presenting problems and obtaining an update (since evaluation)
- Identifying problems and setting goals
  - Educating the patient about the REBT model
  - Eliciting the patients expectations for therapy
  - Educating the patient about his/her disorder and psychotherapy process
- Setting the homework
- Providing a summary and eliciting feedback

Structure of session two and beyond (this is similar to other cognitive-behavior therapy approaches, like cognitive therapy):

- Checking and maintaining the therapeutically relationship
  - Brief update and check on mood (and medication, alcohol, and/or drug use etc.)
- Bridge from previous session
- Setting the agenda
- Review of homework
  - Discussion of issue on the agenda, setting new homework, and periodic summaries
- Final summary and feedback

Fundamental aspects to follow during REBT intervention:
The cognitive conceptualization of the problem, based on the ABC model

The use of a large repertoire of cognitive, behavior, and emotive techniques to change the irrigational beliefs into rational beliefs

The steps of REBT intervention: (1) behavioral activation; (2) focus on changing specific irrational/rational beliefs; and (3) focus on changing general rational and irrational beliefs. After this process, there could also be a focus on problem solving, if necessary, change the activating events. In some cases (e.g., crisis situation), during the standard REBT, a complementary direct focus on coping skills might be necessary to directly target the consequences of irrigational beliefs (e.g., strong feelings).

The use of homework

A special focus on DEM, promotion unconditional self-acceptance, and reducing secondary disturbances

3. Definitions: (a) Depression Basics [This brief presentation is based on the free/public educational texts from http://www.depresion.com © 1997-2008 GlaxoSmithKline: paragraphs 1, 3, and 4) and http://www.nimh.nih.gov/health/publications/depression-a-treatable-illness.shtml (paragraph 2)] “Some people say that depression feels like a black curtain of despair coming down over their lives. Many of them feel like they have no energy and can't concentrate. Others feel irritable all the time for no apparent reason. The symptoms vary from person to person, but if you feel "down" for more than two weeks, and these feelings are interfering with your daily life, you may be clinically depressed.” (GlaxoSmithKline). “A depressive disorder is a problem
that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things. A depressive disorder is not the same as a passing blue mood. It is not a sign of personal weakness or a condition that can be wished away. People with a depressive illness cannot merely "pull themselves together" and get better. Without treatment, symptoms can last for weeks, months, or years. Appropriate treatment, however, can help most people who suffer from depression.” (NIH).

“Most people who have gone through one episode of depression will sooner or later, have another one. You may begin to feel some of the symptoms of depression several weeks before you develop a full-blown episode. Learning to recognize these early triggers or symptoms and working with your therapist would help to keep the depression from worsening.” (GlaxoSmithKline). “Most people with depression never seek help, even though most of them would respond to treatment. Treating depression is especially important because it affects you, your family, and your work. Some people with depression try to harm themselves in the mistaken belief that the way they feel will never change. Depression is a treatable disorder.” (GlaxoSmithKline).

What is Rational Emotive Behavior Therapy (REBT)?

Rational Emotive Behavior Therapy (REBT) is the first form of cognitive behavior therapy (CBT) and was created by Dr. Albert Ellis in 1955. According to the REBT model, people experience undesirable activating events, about which they have rational beliefs (RBs) and irrational beliefs (IBs). These beliefs then lead to emotional, behavioral, and cognitive consequences. Rational beliefs (i.e.,
helpful/effective beliefs) lead to functional consequences, while irrational beliefs (i.e., unhelpful/negative beliefs) lead to dysfunctional consequences. Clients who engage in REBT are encouraged to actively dispute their IBs and to assimilate more efficient, adaptive and rational beliefs, with a positive impact on their emotional, cognitive, and behavioral responses (Ellis, 1962; 1994; Walen et al., 1992). Thus, REBT is a psychological theory and a treatment consisting of a combination of three different types of techniques (cognitive, behavioral, and emotive) you can use to help yourself feel better physically and emotionally, and to engage in healthier behaviors.

What are Cognitive Techniques?
Cognitive techniques are specific strategies to change or modify unhelpful and/or negative thoughts concerning a particular event. (For example, learning to change one’s thoughts to cope better with one’s depression).

What are Behavioral Techniques?
Behavior techniques involve learning practical techniques that help you to cope in demanding or stressful situations, such as depression and/or loss. Examples of behavioral strategies include learning how to plan and manage your daily schedule, and learning how to distract yourself from negative thoughts.

What are Emotive Techniques?
Emotive techniques are designed to help you change your negative thoughts by emotional means. Humorous methods, poems, songs etc. generate feelings that help challenge and change negative thoughts.

Managing Depression with Cognitive Techniques: The Power of Our Thoughts
Although we may not always be aware of our thoughts, they nevertheless can have a strong effect on how we feel and behave in response to a particular situation or event.

Re-learning our A-B-Cs:

According to the cognitive theory, the effect that our thoughts can have on our physical, behavioral and emotional responses to a particular situation can be illustrated using the following diagram:

A = Activating event or situation that we experience
B= Beliefs or thoughts regarding the situation
C = Consequence: How we feel or act based on these beliefs

How to think in a more positive and more rational way. The alphabet approach (A-B-C-D-E-F):

In this section, we’ll describe how to use the Depression A-B-C-D-E-F Self Help forms we have included at the end of this manual.

It might be helpful if you look at the form we filled out together while you read through this section, in order to review our approach.

Recommendation: Learning to observe and change one’s thoughts takes practice. Like any new skill we learn (e.g., riding a bike, or learning to program our VCR), the more we practice, the better we get. Therefore, we recommend that you complete at least one of these forms per day. Blank copies of this form are located at the end of this booklet. One of our research staff would collect these forms from you during the course of your treatment.

Let’s start at the very beginning –
A’s (Activating Events)

• On the top of the form, on the left hand side, you would see a box labeled “A (Activating Events).”

• In this box, we like you to write about an upsetting event that happened to you today. We have provided some examples of upsetting events below the box, but you should fill in examples that are personal to you.

• We like to particularly encourage you to focus on monitoring the times when you feel particularly sad or when you are tired/fatigued.

• If there is a day where nothing particularly upsetting happens, we like you to fill in this “A” box with either (a) an upsetting event that happened to you in the past, or (b) an upsetting event you’ve made up.

C’s – Consequences following the events

• On the top of the form, on the right hand side, you will see a box labeled “C (Consequences)”.

• In this box, we like you to write the consequences of the event.

• There can be three types of consequences. You may experience one, two, or all three of them:

  Unhealthy negative feelings. Below the box, we have included a few examples of unhealthy negative feelings (e.g., depressed mood, fear, rage). However, we encourage you to write in whatever words best describe your experience.

  Unhelpful behaviors. Below the box, we have included some examples of unhelpful behaviors (e.g., social isolation). These are things you do that are unproductive or harmful in some way.
Negative Physical Consequences of Distress.

When people experience an upsetting event, they may experience some physical symptoms. For example, if you argue with a friend, you may find yourself flushed, hot, or shaking. We have listed some examples of physical consequences below the box, but again, please write any physical reactions you experience.

Note: Although many physical symptoms can be caused or worsened by stress, while you are in treatment, all physical symptoms should be taken seriously and discussed with your treatment team.

The Keys to Change - B’s (Negative or Unhelpful Beliefs)

• As we have shown earlier, even though it may seem like an upsetting event (A) leads you to feel upset (C), this is not 100% true.
• In reality, it is not the event itself that upsets you, it is your negative or unhelpful beliefs (B’s) about the event that upset you.
• So how do you identify your negative or unhelpful beliefs?
• See if your beliefs fall into any of the following categories:
  o Demands – Check to see if your thoughts contain the words “must,” “should,” or “ought”. For example, you might think, “I must absolutely be able to do all of my errands today and I cannot accept not doing it!” or, you might think “Life should be fair and I cannot accept otherwise.”
  o Awful zing/Catastrophizing – Check to see if your thoughts involve words like “awful,” “horrible,” “catastrophic”, or “terrible.” For example, you might think, “I had to take two naps today, and that’s AWFUL! This is the worst thing ever! I’m usually active all day long.”
  o Frustration Intolerance – Check to see if your
thoughts include “I can’t stand this!” or the word “unbearable.” For example, you might think, “I can’t stand being depressed like this!”

- **Self-Downing** – Check to see if you’re calling yourself names, being too critical of yourself, or beating up on yourself. Also, check to see if you’re basing your self-worth on one or two minor things. For example, you might think, “I was too depressed to take care of my duties. I’m an insensitive and a terrible person.”

- **Other-Downing** – Check to see if you’re being too critical of or beating up on others, or basing your entire judgment of them on one or two minor things. For example, you might think, “He/she did not do his/her duties. He/she is totally insensitive and useless.”

- **Life-Downing** – Check to see if you’re judging all of your life as bad, just because it’s not perfect. For example, you might think “Life is worthless because I feel so worn out.

Remember, negative thoughts are those thoughts that make us feel and/or behave in a negative, hurtful, or unpleasant manner (e.g., feeling depressed, or angry and being short-tempered).

- Once you recognize the negative belief you have about the situation, please write it in the “B” box

D’s – Debating your Negative Beliefs

After you recognize your negative or unhelpful thoughts, the next step is to DEBATE or challenge them emphatically. There are lots of different ways you can do this.

- First, you can ask yourself, “Where is holding this belief getting me? Is it helpful, or is it getting me into trouble?” For example, if your belief leads you to feel upset
(e.g., to cry, to feel depressed), to do things that are unhelpful or harmful to you (e.g., stop socializing with friends, not following through on treatment recommendations), or to physically feel worse (e.g., to feel more tired), then you might decide that your belief is unhelpful.

• Second, you can ask yourself, “Where is the evidence to support my negative belief? Is it logical?” For example, you may think, “I CAN’T STAND feeling so tired. But if I stop, and really consider this, I realize I can stand it. I’m still waking up every morning; I’m still taking care of my medical appointments, etc. So even though I may not like feeling so tired, I can stand it.”

• Please write in box D what you said to yourself to debate and dispute your negative thoughts.

E’s – Effective/Helpful Beliefs

• Once you have successfully debated against your negative beliefs, you are ready to replace them with new more effective or more helpful beliefs. Healthier beliefs may sound like one of the following: Preferences – These are a healthier, more rational alternative to demands. Preferences are when you wish for something, or want it very badly, but do not demand that it must be so. For example, you might think, “I really wish I had the REBT Depression Manual/Protocol – BBU, (David et al. 2004), 17 energy I used to have, and I am doing my best to have it, but I can accept that sometimes the things are not the way I want them to be” instead of saying, “I MUST feel exactly the way I did before I got depressed, otherwise I cannot accept it.”

   o Anti-Awful zing – This is a healthier, more rational alternative to awful zing. This is when you can recognize that a situation is very bad, without
thinking it is 100% AWFUL. For example, you might think, “Being too tired to go to work 5 days a week is really bad, but not the worst thing ever; at least I know this won’t last forever, and staying at home does give me more time to catch up with my friends,” instead of thinking “Feeling this tired is AWFUL, the worst thing possible!”

High Frustration Tolerance – This is a healthier, more rational alternative to frustration intolerance. This is when you realize that even though you may find a situation very difficult, you can stand it. For example, you might think, “I hate feeling so depressed, but I’ll just keep finding new ways to cope with it, and I’ll keep going!” instead of thinking “I can’t stand feeling so depressed! It’s unbearable!”

Anti-Self-Downing – This is a healthier, more rational alternative to self-downing. This is when you are able to accept yourself and approve of yourself, even when you’re not perfect. So for example, you might think, “Ok, I’m not handling the depressed mood as well as I like. I’m usually such a strong person, and now I find myself often nervous. But I recognize that I’m still a good, worthwhile person, even if I’m not as strong as I thought.” This thought is a more rational, positive alternative than calling yourself names like, “I’m a weak, terrible person.”

Anti-Other-Downing – This is a healthier, more rational alternative to other downing. This is when you’re able to accept others, regardless of mistakes they might have made, or things they might have done to upset you. For example, you might think, “I’m pretty upset at my partner for not listening to me. But I recognize he/she is still generally a person, who does lots of great things for me.” This is an alternative to thinking “He/she is not a good listener, and that makes him/her a
horrible person.”

Anti-Life-Downing – This is a healthier, more rational alternative to life-downing. This is when you’re able to be accepting of how your life is, even when it is not exactly as you like it to be. For example, you might think, “This isn’t how I planned for my life to be, but I recognize that life is a mixed bag, full of good as well as bad events,” instead of thinking “Life is meaningless and useless now that I have depression.”

F’s – New More Functional Emotions and Behaviors

Now you’re ready to see the results of all your hard work! • By changing your negative beliefs into more helpful ones, you should now: o Feel better emotionally! § For example, you may feel more positive (happier, calmer, more relaxed), or less strongly negative (e.g., disappointed/sad vs. depressed, annoyed vs. furious) emotions. Behave in a more helpful way! For example, you may exercise, or socialize with friends, or pursue a hobby. Feel better physically! For example, you might feel more energetic or have less muscle tension.
Appendix: J: Ethical Clearance

Daystar University Ethics Review Board

Our Ref. DU-ERR/30/05/ 2019 /00297
Date: 30-05-2019

Stellah Mora Osoro
Dear Stellah,

Rational Emotive Behaviour Therapy for Mitigating Depression and Enhancing Academic Performance of Deaf and Hard of Hearing Adolescents in Selected Primary Schools in Nairobi County, Kenya

Reference is made to your request dated 10-05-2019 for ethical approval of your proposal by Daystar University Ethics Review Board.

We are pleased to inform you that ethical review has been done and approval granted. In line with the research projects policy, you will be required to submit a copy of the final research findings to the Board for records.

This approval is valid for a year from 30-05-2019

This approval does not exempt you from obtaining a research permit from the National Commission for Science, Technology and Innovation (NACOSTI).

Yours sincerely,

Mrs. Purity Kiambi,
Secretary, Daystar University Ethics Review Board
Appendix K: Letter of Introduction from Daystar University

30th May 2019

National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
Nairobi
KENYA

Dear Sir/Madam

RE: STELLA MORAA OSORO (14-2139)

The above named is a student in the PhD in Clinical Psychology program at Daystar University, Nairobi Campus.

She has completed her coursework for the doctoral program, defended her PHD proposal and done corrections as recommended by examiners and is now ready to go to the field to collect data.

Her topic of study is ‘Rational emotive behavior therapy for mitigating depression and enhancing academic performance of deaf and hard of hearing adolescents in selected primary schools in Nairobi County, Kenya’.

She is hereby authorized by the University to carry out her study by collecting data from the field. She requires your authorization such that she can be able to access and identify her target population.

Thank you in advance for your willingness to give us this opportunity. We are truly grateful for your partnership in this, and for your institution’s contribution in the education of Daystar University students.

If you have any questions, please do not hesitate to contact me.

Yours faithfully,

Dr. Alice K. Mungai
COORDINATOR, PhD IN CLINICAL PSYCHOLOGY PROGRAM
P. O. Box 44400-00100
NAIROBI, KENYA.
Appendix L: Research Permit

IS TO CERTIFY THAT:

STELLAH MORAA OSORO

DAYSTAR UNIVERSITY, 0-200

has been permitted to conduct

research in Nairobi County

The topic: RATIONAL EMOTIVE

CIVIOR THERAPY FOR MITIGATING

TRANSPORTATION OF DEAF AND

Hearing Adolescents in

Nairobi County, Kenya:

The period ending:

June, 2020

Permit No.: NACOSTI/P/19/22167/31002
Date of Issue: 19th June, 2019
Fee Received: Ksh 2000

Signed by:

Director General

National Commission for Science,
Technology & Innovation
Appendix M: Research Approval by Joseph Kangethe Primary School

Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Ref: RCE/NRB/GEN/1/VOL. 1

DATE: 25th June, 2019

Stellah Moraa Osoro
Daystar University
P.O. Box 44400-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "Rational emotive behaviour therapy for mitigating depression and enhancing academic performance of deaf and hard of hearing adolescents in selected primary schools in Nairobi County, Kenya".

This office has no objection and authority is hereby granted for a period ending 17th June, 2020 as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

Regional Director of Education

Kinoti Kiogora
For: Regional Director of Education
NAIROBI

C.C. Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

226
Appendix N: Research Approval by Aga Khan Primary School

Republic of Kenya

Ministry of Education
State Department of Early Learning and Basic Education

Telegram: ‘SCHOOLING’, Westlands
Telephone:
When replying please quote
Our Ref:

The Head Teacher
Aga Khan Primary
Westlands Sub-County

RE: Research Authorization
The bearer of this Letter, Stella Moraa Osoro, of Daystar University has been authorized to carry out research on “Rational emotive behaviour therapy for mitigating depression and enhancing academic performance of deaf and hard of hearing adolescents in selected primary schools in Nairobi County, Kenya”.
The research is Up to a period ending 7th June, 2020.

Kindly accord him the necessary assistance.

PHILIP K. CHIRCHIR
SUB-COUNTY DIRECTOR OF EDUCATION

Sub-County Director of Education
Westlands Sub-County
P.O. Box 13788-00800, Nairobi

Sign: ____________________________ Date: ____________________________

227
Appendix O: Biodata Report

Stellah Osoro Kerongo is a clinical psychologist, trainer and mentor. I have passion in psychological assessment and diagnosis of mental illnesses particularly in adolescents and children.

Academic qualification

Am a graduate of Bachelor of commerce, Finance Option from Egerton University. BA in Psychology from Egerton University, Higher diploma in Kenya Sign Language from Nairobi University. I have a master’s degree in counseling Psychology from Daystar University

Work Experience

I work at Kenya power as a customer relations officer
### Appendix P: Plagiarism Report

<table>
<thead>
<tr>
<th>Source</th>
<th>Similarity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ir.cuea.edu</td>
<td>1%</td>
<td>Internet Source</td>
</tr>
<tr>
<td>worldwidescience.org</td>
<td>1%</td>
<td>Internet Source</td>
</tr>
<tr>
<td>academic.oup.com</td>
<td>1%</td>
<td>Internet Source</td>
</tr>
<tr>
<td>Submitted to Daystar University</td>
<td>1%</td>
<td>Student Paper</td>
</tr>
<tr>
<td>link.springer.com</td>
<td>&lt;1%</td>
<td>Internet Source</td>
</tr>
<tr>
<td>pdfs.semanticscholar.org</td>
<td>&lt;1%</td>
<td>Internet Source</td>
</tr>
</tbody>
</table>
Stellah Osoro dissertation - 02.11.2020
by Stellah Osoro

Submission date: 02-Nov-2020 12:26PM (UTC+0300)
Submission ID: 143022450
File name: Stellah_Osoro_dissertation__02.11.2020.docx (813.67K)
Word count: 48240
Character count: 271972