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I, Santa Misra, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Santa Misra.

31st January 2019 **(Santa Misra)**

Publisher

EDITORIAL

As usual the OJSS has stepped in to it's publication of January, 2019 ,Vol. -6, issue -1, with article drawn from a wide range of disciplines throughout the World. This volume has given its importance to clinical issues, like Schizophrenia, Autism, Hearing impairment and some important suggestions about how to put them within our control.

This issue also focused on Caretaker & Parental burden to deal with children with autism, and Quality Of Life (QOL) in Schizophrenia. Further some of the socio cultural issues, Academic issues, and scientific modulation (SIMV-LAB) at human behaviour have also been focused.

I am also being privileged to introduce current World issues relating to Bioethics & Gerontology through the paper from Japan.

With these objectives the Odisha Journal of Social Science takes its new shape congratulating the authors who have contributed their valuable views to this publication & in making this publication a successful one.

Santa Misra.

(Santa Misra)

PRACTICUM COURSE DESIGN BY VIRTUAL SIMU-LAB: AN INCLUSIVE EFFORT FOR HEARING IMPAIRMENT

*** Debasish Chatterjee**

ABSTRACT

Inclusive education is based on the right of all learners to a quality education that meets basic learning needs and enriches lives. As a result of continuing development of ET, and ICT, e-learning and virtual education has grown up. These virtual education is very much effective for impaired learners specially HI groups. In science education it is mandatory to perform some practical work, which sometimes very difficult for that vulnerable group. Therefore present study try to intend to prepare a model frame of practicum course through new technique called ***SIMU-LAB****. By these techniques HI students can easily conduct their practical task. More over a comparison will be done between normal and HI learners regarding the practical courses. Thus an effort should be made up for successive inclusion.*

KEYWORD :- Virtual education, Hearing impairment, Simu-lab, practicum courses, Inclusion.

INTRODUCTION

Actually inclusive education is a pairing of philosophy and pedagogical practices that allow each student to feel respected, confident and safe so he or she can learn and develop to his or her full potential. It is based on a system of values and beliefs centered on the best interests of the student, which promotes social cohesion, belonging, active-participation in learning, a complete school experience, and positive interactions with peers and others in the school community. Inclusion is seen as the wider reform of the education system to create a more effective education system and society. The inclusive education approach is to create an education system that is responsive to learner diversity and to ensure that all learners have the best possible opportunities to learn (Ras, 2008). Inclusive education is based on the rights of all learners to a quality education that meets basic learning needs & enriches lives. Focusing particularly on Vulnerable & marginalized groups, it seeks to develop the full potential of every individual. The ultimate goal of inclusive quality educations is to end of all forms of discrimination & foster social cohesion (UNESCO, 1994.) from many sides. According to that view point of UNESCO, one of the most Vulnerable group that is touched by the study is hearing impairment.

Most of the same teaching strategies used to instruct children who do not have a disability would be appropriate for the child with a hearing impairment. This child will learn from what he sees and what he does (action). He learns a great deal incidentally by watching others. Instruction in a large group can be very beneficial for this child because he can prepare for his response while waiting for his turn. Therefore virtual instructional techniques are more appropriate for them.

**Assistant Professor & H.O.D, Department of Education, Derozio Memorial College, West Bengal, India.*

Virtual education in its many and evolving forms offers significant advantages to normal students, exceptional student and educational institutions. Students who are unable to attend traditional schools due to health, athletics, or arts commitments often find full-time online or virtual education to be an effective answer. Similarly, students who need credit recovery opportunities (to continue their education) to accumulate additional credits during the summer to progress to the next grade, or to accumulate credits for graduation find virtual education provides options that work effectively for them. Students who need to combine virtual education with traditional in-school enrollment because of family, employment, or health are also well served by new virtual options. Virtual education is a highly promising route for students who need an expanded catalog of offerings to accelerate their educational progress, earn college-level credit, or who may want to take supplemental courses that are not offered at their institution. Virtual education is also helping students in more remote geographical locations who want and need the opportunities that are more readily available to urban and suburban students.

The idea of virtual education is very old concept. Actually in education virtuality depends on modern technology. Our study is about virtual classroom, a specific design technique by which a challenged group of Lerner may benefit, they brings to come under an unique umbrella of knowledge. There is many study as well as implication done about virtual education and inclusive education Such as Al. S. Vitangcol III considered The Implications Of Virtual Education In Higher Education Institutions. Results indicate that virtual education models in their efforts to bring mass education opportunities to challenging people. Ms. Shubhangi K. Jadhav showed that Different Users of Virtual Classroom and Limitations of Virtual Classroom. Another study of Elizabeth Perin, Beth Andrews, Kimberly Body, and Jill Anderson (2003) The history of virtual schools and the literature in this area dates back to the early 1990s. Now two decades later virtual schools have evolved tremendously. There has not only been a change in enrollment but also in the trends and best practices to utilize in the virtual environment. Joan Mccomas, Jayne Pivik, Marc Laflamme (1998) discussion about Current Uses OF Virtual Reality For Children With Disabilities. It indicates that the advantages of VR for children with disabilities, how VR can minimize the effects of a disability, the role of VR in training and skills enhancement, and how social participation and the child's quality of life may be improved through the use of VR. The United Nations Children's Fund (2003) discussed the Examples Of Inclusive Education India. Barbour, M., & Reeves, T., in 2008 done a work on "The reality of virtual schools: A review of the literature. Computers and Education". McBrien, J., Cheng, R., & Jones, P. in 2009 enlighted on Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. The International Review of Research In Open And Distance Learning. Miner, N. (2009, July). The non-drowsy virtual classroom. Lavolette, E., Venable, M. A., Gose, E., & Huang, E in 2010 Comparing synchronous virtual classrooms: Student, instructor and course designer perspectives. TechTrends: LinkingResearch & Practice to Improve Learning. But no work done on virtual class room design for practical courses of engineering streams on challenged Lerner specially HI pupils, in their remote location.

Hafner, 2013 studied on Teaching Methodology for Virtual Reality Practical Course in Engineering Education. Virtual reality is widely used in the industry and is becoming more and more affordable for end users. At the same time higher education students want to be well-prepared for their professional life and expect more courses with practical application of theoretical knowledge acquired during their studies. Moreover, they benefit greatly when having the possibility to improve their soft skills (Hafner, 2013). To meet the challenge of industry oriented VR courses, we designed a practical course for university students with a focus on learning virtual reality by simulating an interdisciplinary industrial project. In each semester fifteen students of different degree programs (such as mechanical engineering, mechatronics, computer sciences, physics and engineering management) have the possibility to attend this course and form interdisciplinary and often international groups. The goal of the practical course is to help students acquire knowledge of virtual reality hardware, software and applications through practical tasks in form of projects. They get the chance to design a solution to a complex task in a team. They must take into account the interfaces between the sub-tasks and then merge the sub-tasks into a complete product. The targeted skills are a methodical approach to practical engineering problems, teamwork, working in interdisciplinary groups and time management (ibid).

For inclusive education it is necessary to gather all types of learners including challenged pupils. HI is one of the such group, who's need to be identified. There are over 3.1 million persons with hearing impairments in the entire globe. According to the annual report of Ali Yavar Jung National Institute, 2010-11, state wise distribution of schools in India is given below (Table-1).

Table 1: State wise distribution of schools for children with Hearing Impairment

Name of the state	No. of Schools		Name of the state	No. of Schools
Andaman Nicobor	02		Maharashtra	95
Andhra Pradesh	49		Manipur	01
Assam	10		Meghalaya	05
Bihar	08		Mizoram	02
Chandigarh	05		Nagaland	01
Chhattisgarh	05		New Delhi	11
Goa	09		Odisha	08
Gujarat	15		Puducherry	01
Haryana	08		Punjub	10
Himachal Pradesh	01		Rajasthan	10
Jammu & Kashmir	01		Tamil Nadu	40
Jharkhand	03		Tripura	02
Karnataka	18		Uttar Pradesh	15
Kerala	26		West Bengal	25
Madhya Pradesh	11		Total	**387**

Source : Annual report: 2010-2011 ;Ali Yavar Jung National Institute For Hearing Handicapped.

But due to many difficulties very small numbers of them are inspired for engineering streams. Hoppestad 2007, notes that "persons with disabilities are typically underserved in the realm of AT due to their own lack of knowledge, limited availability of trained personnel, and a dearth of resources". Besides this, there is a greater space for practicum courses in engineering sections. For the HI learners it is very difficult to go to the laboratory and to follow the instructions of teacher in regular mode. Therefore present study dug that corner and tried to implement new modern technique for practicum courses as virtual simulative laboratory, i.e. **"SIMU-LAB"**.

"SIMU-LAB" terms by Simulation and Laboratory. Simulation may state as non real but practical oriented design. Some work that does not happen in real but its model can prepare by using some technology like computer software. This model is simulation. When this model is used to design or re-forming a Laboratory course structure as project basis, for time saving and effort saving manner is referred as SIMU-LAB.

OBJECTIVES OF THE STUDY :- Present study attempts at:

1. To design a SIMU-LAB technique or alternative scientific course design for HI-Lerner.
2. To establish common relation or amalgamate two or more engineering stream courses.
3. To applying more than simulation software for virtual laboratory design.
4. To growing up interest of HI-Lerner engineering students to performing practical knowledge of engineering.
5. To finding a moral, social, and economical values from physically challenged students

METHODS:

INSTRUMENTS:-

The model was conducted with the following software (table-2). –

Table 2: "SIMU-LAB" Software Identity.

SL.No.	Software	Identity
1	**PolyVR**	Virtual reality engine used for teaching purpose.
2	**C++ programming language**	ProgrammingLanguagesoftwareformodel preparartion.
3	**OpenSG**	Open Source Library, feature a scene graph management with the focus of clustering and threading.
4	**ILIAS**	Integriertes Lern-, Informations- und Arbeitskooperations-System. It supports learning content management and tools for collaboration, communication, evaluation and assessment.
5	**GIT**	**Git** /g ? t/ **is** a distributed revision control and source code management (SCM) system with an emphasis on speed. Git was initially designed and developed by Linus Torvalds for Linux kernel development in 2005.
6	**MATLAB**	Matrix Laboratory Software for designing, graphix and simulation purpose

PROCEDURE:-

The study of this paper design a technology based practicum specially 'SIMU-LAB' for hearing challenged learners in engineering sections. The methodology of this paper highlights some practical course amalgamation process. In details there are so many streams in engineering courses such as basic science, electrical, electronics, mechanical, computer Science etc. and all streams also have some practical experiments. All engineering student must to learn all lab-work more or less. But hearing impaired students also have rights to learn engineering courses, but are not able equally like normal students. In this case for theoretical classes they have to learn by virtual education system but practical classes no such design yet established. So some special course design is required for those groups of students. This paper tries to design that combo course by which they can come under same engineering knowledge umbrella. The design follows some steps, as follows-

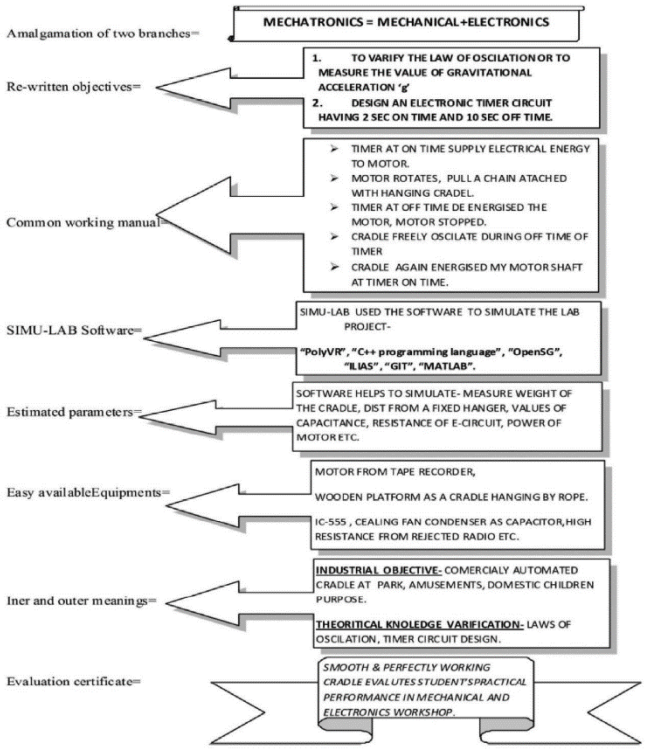
1. All experiments techs in laboratory or workshop are re-written in project form, basically clearly stated it's practical oriented values.
2. In modern sense highlights the common relation by not only easy formula but clear picture or diagram oriented 2d or 3d model of different branches of engineering.
3. Making a simulation based software by which different parameters of any experiments can easily changed and pre-estimated results visualized.
4. Experiment student can used this technology to make their hand making one or more project model by submerging two or three engineering streams, using common domestic available materials.
5. The model should have two meanings. In outer meaning their projects have some practical significance in industry. And in inner meaning their projects verifies the laws or theories based on practical knowledge.
6. These types of project models help to evaluate the experiment of student's practical knowledge and help to build an engineer.

ANALYSES AND INTERPRETATIONS:-

In this paper a teaching methodology for a VR practical course is described in detail. The realized projects show the results achieved by the HI students and as well as examples for task definition and assignment. To conclude the authors try to prepare a model and make a compare between normal and HI students' activity regarding these project oriented practicum courses.

As per example present researchers design a SIMU-LAB projects that can be easily made up by some experiment engineering students (Fig-1).

Fig-1. A mechatronics model-"AUTO OSCILATED CRADLE"



Like this type of project other model can be performed by the experiment students, that can be listed bellow (table-3).

DOMESTIC MODEL	UNDER STREAMING	SIMU-LAB TECHNIQUE USED
Programmed based motor rotation	COMPUTRICAL= Computer+ Electrical	Computer programmed leads the power to motor windings.
Virtual distance estimator	OPTOELECTRONICS= Optical +Electronics	Optical LASER beam reflection can measure virtual distance by electronics control.
Blue Tooth charger	COMPUTRONICS= Computer+ Electronics	Mobile phone can charged by computer design and electronics circuits.
Automated Brush for Painting	MECHATRONICS= Mechanical+ Electronics	Electronics control the mechanical two-way movement and helps to paint wall.
Non Conventional Electricity	BIO-ELECTRICAL= Bio Technology+ Electrical	Electrical energy from biological sources like Lemmon, potato, green leaves, fungus e.t.c.

All graduate and undergraduate students from normal as well as HI group studying mechanical engineering, mechatronics, electrical engineering, computer science, physics or engineering management can take part in the course. This information makes the task specification easier, ensuring that the interests of students are also taken into account. This leads to higher motivation, better project results and acquirement of targeted knowledge and skills. Hence it seems to be the pillar of success of inclusion. Normal students can easily follow the laboratory based practicum courses, Where as the HI students also perform their tasks through simu-lab with that of the normal. Thus inclusive education is possible in higher education like engineering streams with proper practicum courses.

Present authors try to compare the task oriented practicum courses of normal students with simu-lab oriented project of HI students (table-4).

Table 4: Comparison between normal learners and HI learners regarding their practicum course design for successful inclusion.

STEPS FOLLOWED	NORMAL LERNER	HI-LERNER
Objectives	What they have to done in general since.	What's their aim in particular values.
Theory	Brief description with formulization.	Relation between two streams by easy basic principal & pectoral link.
Design/Planning Equipments/Instruments	Design by proper diagram, formulization, estimation & Calculation As per LAB/WORKSHOP/Field availability.	Design by SIMU-LAB software. As per Domestic availability.
Experiments	Data collection, Recording and Analysis.	Hands on Projects followed by 2d or 3d model.
Results and Evaluation	Laws verification and Execution.	Performance based on the projects.
Justification and Judgmentation	Accuracy, Error minimiz ation, Precaution, Limitation.	Industrial acceptability, Cost benifitness, small scale production.
Experience	By I.T/V.T etc	By Virtual store observation.

More over, the task design is the most important part of the virtual simu-lab practical course. It must be specified very precisely and at the same time have to give the course members freedom to be creative. This is one of the key factors for a successful project. The other issue is the group configuration. Using the information of the household things, it is easier to define the individual group member's tasks according to their knowledge and interests. The software platform has to be carefully chosen. It is good if the simu-lab software solution is open source, well documented and has big community. A modular software design facilitates the project extension with new features and the use of specific libraries (for instance sound, physics).

Through the interdisciplinary and international nature of the VR practical course groups, the students learn to know the mindset of the other disciplines and cultures. During the project, they have the opportunity to experiment and learn from their mistakes to ensure that they are

better prepared for their professional life. The project tasks from current engineering topics are distributed according to interests and expertise of the practical course member. We have noticed that the challenging tasks of the project strongly motivate the students. The motivation in a team increases so much that most students often work on the project in their spare time.

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KITAMI 2020 PROJECT THROUGH BIOETHICS & GERONTOLOGY

***Ryo Takahashi**, Ph.D.

ABSTRACT

Kitami 2020 Project through Bioethics & Gerontology is applied through the Philosophy of Gerontology which is all age related practical pedagogy, which draws forth the significance of human existence with practical science. It was directed that Philosophy of Gerontology and bioethics may be created a new applied world in a society for all people with in all ages and nationalities. The gathering location for applying the above philosophy is chosen in Kitami city, HokkaidoonAug17-22in2020.

Upon the principal of the above philosophy the following summits and activities are planning in Kitami, Hokkaido, Japan as International Youth Peace Ambassador Summit & Indigenous Leaders' Summit : Training Workshop (YPA)in Kitami 2020 are planning with philosophy of Samurai Spirit with no power and no authority but truthfulness and action..

KEYWORD: Gerontology, Bioethics, Kitami, Hokkaido, Budo, Ainu, Indigenous.

INTRODUCTION

Kitami city is located in Okhotsk Sub prefecture, Hokkaido, Japan(Population117,897 on Sep30,2018).Kitami has been world widely known through Curling winter Olympics game. The team, Loco Solare / Tokoro Curling Club got bronze medals at Pyeong Chang 2018 Winter Olympics.Hokkaido is literally meant "Northern Sea Circuit" which has been formerly known as Ezois the second largest is land of Japan Population 5,310,559 on September30,2018).

The Hokkaido was explored byAinu.The Ainu are an indigenous people of Japan.

The official number of the Ainu is registered 25,000,but unofficially is estimated at 200,000, due to many Ainu having been completely as similated into Japanese society. Asa result, there is no official knowledge of the ancestry. Then Japanese people came from another islands after 12 centuries. Ainu people has their own languages and cultures (Lam 2017). Ainu means Man or real man. Samurai's sward is called Katana.This original meaning came from Settlement, Village, or Clan. However, Japanese government has destroyed Ainu lives to become themselves as Japanese.That is human discrimination (Sarashina 1955).The most of all descendants who immigrated to Hokkaido came from the main island of Japan except AINU people.

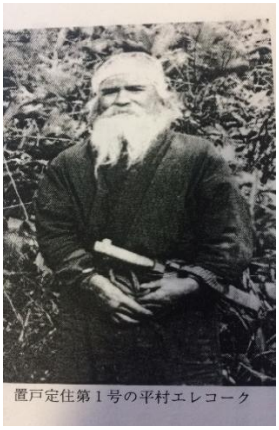
In 1899, the Japanese government passed an act labeling the Ainu as "former aborigines", with the idea they would assimilate. As the result, the Japanese government taking the land where the Ainu people lived and placing it from the nonunder Japanese control. At this same time, the Ainu were granted automatic Japanese citizenship,effectively denying them the

1)Professor, Sendai University, 2)Director, The Nippon Care-Fit Education Institute(NCEI), 3) Fellow, International Association of Scientific Study of Intellectuals Disabilities (2004)

Status of an indigenous group.All AINU history is still existed within the most of all names of the locations in Hokkaido (Gouda2013;Gouda2011).On the other hand, there is a few stories of AINU in Kitami area because history has not been continuously told from the generation to the generation. That is reason why it is necessary to learn and discuss of real history of ourselves to create the better world and society through our young generations.

Hero in Kitami

There is one name, Erekoku Hiramura who was recorded as the first resident in Kitami area (This area was called Notsukeushi) since 1886.



Erekoku Hiramura (Oketo 1957)

Erekoku (about 1840-about1921) guided leaders of pioneer Geological survey for making traffic roads by tasting water in rivers in1921(Oketo cho1957).

Ryoma Sakamoto (Jan3,1836–Dec.10,1867) was another hiro as a Japanese prominent figure in the movement to overthrow the Tokugawa to build the new world in Hokkaido. Ryoma wrote in his last letter a few days before his death, "I had dream to immigrate to Ezo to create New Country."(Miyaji1995) Ryoma's associates, Enzo Kishimoto and Masaomi Kitadai wrote in their letter that "a borigineswere forced to be slavery work more than South American, Black people. However, if pioneering Ezo land truly, we must love natives to nature and work together."(Haraguchi 1996; Miyaji 1995). Dubreuil (2007) reported that Samurai's culture and Way of life is originally from Ainu.Wilford (1989) introduced as follows "Dr. Brace and his co- authors, M.L.Brace and W.R.Leonard, said that when the emperor in Kyoto wanted to subdue unruly inhabitants on the eastern frontier, the area around present-day Tokyo, generals usually recruited armies from the very residents meant to be controlled, the Ainu. This practice had gone on for nearly two centuries, and these recruited warriors became the revered samurai, sword-wielding knights in armor whose exploits led to six centuries of military rule in Japan". Finally, Ryoma's vison was continued to his relatives and associates as Hokkosha. In1897, a group of immigrants comprising 112 families, Hokkosha, who migrated from Kochi Prefecture, settled in Kitami, Hokkaido. Hokkosha was established by Naohiro Sakamoto (Nov. 5,1853-Sep.6,1911) who was a nephew of Ryoma Sakamoto,a hero of the Meiji Restoration (Hashimoto 2013; Okamura2000). It is important to live all together in peace and harmony regardless the community. That is necessary to build up such community with ideal philosophy. One of the concept of the philosophies is called Gerontology. Gerontology is science of human philosophy. The next section is introduced about Philosophy of Gerontology

What is Gerontology?

The Philosophy of Gerontology is all age related practical pedagogy, which draws forth the significance of human existence with practical science for applying into Budo for special education for persons with Intellectual Disabilities. "Gerontology"is generally translated as.

This originated from the idea that strengthening one's teeth lead stohis/ her longevity.Gerontology has inter- disciplinary, inter- professional and inter- national features. Given these factors, we sum up the research, application and applied practice of this learning and call it "Soureigaku" for Gerontology with philosophical understanding in Japanese (Takahashi 2018a).

Ryoma Sakamoto (1836 –1867)

NaohiroSakamoto(18531-1911)

"DaVinciProject2012"Okinawa Proclamation was announced as follows:

Beit known unto all nations and interested persons that on March 3,2007, the International Gerontology Synthes is Meeting, sponsored by the Care-Fit Service Association in Okinawa, Japan, issued the Okinawa Proclamation on Respect for Aging. This proclamation is made in support of the Da Vinci Project, which is an universal approach that recognizes the importance of all age groups accepting the dignity and value of older adults.The theme of this international synthesis meeting reflects the essential components of the proclamation : Youth is a Gift. Age is an Art. The Proclamation recognizes the importance of Implementing an inter disciplinary curriculum that reflects the complex nature of aging and implementing a curriculum that reflects the life span for persons with and without disabilities within settings the home, education, public life, and the workplace (Takahashi2007). Gerontology is human related science. Human lives within nature. All natures have lives. All lives have relationship with bioethics. The next section is considered about bioethics

What is Bioethics?

Fritz Jahr is the inventor of bioethics which was introduced in 1927 (Muzur & Rincic 2011;Steger2015). Potter Introduced Fritz Jahr'swork in English from Germany.

Macer (1998) stated Bioethics for both a word and a concept as follows:"The word comes to us only from 1970(Potter1971), yet the concept comes from human heritage thousands of years old (Macer1994). It is the concept of love, balancing benefits and risks of choices and decisions.This heritage can be seen in all cultures, religions, and in ancient writings from around the world. We in fact cannot trace the origin of bioethics back to their beginning, as the relationships between human beings within their society, within the biological community, and with nature and God, are formed at an earlier stage then our history would tell us ".

Macer(1998) described at least three ways to view bioethics as follows:1)Descriptive bioethics is the way people view life, their moral interactions and responsibilities with living organisms in their life. 2) Prescriptive bioethics is to tell others what is ethically good or bad, or what principles are most important in making such decisions. It may also be to say something or someone has rights, and others have duties to them. 3) Interactive bioethics is discussion and debate between people, groups within society, and communities. Macer states Love of life is central philosophy of bioethics.

It was directed that Philosophy of Gerontology and bioethics may be created a new applied world in a society for all people within all ages and nationalities. It is required to make action with understanding of the above concepts and philosophy. That may be found within Bushido which is living philosophy of the way of life which is called Kigatusku and Zanshin. The next section is discussed about Kigatsuku and Zanshin spirits how dream comes true by making action from the beginning in Kitami.

Kitami International Meeting with Kigatsuku & Zanshin

The gathering location for applying the above philosophy is chosen in Kitami city, Hokkaido on Aug 17 – 22, in 2020 because Kitami city in Hokkaido is not only the author's homeland, but also it was opened the land by Pioneer with the help of AINU,Indigenous people in Japan. These pioneers came to Hokkaido to create new world with the Movement for Civic Rights and Freedom in the 1880s from the various areas in Japan. It is important to keep these pioneers'SOULas we call again, "Kigatsuku" means "an inner spirit to act without being told what to do". SOUL can be grown by See ,Observe, Understand, and Listen to learn each other. Fundamental Philosophy of Bushido for Special Education for Persons with Intellectual Disabilities through Kigatsuku and Zanshin Spirit. Zanshin is also central philosophy of Bushido. Zanshin is a way of Yawara. Zanshin is unconditional SOULto grow for caring and concerning others even relaxing dairy living. Zanshin is to polite to others with humble heart to express thanks. Zanshin is a way of learning from everybody to grow oneself and going back to basic principle mind. With the above common SOUL soft the youth it has been making actions by youth through the Youth Peace Ambassadors International (YPA) and Looking Beyond Disaster (LBD) programs. In 2010 Professor Darryl Macer initiated theYPA and LBD programs through UNESCO and Eubios Ethics Institute (EEI,an NGO founded in 1990 in New Zealand and Japan), in cooperation with partner institutions. The First Youth Peace Ambassadors Workshop was held in Hiroshima, Japan in October 2010, with cooperation between UNESCO, Eubios Ethics Institute, Hiroshima Peace Culture Foundation and UNITAR. There were over 50 participants. It is a greed with collaborating action plans with Philosophy of Gerontology which has been developed by Nippon Care-Fit Education Institute and Eubios Ethics Institute (EEI,an NGO founded in 1990 in New Zealand and Japan), in cooperation with partner institutions including American University of Sovereign Nations.

Conclusion

Upon the principle of the above philosophy the following summit is and activities are planning in Kitami, Hokkaido, Japan as follows. International Youth Peace Ambassador Summit & Indigenous Leaders' Summit : Training Workshop (YPA) Kitami 2020 are planning with philosophy of Samurai Spirit with no power and no authority but truthfulness and action on Aug17 – 22, 2020 before Tokyo Olympics (July 24 –Aug 9) and Paralympic (Aug25-Sep 6) in Japan for a creating new world in 2030 in Hokkaido, Japan.

The gathering location for applying the above philosophy is chosen in Kitami city, Hokkaido on Aug17 –22, In 2020 because Kitami city in Hokkaido is not only the author's

homeland, but also it was opened the land by Pioneer with the help of AINU, Indigenous people in Japan. These pioneers came to Hokkaido to create new world with the Movement for Civic Rights and Freedom in the 1880s from the various areas in Japan.

Shogido (Japanese chess), Budo Keiko Enbukai Martial Art Competition (Judo and Kendo) particularity for persons with intellectual disabilities is planed is reviewing acting philosophy of Bushido which is required with Meditation, Prayer, or Yoga or Zen practice. This must be the central of Bushido (Benesch2014;Uchida2013).

With all above histories, teaching principle and philosophy the Gerontology concept has been setup. The following conference has been preparing now. Topics are chosen as follows: Education, Human Rights (Indigenous people), Disasters Management and Environment (Takahashi, Anderson, Coover, Kikuchi, Scott, & Smith,2014). All participants are welcomed to gathering to Kitami city, Hokkaido, Japan during the year of Tokyo Paralympics and Olympics in 2020.

2020 Gerontology Conference in Kitami, Hokkaido, Japan International Gerontology Conference: Theme: Youth is a Gift and Age is an Art

International Youth Peace Ambassador Summit & Indigenous Leaders' Summit: Training Workshop (YPA)

International Budo Keiko Enbukai for All People including disabilities in Kitami 2020

DateAug17-22,2020

Location:Kitami city Art Culture Hall

Purpose:Training future leaders from Youth

Activities:Youth Summit about Environment, Prevention from Disaster, Education, Human rights for Indigenous people; Budo Keiko Enbukai for persons with Hokkaido Sakamoto Ryoma Cup(Judo;Kendo)

Aug17 (Mon)	Shogido(Japanese Chess)workshop and competition at Kitami City Art Culture Hall
Aug 18 (Tue)	Welcome Budo Keiko Enbukai at Kitami City Budokan Keynote Lecture: Princess Akiko of Mikasa World Indigenous Culture Exchange Festival Pra for World and Peace at Kitami City Art Culture Hall
Aug 19 (Wed)	International Summit round-table meeting at Napal Kitami (Hokkaido Youth Support Activity Center)
Aug 20(Thurs)	International Summit Roundtable Meeting at Napal Kitami
Aug 21(Fri)	Field Trip in Abashiri Area
Aug 22(Sat)	Field Trip in Aakan Area(Ainu Cotan(Village))

Sight Seeing: Hokkaido Museum Northern People	http://hoppohm.org/index2.htm
Abashiri Prison Musium	http://www.kangoku.jp/
Moyoro Shell Mound Musium	http://moyoro.jp/
Akanko Ainu Kotan00	http://www.akanainu.jp/

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AUDIOLOGY: ITS HISTORY AND JOURNEY

***Sushmit Mishra**

ABSTRACT

Audiology is an emerging field of study in India. The history of this field is found scattered in different segments in various literature. In the literature review no attempts were evident which tried to integrate the different aspects of development of the Audiology field in one thread. In addition, the history of this field being new in India, no literature attempted to integrate the important milestones in Audiology in India. This article attempts to bring in the key milestones of the field of Audiology, both in Western countries and India in a single time line.

KEYWORD: Audiology, Incorporation of sensors, & Cloud technology

INTRODUCTION

Audiology is the branch of science that studies hearing, balance, and related disorders. The word Audiology is derived from Latin *audīre*, "to hear"; and from Greek, *logia*, "to study" (Gelfand, 2009). The professional who deal in the field of audiology are called audiologists. Audiologists are the individuals whose primary interest is in the identification and measurement of hearing loss and rehabilitation of those with hearing disorders (Hall, 1998). Hearing is the sensation in which the particular sensory organ (ear) perceives the acoustical signals from the environment and enables us to understand the particular sound that is perceived. The history of audiology dates ages back.

Historical Development

Even thousands of years ago, people began investigating hearing, hearing loss and its causes. In 1550 BC, there were writings from a famous medical scholar, Ebers. Among various other medical topics, he discussed "treatments" for hearing loss. In 4th century BC, Hippocrates - that most famous Greek doctor and philosopher, made his mark on the study of hearing loss. He was the first in written history to use clinical research to find a cause for hearing loss, which he thought was related to the direction of winds, weather changes and also tinnitus. He also believed that hearing loss could be related to skull trauma. Subsequently, in 50 - 25 BC - Aulus Cornelius Celsus was the first to differentiate between various hearing disorders, and some of Celsus's treatments are still in use today in their most minimal form, including those dealing with foreign bodies in the ear, ulcers and ear wax blocking the ear canal (Easwar et al. 2013). Roman physician Arhigenes in 1st century AD, used loud sound to stimulate the auditory system, believing (incorrectly) that this could stimulate hearing in those with hearing loss. Physician Alexander of Tralles (4th century AD) used herbs to treat hearing loss, as well as the auditory stimulation method by blowing a trumpet directly into the ear canal (Sente, 2004). In Middle Ages, other interesting rehabilitation methods were used by well-meaning ear doctors to stimulate hearing in patients with hearing loss, including speaking softly and using a small silver or gold tube to suction the eardrum. The first known teacher deaf was Ponce de Leon of

**International Institute of Rehabilitation Sciences and Research Plot no. 196/2276, Jagamara, Bhubaneswar-751030. e mail:*

Spain mid to late 1500.

The manual approach (sign language, finger spelling etc) remained a major approach to educate children with hearing loss (Plann & Susan, 1997). Until speech reading and oral methods were popularized by Hoarce Mann, Alexander Graham Bell to name a few around middle of 20th century. The first amplification system to be used was the hand cupped behind the ear. It provides about 14 dB amplification at about 1500 Hz (Pollack, 1998). The earliest historic reference to hearing aids suggest that animal horn and sea shell were the first hearing aid devices. Sea shells and more widely horns were used through seventeenth century to beginning of 19th century. The horns were hollowed and the tip end placed towards the ear which allowed better sound collection and routing to the ear canal. Some of the earlier patent on hearing aids suggest that these aids were modification of earlier crude form of hearing aids. The literature on earlier development of hearing aid and education of hearing impaired is very sparse until the availability of electronic instruments. The first published scientific communication on hearing instruments were the speaking trumpet and hearing trumpet was used by persons with normal hearing.

Large ear or speaking trumpets were used by ship captain to receive and transmit messages to the shore or to other ship. These earlier trumpets were made up of metal or glass. Ear trumpets for people with hearing loss were made up of thin metal or tortoise shell. Few economic models are made up of card board cones or tubes (Pollack, 1998). Very soon in their development ear trumpets were made collapsible and could be carried more easily. A number of instrument makers soon developed the art of manufacturing speaking and listening trumpets and with encouragement from physician who advocated the use of such instruments by deaf. The earliest such firms recorded is F.C. Rein and Son about 1800 in London. The well-known acoustic throne was made by Rein in 1819 for King Goa (John) of Portugal. The throne consists of hollowed arm rests, carved into lion's head at the front. The arm rest cavities lead to resonant box located in the seat of the throne. The sound is heard via a hearing tube connected to the resonator. Rein firm also manufactured acoustic urns, ear trumpets with large silver resonator, acoustic devices hidden in the hat or by the beard and speaking tubes to be used in churches. No major progress was made in the understanding of hearing and how the ear works until the 17th century, and big steps were not taken in audiology until the turn of the 19th and 20th centuries. Before the twentieth century a number of firms in Europe and United States began to manufacture a wide range of hearing aids and began to innovate them. Small, quite flat metal or tortoise shell trumpets were popular and were referred to as ear cornets (or trumpets). Ear trumpets provided amplification in a narrow frequency range which assisted the person with hearing impairment to some extent. The banjo trumpet was a conical instrument with a rather small cross section that had a scoop or dish-like collector attached to it. The pipe trumpet resembled a large tobacco pipe and consisted of a conical section that bent and expanded to large collector area. Bone conduction hearing devices appeared quite early in the hearing aid development. Most of the bone conduction devices were pieces of woods or rods of iron. One end of the strip or rod was held between or touching the teeth of the speaker and the other end was held in the same manner by a person with conductive hearing loss. Fonifero is a modified bone conduction device which was invented by Giovanni Paladino (1876). At one end

of the rod it had almost a semi circle, that was rested against the throat of the speaker.

The listener end of Fonifero was placed against the teeth and mastoid area of the listener. The listener end of the instrument was a small cup. The disadvantages of these instruments are that the listener and speaker had to maintain a distance which made it difficult for the person with conductive hearing loss to use their residual hearing. In 1879, Richard Rhodes, of Chicago, invented and patented a hearing fan, which was called Rhodes Audiphone. This fan consisted of thin piece of pliable material shaped like a fan. The upper edge of the fan was held against the user's upper teeth or clasped between the teeth. A system of cords permitted the user to increase and decrease the fan itself, thus allowing adjustment in sound pick up. These instruments were popular for five years and witnessed various innovation in size, shape and material. The idea of folding the fan when not in use was also incorporated. They served people with mild to moderate hearing loss.

A popular version had a small ear trumpet built into a half open fan. Another popular model was a metal which was merely held behind the ear to transmit sound. A large number of types, styles and sizes of ear inserts have been designed in an effort to aid hearing. Some of these ear inserts are much like the metal ear specula used by the otologists. Few of these were expanded at the external end to collect sound better. They did not provide amplification but were effective with people who had collapsible ear canal. Adam Politzer had an interesting ear insert device made of vulcanite and was shaped like a tiny alpine horn. The circular opening was directed to the rear. Several sizes were available, the largest being 2.5 cm long with 12 mm diameter opening and a 5 mm diameter insert. Later Politzer modified this device by removing the material from the inner angle which resulted in L shaped instrument with a trough. But all these devices were reported to provide no amplification (Sente, 2004).

Development in 20th Century

The invention of telephone in 1876 by Alexander Graham Bell spurred the interest towards the development of device that would not merely collect sound but amplify it (Katz, 2002). Bell wanted to develop an electric hearing aid for his mother and the girl he loved but gave up the idea to invent telephone. Bell invented a "singing flame" instead to give visual indication to the deaf regarding their own speech effort. Dr. Ferdinand Alt was credited to developing the first electric hearing aid in 1900. The instrument consisted of a carbon microphone, a magnetic ear phone and a battery. The carbon microphone consists of two metal plates which serve as diaphragm separated by carbon granules. It has been argued that an apparatus named Akoulallion was manufactured in limited quantities in 1898. In 1900 the Akoulallion was modified to Akouphone. Both these instruments did not have enough power to help people with severe hearing loss. The device made by Alt helped people with mild to moderate hearing loss. The third type of hearing aid developed by Hutchsion was called the Acousticon. It was used by Queen Alxendra of England. In the beginning of 1902, another hearing aid named Oriphone was invented by C.W. Harper in Boston. In 1904, Mears Radio-Hearing Device Corporation was inaugurated and the hearing aids got very popular 1908. The William Articulator Company was established in 1909. Deutsche Akustik Gesellschaft of Germany was established in 1910. Siemens & Halske of Germany began manufacturing in 1910. Gem Ear Phone company of

New York was established in 1912 (Sente, 2004).

The profession of audiology had its origins in the 1920's when audiometers were first designed for measuring hearing. Fowler, Weigel and Fletcher promoted an audiogram in 1922. The ear molds in different sizes were available from 1920s with introduction of receivers in hearing aids. By the beginning of 1930, bone conductors were used in place of earphones. The earphones were also reduced in size and ear tip were used to direct the sound to the ear canal and the term hearing aid receiver were introduced during this time. Soon after this the ear tip was replaced with stock vulcanite ear molds, then custom made vulcanite and finally plastic earmolds. The carbon hearing aids did not have boosters and hence produced limited gain. Their resonant frequency was at 1024 Hz like the resonant frequency of ear trumpets. Carbon hearing aids were available in table model which had multiple microphones and often included large collecting cones and resonant cavities. Carbon hearing aid used zinc oxide batteries. Wearable instruments were also made shortly available. The vacuum tube instruments had higher gain and more fidelity than the carbon hearing aids. The vacuum tube operates like a valve which allows only flow of energy in one direction only. With invention of triode, a grid or wire mesh was added to control the flow of electron from the cathode to the plate. This control permitted the first electronic hearing aid to be designed. The first vacuum tube hearing aid was developed by Earl C. Hanson and patented in 1921. The instrument was larger than a box camera, was battery powered and employed a single triode. This was followed up by marketing of vacuum tube hearing aids by various companies like L. Gaumont of France, Macroni of England, the Western Electric Company, and Radioear Corporation. All these instruments needed to cumbersome and were quite expensive. In addition, the triode was instable which made them uncompetitive with the carbon hearing aids. In 1931, the pentode vacuum tube which consisted of plate, a cathode and three grids was perfected. The pentode was stable in performance, had a relatively long life and readily permitted amplifier stages to be coupled so as to obtain virtually as much increase in power as was desirable. Thus, the first practical and popular vacuum tube hearing aid appeared in mid 1930s. These earliest vacuum tube hearing aids were wearable and were later referred to as two-piece instruments since there was a microphone-amplifier portion and a battery pack portion. Although they were larger and heavier than carbon hearing aid, they provided greater amplification. The hearing aid powerful enough to help person with severe to profound hearing loss appeared in 1936. Soon after the release of two-piece instruments, the hearing aid manufacturers were able to miniaturize their instruments to allow for one-piece hearing aids. Arthur M. Wengel of the Madison was credited with manufacturing the first wearable vacuum tube hearing aid in the United States although many companies in UK were manufacturing them. In USA, many companies including Beltone manufactured such hearing aids in mid 1930s. The crystal microphone actually transduced the acoustic signal into an electric signal as faithfully as possible; this action is known as piezoelectric effect. They were introduced for a brief time before the advent of transistor hearing aids (Levit, 2007).

Interest in this profession surged in the 1940's when soldiers returned from World War II with noise induced hearing loss due to near-by gunfire or to prolonged and unprotected exposure to machinery noise. Others had psychogenic (non-organic) hearing loss as a result of

severe emotional and mental stress. The Veterans Administration took a lead role in providing hearing testing and rehabilitation through hearing aids, auditory training, and speech reading (lip reading) programs. Since the 1940's and 1950's, the study of hearing, hearing loss, and audiologic rehabilitation has escalated and expanded. The pioneers who developed audiology are Raymond Carhart and Norton Canfield, who coined the name "audiology" in 1946 (Berger, 1976). Raymond Carhart is hailed as the father of Audiology. By the end of world war II the development of audiology field expanded as various rehabilitation centres focusing primarily on to rehabilitating the hearing impaired. The carbon hearing aids and the vacuum tube hearing aids each last for 25 years with later giving way to transistor hearing aids. The transistor was invented by Bradeen, Braittain and Shockley in Bell Telephone laboratories in 1947. Initial versions were not useful for hearing aids but a refinement to the geranium junction soon appeared which was useful. Beginning in 1952, many hearing aid manufactures began using this junction transistor in place of vacuum tube which were called as hybrid transistor hearing aid but had substantially lesser battery consumption.

But soon all transistor hearing aid appeared in market and within 2-3 years the vacuum tube hearing aids became obsolete. The first commercially available transistor hearing aids was available in 1952. The size miniaturization permitted various style of hearing aids like the pocket level was much smaller, behind the ear (BTE), and the hearing aid built within the eyeglass's temple. The first of all transistor hearing aids were made by companies like Microtone, Maico, Unex and Radioear and these companies came into picture in January-February 1953. Initially these instruments were expensive than vacuum tube hearing aids but these difficulties in initial phases led to improved quality and dramatic reduction on battery consumption made vacuum tube instruments obsolete. In 1954, the first eyeglass hearing aids, with microphone and amplifier enclosed in temples made their appearance. Akumed of Germany and Otarion of US were first to introduce such instruments. In 1950s, ear level hearing instruments began appearing which were larger than current instruments and were termed in-the-ear hearing aids. Further miniaturization of size of hearing aid have been achieved by the latest development of silicon planar transistor named as integrated circuits (IC). First hearing aid with IC appeared in 1964 by Zenith as a BTE. Presently, most of the space in hearing aid is occupied by the microphone, receiver and battery. With the introduction of transistor hearing aids, mercury cell batteries were introduced in 1952. The implementation of IC in hearing aids, silver oxide batteries were introduced as more restrictive operating voltage was required. Travelling Wave theory was given by Georg Von Bekesy (1960; Katz, 2002).

Modern Developments

During the 1950s-60s, audiology programs emerged in the community speech and hearing centres geared primarily to aural rehabilitation. In medical settings audiologists began conducting hearing assessments in the ENT clinic. Mendel and Goldstein described medium latency responses in 1969. The first hearing aids worn within the ear appeared in 1969. William House pioneered the cochlear implantation in adults in 1969. Jewett described the evoked auditory potentials in 1970. James Jerger classified tympanometric curves into three tympanogram types (A, B, C) in 1970 (Hall, 1998). Portmann and Arran introduced transtympanic

electrocochleography in 1971. Otoacoustic emissions (OAEs) were introduced in 1979. The 1970s and 80s saw the emergence of subspecialty areas: pediatric audiology, educational audiology, industrial audiology, cochlear implants, and assessment of balance function. In addition, in the 1970s, the microprocessor was created. This microprocessor helped to open up the door to miniaturization of the hearing aid. Moreover, researcher Edgar Villchur developed multi-channel amplitude compression. Amplitude compression enabled audio signal to be separated into frequency bands. These bands were able to adjust sounds so that sounds that were more intensive were weakened and sounds that were weakened would become more intensified.

The system of multi-channel amplitude compression would be later used as the fundamental structural design for the first hearing aids that used digital technology. In late 1977, air cells batteries were introduced which double the active life of mercury cells. Later r echargeable batteries were introduced. The creation of high-speed digital-array processors used in minicomputers opened up the door for advances in digital hearing aids. These minicomputers were able to process audio signals at speeds that were equivalent to real-time. In 1982, at the City University of New York, the first real-time all digital hearing aid was created. The equipment contained a digital array processor and minicomputer. This consisted of a FM radio transmitter and receiver. The radio made a connection between the individual through a transmitter on the body to the radio on top of the computer. The transmitter on the body was connected by a wire to the ear microphone and the receiver. Even though this was a major breakthrough in the creation of hearing aids, there were still a few problems. One of these major problems was that while the hearing aid worked, it was extremely heavy and nearly impossible to move (Mills & Mara, 2011). The first commercial digital hearing aid was created in 1987 by the Nicolet Corporation. The hearing aid contained a body-worn processor that had a hardwire connection with an ear mounted transducer. Two years later, in 1989, behind-the-ear (BTE) digital hearing aid was launched. Bell Laboratories expanded upon the hearing aid business by developing a hybrid digital-analog hearing aid.

Even though early research on this hearing aid was successful, the parent company to Bell Laboratories, pulled out of the hearing aid market and sold its rights to Resound Corporation in 1987. The semi digital hearing aids were short lived in the hearing aid industry and were replaced by fully digital hearing aids in 1995. The Oticon Company developed the first digital hearing aid in 1995, but it was only distributed to audiological research centres for research on digital technology in the realm of acoustic amplification. The Senso was the first commercially successful, all-digital hearing aid, and was created by Widex in 1996. After the success of the Senso, Oticon began marketing their own hearing aid, the DigiFocus. Auditory Steady State Response (ASSR) was introduced clinically in 2001. Vestibular evoked myogenic potential (VEMP) testing was first clinically used in 2004 and with it the audiologist started to show keen interest in vestibular science. The studies starting in the beginning of 21st century, established the connection between hearing and cognition. This led to emergence of a new field of study named as cognitive hearing science. Current digital hearing aids are now programmable which enables digital hearing aids to regulate the sound on their own, without using a separate control. The hearing aid can now adjust itself depending on what environment it is in and often does not even need a physical volume control button. “Made for iPhone

hearing aids" (MFi) were introduced by Resound (2014) followed by other companies, which enables users of MFi digital hearing aids to stream phone calls, music, and podcasts directly from iOS devices. Lithium ion rechargeable battery have been implemented by all companies by 2018.

History of Audiology in India

The All India Institute of Speech and Hearing was established in 1965 to provide training in the field of speech and hearing. In the same year, Nair Hospital in Mumbai started courses in Audiology and Speech Language Pathology. In the year 1966, 4th of April, Indian Speech Hearing Association was formed to look into the interest of Audiologist and Speech Language Pathologist. It is a regulating body which sets up guidelines and proposes policy for audiologist and speech language pathologist. The Government of India recognized the 1980-90 as decade for the person with disabilities as an endorsement of legislation passed by United Nation. Numerous efforts, both substantive and promotional, were taken nationally and internationally to improve the situation of persons with disabilities with the goal of increased integration in society and improvements in physical and psychological adjustment of persons with disabilities within their communities. Programmes were launched focusing on rehabilitation and disability prevention. National committees representing 141 countries and territories were established to improve the following areas: social and economic condition of persons with disabilities, development and implementation of programmes, research, policy and decision-making, legislation, decentralization from the national to local levels, and assistance to developing countries. In the year 1981, National Institute for the Hearing Handicapped was established to provide clinical and training services in the field of Speech and Hearing which was followed by creation of Eastern Regional Centre at Kolkata, Southern Regional Centre at Secundrabad and Northern Regional Centre at New Delhi.

There are currently about 20 Universities in India which provide Speech Pathology and Audiology programs. The Person With Disability (PWD) act was passed in 1995. The requirement for providing of aids/appliances, which are essential for the social, economic and vocational rehabilitation of the disabled persons, has come into sharp focus, particularly after the enactment of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, which came into force in 1996. Scheme of Assistance to Disabled Persons for Purchase/Fitting of Aids/Appliances (ADIP) was also enacted and ADIP scheme was modified to include cochlear implants in 2014. The Rehabilitation Council of India (RCI) was set up as a registered society in 1986. On September, 1992 the RCI Act was enacted by Parliament and it became a Statutory Body on 22 June 1993. The Act was amended by Parliament in 2000 to make it more broad-based. The course Bachelor in Audiology and Speech, Language Pathology (BASLP) had different nomenclature in different university. It was unified as BASLP course by RCI in 2009. The mandate given to RCI is to regulate and monitor services given to persons with disability, to standardise syllabi and to maintain a Central Rehabilitation Register of all qualified professionals and personnel working in the field of Rehabilitation and Special Education. The Act also prescribes punitive action against unqualified persons delivering services to persons with disability. It functions under the ministry of Social

Justice and Empowerment presently. The Rights of the Person with Disabilities act was passed in Parliament of India in 2016. This act provides greater empowerment and reserves the right of the person with disabilities to greater extent.

CONCLUSION

The journey in the field of audiology has been both fascinating and phenomenal. The field of audiology has grown exponentially in the last two decades. Better signal processing strategies have driven both diagnostic audiology and hearing aid industry. Accessories like remote microphone, smart phone compatibility, TV compatibility have been included by all companies by 2016. Recently, Signia and Resound have introduced remote programming of hearing aids using smart phone. The next big thing in the hearing aid industry will the incorporation of sensors in the hearing aids. This has been introduced to cater to the needs of elderly adults who stay alone. If they have an accidental fall, the sensor immediately detects it and texts a message to a cell phone regarding the fall. The cloud technology is being used by Widex to fine tune the hearing aid settings according to the environment of the client. The cloud technology in future hearing aids will be used to control different appliances at home through voice. The next big thing in hearing aid industry will be cognitive hearing aids which will make adjustment according to the listening situations and the cognitive load.

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PARENTS' BURDEN HAVING CHILDREN WITH AUTISM

***Sangram Keshari Dash.**

ABSTRACT

The purpose of the present study was to examine the parents' burden caused by their autistic children.The study was made by taking 18 fathers and 18 mothers of autistic children collected from the Center for Autism Therapy, Counseling , and Help (CATCH), Bhubaneswar. In order to evaluate the burden levels of the parents', the Zarit Burden Interview Scale was used and the burden scores were collected through interview by applying the above scale.

The statistical analysis was performed by taking the scores as determine by the scale. The mean burden scores were indicated and also a "t" test to show the differences between mother and father groups, was also made. Further an ANOVA was also made to indicate the effect of socio-economic status on the burden levels of parents'.Form the result it was found that though there was some visible differences between the gender groups (father and mother) on burden levels it could not be substantiated significant at .05 levels. Similarly, in consideration of their means though the burden levels in low socio-economic status, middle socio-economic status, and high socio-economic status levels was different, but could not be statistically significant.Hence, it was conclude that both the parents irrespective of their differences in sex and socio-economic status had similar levels of burden while taking care of their children suffering from autism.

KEYWORD : Autism Therapy, Parents burden, socio-economic status

INTRODUCTION

Autism spectrum disorders (ASDs) are now the second most prevalent neuro-developmental disorder for children within the United States and a major problem in many other states too. The service needs for individual with ASDs and the potential loss of productivity of person with autism and their families have strong implications for society as annual financial cost are estimated to exceed $35 billion (Ganz,2006). Fortunately, research supports that early diagnosis and intervention can assist in fostering the mastery of many adaptive skills and behaviors in children with ASDs and ultimately result in these children learning to become productive citizens, which greatly benefits society as a whole (Carothers and Taylor,2004). Parents' and families play integral parts in children's development into productive citizens, as parents' are responsible for providing their children with opportunities to learn and grow. However, the responsibilities associated with being a parent or family member of child with an ASD does not come easily as the behavioral challenges and social communication deficits that characterize ASD often are correlated with increased financial and emotional burden on the entire family (Jarbink et al, 2003). These emotional and financial burdens can inhibit parents' and families

* *Guest Faculty in Psychology.Angul Mahila Mahavidyalaya, Angul.*

from effectively helping their children with ASDs and could lead to significant stress and fractured family relationships. For these reasons, it is paramount that research investigates and addresses the possible stressors and challenges these families face so that appropriate interventions can be developed and children with ASDs have the best chance for developing into productive citizens. Over the past decade, there has been an increase in the number of children diagnosed with an ASD. According to The Center for Disease and Prevention, approximately 24,000 children born this year will be diagnosed with an ASD and 1 in every 68 children is diagnosed with an ASD. The prevalence rate for males is significantly higher than females, with the number of males (1 in every 42 boys) being diagnosed almost 5 times higher than that of females (1 in 189 girls) (CDC, 2014).

STATEMENT OF PROBLEM

The review of existing literature on the burden of care in the relatives of person with autism raises several issues. As autism is a major psychiatric disorder, the burden of care would be severe on the parents or caregivers or family members. Even if, everybody recognized that the tendency to discharge psychiatric patients in to the community increases the burden on the family and community, systematic research in these areas started late. Most studies on the Autism Spectrum Disorders have been etiological and comparatively few researchers have looked at the parent's burden or how parents cope with children with autism. Majority of studies were done outside India. Among the studies done in India most are on autism severity and a few on quality of life, and problem behavior of child with autism. Moreover, no study has been done yet in Odisha to assess burden caused by children with autism on their respective parents or caregivers or family members. As a result of deinstitutionalization, a large proportion of children with autism now live with their parents or caregivers or family members. Most of the needs of children with autism, previously met by care center, are now being covered by parents' or caregivers or family members. With the absence of sufficient formal support services at the state level, the amount of burden has increased on the caregivers. Studies done in International and National level are inadequate and also, in conclusive in their findings regarding type and degree of various burdens on relatives of different children with autism.

Hence, it is very relevant to have a study to assess the burden of care on the children with autism.

OBJECTIVE

Keeping the above views in mind the major objective was to evaluate the parents' burden caused by for their children with autism.

HYPOTHESES

On the basis of review of literature, the following hypotheses are formulated:

1. The female parent or mother shall experience more burdens as compared to that of the male parent or father.
2. The burden levels of parents' of autistic children will be affected by their socio-economic status levels. As such the parents' with low socio-economic status will be more burdens in comparison with that of others.

METHOD OF STUDY

The present investigation intends to make a comparative study of the burden of parents' with autistic children. Thus, the objective of the present study was to evaluate the relative burden levels of male and female parents' of different SES levels children with autism.

SAMPLE DESIGN

The sample consisted 36 parents' of children with autism from the Center For Autism Therapy, Counseling, and Help (CATCH), Bhubaneswar. The subjects were divided in to two groups:-

Group-1:- Father of 18 children with autism.

Group-2:- Mother of 18 children with autism.

As far as possible equal number of father and mother of children with autism were included. Age, gender, education, socio-economic status, type of family of the parents' was taken in to account. Similarly, the age and gender of children with autism were also recorded.

TOOL

The data for present investigation was obtained by the following tools:

1. Demographic Questionnaire

Demographic questionnaire was developed for the present investigation to obtain general information's regarding subject's name, age, sex, level of education, annual house hold income, and ethnicity.

2. The Zarit Burden Interview Scale

The Zarit Burden Interview, a popular caregiver self-report measure used by many aging agencies, originated as a 29 items questionnaire. The revised version contains 22 items. Each item on the interview is a statement which the caregiver is asked to endorse using a 5-point scale. Response options range from 0(Never) to 4 (Nearly Always).

Scoring

The burden interview is scored by adding the numbered responses of the individual items. Higher score indicate greater caregiver distress. However, norms of the Burden Interview have not been computed, but estimates of the degree of burden can be made from preliminary findings. These are:

0-20	Little or No burden
21-40	Mild to Moderate burden
41-60	Moderate to Severe burden
61-88	Severe burden

PROCEDURE

After the initial contact the consent of the parents' of children with autism was taken and then the demographic questionnaire was filled up with the help of subject. Then the Zarit Burden Interview scale administered, the investigator gave them the following instruction:

"We are trying to assess the various difficulties felt by the parents' of the children with autism and will ask you few question about them, please do not hesitate to express your true feelings".

During the interview, the investigator noted his rating for each individual item on a five point scale viz.

Never -0 Rarely - 1

Sometimes -2 Quite frequently -3 Nearly always -4

The investigator was free to ask further on the given item wherever he felt necessary. Finally, completing the interview, the investigator assessed the burden of the parents' as a whole, looking in to responses in each individual items and give the rating on a similar five point scale.

STATISTICAL ANALYSIS

The obtained data was statistically analyzed on following. The Mean and Standard Deviation for the burden scores are taken to indicate parents' burden. A "t" test was made to compare the levels of burden in parents' having children with autism. An Analysis of Variance who was made the significance of SES and sex effect on burden level of the parents.

RESULTS

Parents' Burden

The results of the Mean and Standard Deviation of the burden scores turned out to be significant are presented in Table-1, and the result of "t" test corresponding of burden experienced by the parents' presented in Table-2

Table -1

Mean and SD of Burden Scores of Parents' Having Children with Autism.

Levels of Burden

Parents'

Fig. 1.1 Mean of Parental burden Scores.

Table -2

A "t" Test Performed on The Burden Scores of The Parents' of Children with Autism.

P >.05 P > .01

Socio-Economic Status and Burden

The result of Mean scores indicating the effect of Socio-Economic Status on the burden having children with autism presented Table -3, and Analysis Of Variance performed on the burden scores of the parents' belonging to three different socio-economic status revealed significant differences with respect to their burden presented in Table -4.

Table -3 : Mean Burden Scores of Parents' Belonging to Different SES Levels.

Burden levels of Parents'

Sex of the Parents	Mean	SD
Father	42.72	14.98
Mother	45.17	13.39

Socio – Economic Status Levels.

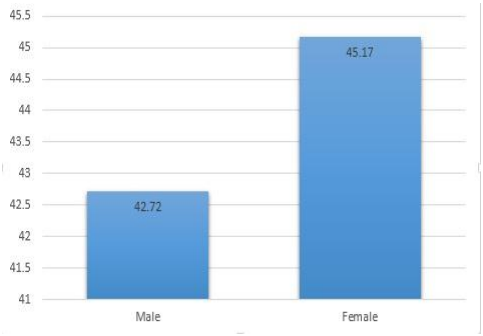
Fig 3.1 Mean Barden of Parents' belonging to different SES levels.

Table -4
Analysis of Variance Performed on Burden of The Parents' Belonging to Three Socio-Economic Status Groups Irrespective of The Children with Autism.

P > .05 P > .01

DISCUSSION

The results of the present study focused on the assessment of burdens faced by the Parents' having children with autism.



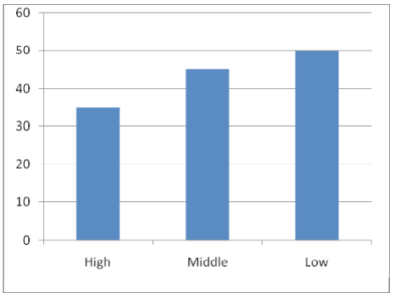
Sex of the Parents	Mean	SD	df	"t" value
Father	42.72	14.98	34	0.52
Mother	45.17	13.39		

While analyzing the effects of sex on burden levels, it was found that the mother had more burden than the father as indicated in figure 1.1. However, such difference was not found to significant as indicated in a "t" test (see Table – 1). More burden in mothers despite, statistical insignificance, as observed may be due to the fact that, the female (mothers) because of their spending more time their children in home, get more disturbed emotionally, physically, and socially. On other hand, the male parents' or father get more opportunity to divert their attention to outside event. Thus, faceless burden. However, statistically insignificance indifference dose not highlight any gender effect.

SES Levels	Mean	SD
High	37.5	16.67
Middle	43.71	15.39
Low	50.07	7.78

Similarly, while analyzing the effects of SES the burden levels of parents' no significant difference was found. Though the burden scores of parents belonging to low SES was indicated to higher than that of the middle and high SES groups as shown in fig. 3.1. Such difference could not be statistically significance this may be due to fact that, all the parents' irrespective of their SES levels, was facing a lot of burdens. However, because off such no significant statistical effects we cannot stress up on the SES effects on the burden. Hence, the findings do not support the hypotheses.

However, I can conclude here that due to small sample size and the inherent problems in collecting data might have affected the result for which the hypotheses could not be verified.



SUMMARY AND CONCLUSION

As pointed out by several authors in the review of literature that burden of care on the parents' of children with autism was significant, it is interesting to know the extent of such

Source	SOS	df	MS	F
Between groups	1144.03	2	572.01	2.92
Within groups	6469.86	33	196	

burdens on the parents of children with autism in Odisha is insignificant. The present study carried out in the Centre for Autism the Therapy, Counseling, and Help (CATCH), Bhubaneswar, and the objectives to assess burden faced by the parents having children with autism. In this study 18 parents of each gender and belonging to different socio – economic status were taken. The Zarit Burden Interview (developed by Zarit, Deever and Bach – Peterson, 1980) was administered and the "t" test and test of analysis of variance were used as the statistical techniques to analyses the data.

The important conclusions drawn from the study are:

While analyzing the effects of sex on burden levels, it was found that the mother had more burden than the father as indicated in figure 1.1. However, such difference was not found to significant as indicated in a "t" test (see Table – 1). More burden in mothers despite,

statistical insignificance, as observed may be due to the fact that, the female (mothers) because of their spending more time their children in home, get more disturbed emotionally, physically, and socially. On other hand, the male parents' or father get more opportunity to divert their attention to outside event. Thus, face less burden. However, statistically insignificance indifference dose not highlight any gender effect.

So, the first hypothesis, "The female parents or mother shall experience more burden as compared to that of the male parent or father" is verified and rejected.

Similarly, while analyzing the effects of SES the burden levels of parents' no significant difference was found. Though the burden scores of parents belonging to low SES was indicated to higher than that of the middle and high SES groups as shown in fig. 3.1. Such difference could not be statistically significance this may be due to fact that, all the parents' irrespective of their SES levels, were facing a lot of burdens. However, because off such no significant statistical effects we cannot stress up on the SES effects on the burden. Hence, the findings do not support the hypotheses.

So, our second hypothesis, "The burden level of parents' of autistic children will be affected by their SES levels. As such the parents' with low – socio –economic status will be more burden in comparison with that of others" is verified and rejected.

However, I can conclude here that due to small sample size and the inherent problems in collecting data might have affected the result for which the hypotheses could not be verified.

LIMITATION AND SUGGESTION

Though a lot of care had been taken to complete the study and efforts have been made to overcome the difficulties, there still remained certain limitations. A few such are as follows:-

1. The sample size was small which made generalization of results somewhat questionable.
2. The data have been mostly collected from urban places.
3. There are many safety and security burden.
4. The study sample is distributed in wide geographical area.
5. Some parents' are refused participate in the study.
6. Lack of literature and previous studies relative to the psychological burden among caregivers of children toward ASD.

Considering all these limitations, some suggestions can be given for further research on the same problem like:

1. Sample should be large enough.
2. The data have been equally collected from urban and rural places. Had it been collected from village or rural places the low SES groups could have been better identified and the SES effects could have been more significant. Moreover, the burden levels of parents both (fathers and mothers) could have also been more pronounced.

The findings of this study may have far-reaching implication and may be useful in the formulation of policies to provide effective support services for children with autism and their families. A considerable reduction in the financial burden can be achieved through the provision

made by the Government as free and much subsidized psychiatric treatment. The establishment of community psychiatric clinics at strategic rural locations could also reduces financial burden through reducing the expenses on transportation for follow up visits. The use of community psychiatric personnel in regular and frequent domestic visits may further enhance this as well as facilitate intervention work, and thus, reduce the burden due to impairment of family interaction and routine.

Community psychiatric personnel could also (as part of a public enlightenment campaign) advise on timely referral to a modern psychiatric facility bypassing less effective spiritual and traditional facilities that add to their financial and subjective burdens.

The establishment of regional community based rehabilitation centers where stabilized patients may be gainfully employed (with stipend/ wages) may also be encouraged. This will improve their self-worth and their families' attitude towards them. Small steps as such may be taken; however, in addition to this a large scale programme is needed to ease the burdens of the parents'.

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LIFE SATISFACTION IN CHILDREN OF WORKING AND NON-WORKING MOTHERS WITH REFERENCE TO STRESS PERCEPTION

*** Ms. Prachi Batra**
**** Dr. Mamata Mahapatra**

ABSTRACT

Stress has become part and parcel in each stage of Individuals' life in the present time. How adolescents perceive their stress and their satisfaction with life has given less attention. Aligned to above, the objective of the present research is to explore the level of perceived stress and life satisfaction specifically among children of working and non-working mothers. The researchers have considered total sample of 100 students constitute 50 children of working mothers and 50 children of non -working mothers in Delhi and NCR Region. The tools used for assessment were Perceived stress Scale byCohen, Kamarck, and Mermelsteinand Multidimensional Student's Life Satisfaction Scale by Haener's. Results showed insignificant negative relationship between the level of Stress and Life satisfaction among children of working mothers (-0.2017), on the other hand a significant positive relationship was found between stress and life satisfaction among children of nonworking mothers (0.2672). When difference between Level of perceived stress in children of working and nonworking mothers was studies, it was found that stress was lower in children of nonworking mothers as compared to children of working mothers, also level of life satisfaction was found to be higher among children of nonworking mothers.

KEYWORD :- *Perceived Stress, working mothers, Non- working mothers, life satisfaction*

"Common sense is the collection of prejudices acquired by age eighteen."

– Albert Einstein

INTRODUCTION:

In this globalised world, importanceof how much adolescents are stressed and satisfied with their life has gained tremendous importance yet got little attention. The most stressed group of people are adolescents, due to biological changes, academic stress, persistent dependence in technology, family issues to name a few.

Adolescent age is the most important age of an individual's life as it effects how the person will be in future. Adolescents in this period goes through different changes like emotional, physical and many more. Adolescents also face changing relationships with peers, new demands at school, family tensions, and safety issues in their communities. The ways in which they cope

**PG Student (BA+MA) Clinical Psychology, Amity Institute of Psychology and Allied Psychology And Allied Sciences, Amity University, UP, Noida*
***Associate Professor, Center Head For Organizational Psychology, Amity Institute of Psychology And Allied Sciences, Amity University, UP, Noida, e-mail: mmahapatra@amity.edu.*

with these stressors can have significant short- and long-term consequences on their physical and emotional health. In case teens have problem in handling this stress it can lead to mental health problems, such as depression and anxiety disorders.

Adolescents is defined by many psychologist like :

- Santrock [1993], defines adolescence as, the developmental period of transition between childhood and adulthood that involves biological, cognitive and social changes.
- Adolescent is a period of stress and storm to be survived or endured. (Arnett,1999). It is viewed as a negative stage of life.

Adolescence is characterized by physical maturation of the brain and body, giving rise to intense psychological and physical change. One primary class of psychological change typical of adolescents is an intensification of emotional experiences. These heightened emotional experiences have been argued to be the basis of psychopathology and suicidal behavior. Adolescence is the most common time of life for psychiatric illness to emerge (Kessler et al., 2005), with reported anxiety reaching its lifetime peak (Abe & Suzuki, 1986) and suicide being the fourth leading cause of death (Eaton et al., 2008).

The feelings and behaviours of middle and high school adolescents can be categorized into five broad areas:

1) moving toward independence
2) future interests and cognitive development
3) sexuality
4) physical changes
5) ethics and self-direction.

Teenagers do vary slightly from the following descriptions, but the feelings and behaviours are, in general, considered typical for each stage of adolescence.

Early Adolescence (approximately 10-14 years of age)

- ***Movement Toward Independence***: emerging identityshaped over time by internal and external influences;moodiness; improved abilities to use speech to expressoneself; more likely to express feelings by action thanby words (may be more true for males); close friendshipsgain importance; less attention shown to parents,with occasional rudeness; realization that parents are notperfect; identification of their own faults; search for newpeople to love in addition to parents; tendency to returnto childish behaviour during times of stress; peer groupinfluence on personal interests and clothing styles.

Future Interests and Cognitive Development:increasing career interests; mostly interested in presentand near future; greater ability to work.

Sexuality: girls physically mature faster than boys; shyness, blushing, and modesty; more showing off; greater interest in privacy; experimentation with body (masturbation); worries about being normal.

***Physical Changes*:** gains in height and weight; growthof pubic and underarm hair; increased perspiration - body odor develops; increased oil production of hair and skin; breast development and menstruation in girls; growth of testicles and penis, nocturnal emissions (wet dreams), deepening of voice, growth of hair on face in boys.

Ethics and Self-Direction: rule and limit testing; occasional experimentation with cigarettes, marijuana, and alcohol; capacity for abstract thought.

Middle Adolescence (approximately15-16 years of age)

Movement Toward Independence: self-involvement,alternating between unrealistically high expectations and worries about failure; complaints that parents interfere with independence; extremely concerned with appearance and with one's own body; feelings of strangeness about one's self and body; lowered opinion of and withdrawal from parents; effort to make new friends; strong emphasis on the new peer group; periods of sadness as the psychological loss of parents takes place; examination of inner experiences, which may include writing a diary.

Future Interests and Cognitive Development:intellectual interests gain importance; some sexual andaggressive energies directed into creative and careerinterests; anxiety can emerge related to school and academicperformance.

Sexuality: concerns about sexual attractiveness; frequently changing relationships; more clearly defined sexual orientation, with internal conflict often experiencedby those who are not heterosexual; tenderness and fears shown toward opposite sex; feelings of love and passion.

***Physical Changes*:** males show continued height and weight gains while female growth slows down (females grow only 1-2 inches after their first menstrual period).

***Ethics and Self-Direction*:** development of ideals and selection of role models; more consistent evidence of conscience; greater goal setting capacity; interest in moral reasoning.

Late Adolescence (approximately17-21 years of age)

Movement Toward Independence: firmer identity;ability to delay gratification; ability to think through ideas; ability to express ideas in words; more developed sense of humor; interests become more stable; greater emotional stability; ability to make independent decisions; ability to compromise; pride in one's work; self reliance; greater concern for others.

Future Interests and Cognitive Development: more defined work habits; higher level of concern for the future; thoughts about one's role in life.

Sexuality: concerned with serious relationships; clear sexual identity; capacities for tender and sensual love.

Physical Changes: most young women are fully developed; young men continue to gain height, weight, muscle mass, body hair.

Ethics and Self-Direction:capable of useful insight; focus on personal dignity and self-esteem; ability to set goals and follow through; acceptance of social institutions and cultural traditions; self-regulation of self esteem.

Some of the problems faced by adolescents are like:

- Body image
- Generation gap
- Moodiness
- Anger
- Poor rapport with parents
- Peer pressure

Adolescent is the most complicated age of an individual's life as the person is not mature enough yet to take his/her decisions and not that small to be dependent on others. This is the age where parents support is the most and adolescents are the easiest to get influenced by their company. Mothers play an important role at this stage. At this stage adolescents are confused about who they are, what do they want from life and where are they going , at this time parents support help them to guide to take right decisions in life.

Adolescents And Prime Causes of stress

There can be various causes to stress like;

- **School pressure**

School pressure is main cause of stress in children, they need to compete with other children's, their co -curricular activities, etc all have an impact on child.

- **Career decisions**

when the child reaches at the stage of 10th, he/she needs to make a decision, to choose their carrier path, to decide what they want to be, and at this time not all children are clear with their choices, and come under stress.

- **Peer pressure**

Apart from being good in studies, the another important phase of an adolescents life is to get accepted by their peer group, to be in the "cool gang" and in order to get accepted in that group children sometimes makes those decision which even according to them are not correct.

- **Dating and friendships**

Dating and friendship also is natural part at this time of age, children have crushes, heart breaks etc which is normal but sometimes when not handled properly leads to serious problems and stress.

- **Pressure to wear certain types of clothing to look good**

This happens mostly in girls, that to get accepted by the other girl gang, they wear that certain type of clothes by which they get attention and get accepted by their friends, it doesn't matter if they are comfortable in those clothes or not and which leads to stress in those children when they don't get proper person to guide them.

- **Peer pressure to do drugs and alcohol**

Increased number of Adolescents today often comes under the same pressure.

- **Pressure to be a size or body shape**

With girls, the focus is often weight. With boys, it is usually being muscular.

Common Symptoms of Stress in Adolescents/Children

There are certain common symptoms which can show that the child is in stress likeIrritability or unusual emotionality or volatility, Sleep difficulty or nightmares,Inability to concentrate, drop in grades ,headaches or stomach-aches,unexplained fears or increased anxiety, isolation from family activities or peer relationships Adolescents also face changing relationships with peers, new demands at school, family tensions, and safety issues in their communities. The ways in which they cope with these stressors can have significant short- and long-term consequences on their physical and emotional health. In case teens have problem in handling this stress it can lead to mental health problems, such as depression and anxiety disorders.

World Health Organization (WHO) defines adolescence as the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to19. Physical changes are most accelerated at this stage. The feelings and behaviours of middle and high school adolescents can be categorized into five broad areas:

1) moving toward independence

2) future interests and cognitive development

3) sexuality

4) physical changes

5) ethics and self-direction

The Stages of Adolescence itself is a very important and little bit complex part of an individual's life. As the way of perceiving things changes, the cognition, the emotional sense, the physical body, the hormones everything is changing at this period of time leading to a little bit of emotional turmoil at this part of life from which every individual passes.To comprehend this complex stage, easily adolescence has been divided in **three stages by American Academy of Child and Adolescence.**

1. **Early Stage:**

Approximately teenagers of 11-13years of age fall under this category.As it is just a starting of teenage, many changes happen in an individual's life.

Cognitive Development

- growing capacity for abstract thoughts
- mostly interested in the present than the future
- deeper moral thinking
- children are more interested in intellectual concepts

Socio-Emotional Development

- struggle with sense of identity
- children start having worries about their physical appearance
- peer pressure
- increase conflicts with parents
- desire for independence
- moodiness
- tendency to return to "childish" behaviour when in stress
- greater interest in privacy

2. MIDDLE ADOLESCENCE:

Approximately 14-18 years of age come under this stage.

Cognitive Development

- Continued growth of capacity for abstract thinking
- setting goals
- interest in moral reasoning
- thinking about the meaning of life

Socio-Emotional Development

- high expectation and poor self-concept
- continued worry about being normal, adjusting to bodily changes
- distance self from parents
- drive for independence
- driven to make friends, popularity can be an important issue
- feelings of love and passion

3. **LATER ADOLESCENCE**

Adolescence of age of 19years to 21 years fall under this stage.

Cognitive Development

- Ability to think ideas through
- examination of inner experiences
- increased concern for future
- continued interest in moral reasoning

Socio-Emotional Development

- Firmer sense of identity
- Increased Emotional stability
- Increased concern for others
- increase independence and self reliance
- peer relationships remain important
- Development of serious relationships

EFFECT OF MATERNAL EMPLOYMENT:

Mothers employment has both good and bad impact on children. Women's work may have significant impacts on children's human capital,their schooling. Again, the effects may be positive or negative. Women's earnings should benefit children's education, especially if women have stronger preferences for educating their children than do their spouses. Dunifon.R., HansenA.T., Nicholson.S.,Nielsen.L.P. in 2013 showed in their study that maternal employment has positive effect on children's academic performance.

Heinrich(2014) found that working parents (especially mothers) can be positive role models for their children, of course, the income they earn can improve their children's lives in many ways. On the other hand, work can impair the developing bond between parents and young children, especially when the parents work long hours or evening and night shifts. The stress that parents bring home from their jobs can detract from their parenting skills, undermine the atmosphere in the home, and thereby introduce stress into children's lives.

Unfortunately, it is low-income parents who are most likely to work in stressful, low-quality jobs that feature low pay, little autonomy, inflexible hours, and few or no benefits. And low-income children whose parents are working are more likely to be placed in inadequate child care or to go unsupervised. According to Heinrich, Two- generation approach could maximize the benefits and minimize the detriments of parents' work by expanding workplace flexibility, and especially by mandating enough paid leave so that mothers can form close bonds with their children; by helping parents place their children in high-quality child care; and by helping low income parents train for, find, and keep a well-paying job with benefits.

In fact in U.S, Wendy Wang, Kim Parker in 2011proved that women, whose participation in the workforce has been steadily rising, are now the main breadwinners in 40 percent of families, up from 11 percent in 1960. Life satisfaction reflects the sum of an individual's positive feelings about the quality of his life and cognitive judgment about this satisfaction(Dost,2004).

LIFE SATISFACTION:

Life Satisfaction has been broadly described as reflecting a cognitive judgment of one's life (Diener, 1994).Life satisfaction is an overall assessment of feelings and attitudes about one's life at a point in time ranging from negative to positive. It is one of three major indicators of well -being: life satisfaction, positive affect, and negative affect. (Diener,1984).

There are various synonyms for life satisfaction like "happiness" and "subjective well-being". Happiness is an immediate, in-the-moment experience, whereas life-satisfaction is happiness

that exists when we think about our lives, looking at the big picture.Shin and Johnson (1978) defined the life satisfaction that, it is a global assessment of person's quality of life by his own according to his or her own settled criteria of success. Life Satisfaction has been broadly described as reflecting a cognitive judgment of one's life (Diener, 1994).

Without life satisfaction, there is disharmony in the inner & outer self. It gives rise to feeling of emptiness, uneasiness and meaninglessness in life. This situation leads to crisis of character, values and working efficiency. Life satisfaction includes the capacity for enjoyment. The more a person can enjoy what he/she have, the happier he/she is. A person having high life satisfaction is expected to have happy/higher adjustment with life and vice-versa.

Bjarnason.T., Bendtsen.P., Arnarsson.A.M.,et. al,(2012) depicted in their research that children living with biological parents reported higher level of life satisfaction than children living with a single parent or step-parent.Suldo and Huebner (2004a) found that adolescents with high satisfaction were less likely to exhibit future externalising behaviours after experiencing significant life stressors. Accordingly, life satisfaction can be viewed as an important psychological strength that helps to facilitate adaptive development.

Working and Non- working Mothers:

Working mother v/s non-working mother who is more beneficial for the growth and development for the child is still the question in every mother's mind. Working mothers many a time leave their jobs to take care of their infants but is it helping the child or not is not that clear. Some mothers may choose to stay at home and adopt the traditional homemaker role. Others might prefer to work outside home, living life to its full potential. There can be both **negative** and **positive** effects of working mothers on their children. While working moms can teach their children some invaluable life skills, they can also make the child feel neglected at times.

Positive Impact on children

- A working mother with some sense of accomplishment and satisfaction can serve as a good role model for her children.
- Inspire her children to pursue their dreams and ambition
- Encourage kids to take responsibility
- Raising independent children prepares them for the real world and inculcates in them sense of responsibility.
- Working mothers spend quality time with their kids to compensate for the amount oftime they do not spend together. Kids also look forward to spending time with their parents
- Financial benefits

Negative impact on children

- Poor-quality day care services can hamper a child's emotional and social development.
- Working mothers after hectic day might fail to provide their kids a safe emotional outlet.
- Problems can arise between parents over the mother's employment. Such parental conflict can adversely affect children. It could damage their self-esteem and make them insecure.

REVIEW OF LITERATURE:**"Pressure and stress is the common cold of the psyche."**

-Andrew Denton

On Stress:

Manikandan.K., Devi.S.N.(2015) conducted a research on stress among adolescent learners. The main aim of this study is to find out the level of stress among adolescent learners. This study intends to assess the stress in the following four dimensions via Physical stress, Emotional stress, Social stress and Academic stress. 350 adolescent learners (both male and female in the age group of 13-19) studied in various higher secondary schools in and around Madurai City. The Adolescent Stress Questionnaire was used for this study. Results shows that the level of stress among adolescent learners is moderate in nature. There is a significant difference of adolescence learners based on Gender, Medium of Instruction, Location of Residence, Type of Schools.

A study on Academic-related stress among private secondary school students in India by Deb.S., Strodl.E., Sun.J. in 2014. The purpose of this paper is to examine the prevalence of academic stress and exam anxiety among private secondary school students in India. 400 adolescent students participated in the research study (52 percent male) from five private secondary schools in Kolkata who were studying in grades 10 and 12. Multi-stage sampling technique was used to select participants for the study and were assessed using a study-specific questionnaire. It was found that 35 and 37 percent reported high or very high levels of academic stress and exam anxiety respectively. It was also found that all students reported high levels of academic stress, but those who had lower grades reported higher levels of stress than those with higher grades. Students who engaged in extra-curricular activities were more likely to report exam anxiety than those who did not engage in extra-curricular activities.

Thaker.R.B., Verma.A.P. conducteda study of perceived stress and coping styles among mid adolescents in 2014. Study was undertaken in randomly selected two schools one each of central board (private) and state board (government) of Ahmedabad city. Apparently 72 healthy students from each school having age 14-16 years were recruited for study after thorough physical examination. Perceived stress measured in 72 students using "perceived stress scale (PSS 14)" developed by Cohen. Coping methods measured by "revised version of coping questionnaire by Folkman and Lazarus". The mean stress score of students scoring high on perceived stress with no significant difference between two schools.

A study on Academic Stress of Higher Secondary School Students was done by Menaha's. and Chandrasekaran in 2013. The purpose of the study was to reduce academic stress and find out the differences in terms of Gender, Type of Family, Type of School management, Family income and stream of study. It comprised of 250 high secondary students and simple random technique was used in this study. The results showed that there was a significant difference in the Academic Stress of Higher Secondary School Students in relation to their gender, type of family and type of school management. On the other hand,no, significant difference was found in Academic Stress Of Higher Secondary School Students in relation to Family Income and Steam of study.

Simuforosa.M. in 2013 conducted a research paper on Stress and Adolescent Development. This study conducted to investigate views of teachers and students on sources of adolescent stress, effects of stress and how stress can be managed. Data collection was

through questionnaires and interviews. A total of 300 people participated in the study. Research findings revealed that due to rapid growth of their bodies, adolescents experience incompatibility of their mental development with their physical changes or with the social environment and as a result they suffer from problems arising from inadequate adaptation. Stress can lead to depression, anxiety and other social emotional problems. The study suggested that with so much pressure in their lives teaching stress management helps prepare adolescents with tools needed to recognise and manage stress in an effective and positive manner.

Kumari,R. and Gartia,R. in 2012 conducted a research on Relationship Between Stress And Academic achievement of Senior Secondary School Students. The study investigated the relationship between stress and academic achievement of senior secondary school students. A total of 120 senior secondary school students randomly selected from six senior secondary schools of North-western Delhi participated in the study. The instrument included Stress Inventory designed and standardized by Dr. Suman Nangia (1990). Academic achievement was taken from the students' previous examinations. Data generated from these instruments were analysed with Pearson correlation. Results showed a positive correlation between stress and academic achievement. Significant difference exists in the academic achievement of students having high, moderate and less stress. Students with high and moderate stress performed better than the students having less stress. Further it was also found that stress and academic achievement are not mediated by gender.

An Investigation into Relationship among Stress, Optimism and Life Satisfaction of Adolescents was conducted by Sumaira.R., Irfan.A.M., Muhammad.H.(2012). The aim of the study was to explore the relationship between stress and optimism of college students, stress and life satisfaction of college students, as well as to investigate the relationship between optimism and life satisfaction among college students. The sample comprised 100 students 50 male and 50 female students studying in four different institutes of Lahore. The Perceived Stress Scale designed by Cohen, Kamarck, and Mermelstein (1983)was used in this study along withThe revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994) and Satisfaction with Life Scale (SWL) developed by Diener, Emmons and Larsen et al., (1985). Results revealed that stress had a significant and inverse relationship with optimism and life satisfaction among students.

Alleyne.M., Alleyne.P., Greenidge.D. (2010) conducted a study on Life Satisfaction and Perceived Stress Among University Students in Barbados. The study assessed life satisfaction and perceived stress among undergraduate university students in Barbados. Self-report questionnaire was used on 172 students and the data was collected from them. Findings indicate that students were more satisfied with relationships, self-image and physical appearance, while they were dissatisfied with campus facilities, quality ofteaching, financial security and job situation. The studyalso found that higher levels of perceived stress were associated with lower levels of satisfaction with life. The major predictors of students' life satisfaction were the living environment, campus facilities, and perceived stress.

Ghaderi. A.R., Venkatesh.K.G. and Kumar.S conducted a study on Depression, Anxiety and Stress among the Indian and Iranian Students in 2009. they wanted to understand and

compare experiences of Depression, Anxiety and Stress among the Indian and Iranian Students. There were total 160 students which contains 80 Indian Students and 80 Iranian students of from students studying in different departments of University of Mysore, Mysore, studying post-graduate and Ph.D. degree courses. The assessment tool used was Depression, Anxiety Stress Scale (DASS). Results showed that was more level of Depression, Anxiety and Stress was found in Indian students than in Iranian students. but gender differences were not found significant.

Hussain.A., Kumar.A and Husain.A in 2008 examined Academic stress and adjustment among High School Students. First objective of this study was to examine the level of academic stress and overall adjustment among public and government high school students and the second objective was to find if there is any relationship between the Academic Stress and Adjustment. Total sample size was 100 out of which 50 students were from public school and 50 were from government school. Class ix students were randomly selected from two different schools. The two major scales used in this research were Sinha and Sinha scale for measuring Stress and Sinha and Sinha scale for measuring adjustment. It was found that the level of stress were higher in students of public schools and the level of adjustment was higher in children of government school. However, inverse but significant relationship was found for both group of students and for each type of school.

A Longitudinal Study of Adolescents' Perceptions of Support and Stress Stability and Change was conduted by Weigel.D.J., Devereux.P., Leigh.G.K.,Reisch.D.B. in 1998.In this study changes were examined in adolescent support and stress over a 7-month period. Three-hundred fifty-two students completed a questionnaire at three points in time over 7 months. Results indicated that mothers were selected most often as the primary support person at each time. Perceptions of parental and family support were key in discriminating adolescents who did or did not change their primary support person. Parental and family support also were instrumental in predicting adolescents' perceptions of stress. The results of this study revealed that parents and, family continued to play an important role in the lives of adolescents.

LIFE SATISFACTION:

Crede.J., Wirthwein.L., McElvany.N., Steinmayr.R.(2015) conducted a research study on Adolescents' academic achievement and life satisfaction along with the role of parents' education. The main aim of the study was to investigate the role of parents' education as a potential moderator of the relationship between adolescents' academic achievement and Life Satisfaction. A sample of German high school students (N = 411) reported parents' educational attainment, as an indicator of family socio-economic status, and students' academic achievement was operationalized by grade point average in five subjects. The conclusion of the study was that only mothers' education functioned as a moderator of the relationship between academic achievement and students' Life Satisfaction. The association between academic achievement and LS was only found in the group of students whose mothers had achieved the same or a higher education (at least high school diploma) as their own children. On the other hand, Fathers' educational attainment, however, was not a significant moderator of the respective relationship.

Aresearch was conducted by Moksnes.U.K., Løhre.A., Lillefjell.M., Byrne.D.G. &Haugan.G. in 2014 on the Association Between School Stress, Life Satisfaction and Depressive

Symptoms in Adolescents: Life Satisfaction as a Potential Mediator. The aim of the present study was to investigate the interrelationships between school-relatedstress (school performance, teacher interaction), life satisfaction, and depressive symptoms, as well as the potential mediating role of life satisfaction on the association between school-related stress and depressive symptoms. A totalof 1,239 adolescents (13–18 years of age) from public elementary and secondary schools in mid- Norway participated in the school-based survey. The data analyses was done using structural equations modelling. The results showedthat stress ofschool performance was significantly and positively related to depressive symptoms and significantly and inversely related to life satisfaction. At the bivariate levels, stress of teacher interaction was associated with more depressive symptoms and reduced life satisfaction. However, these associations were non-significant in the multivariate analyses, controlledfor stressof school performance. A significant inverse association was found between life satisfaction and depressive symptoms.

Bjarnason.T., Bendtsen.P., Arnarsson.A.M., Broup.I., Iannotti.R.J., et. al,(2012) conducted a research on Life Satisfaction among Children in Different Family Structures: A comparative study of 36 Western Socities. The paper examines differences in life satisfaction among children in different family structures.The researchers showed that children living with biological parents reported higher level of life satisfaction than children living with a single parent or parent-step-parent. Research also showed that children in joint physical custody reported significantly higher levels of life satisfactions.

Kelly.J.E conducted a research on assessment of Life Satisfaction in Children as a Means of Prevention and Identification of Risks in 2011. In this research, children with high levels of Life Satisfaction have been correlated with optimal mental health including academic success, attachment with parents and peers, and positive self-concept. In contrast, low levels of Life Satisfaction have been associated with adverse outcomes for children including internalizing and externalizing behaviour, peer alienation, familial discord, difficulties at school, and low self-appraisal. The results indicated a significant positive correlation between children's motivation for school and levels of satisfaction in the School domain. Gender differences were illuminated with girls endorsing higher total satisfaction and higher satisfaction with school compared to boys.

In 2011 Rey,L., Extremera,N. and Pena,M.conducted a research on Perceived Emotional Intelligence, Self-Esteem and Life Satisfaction in Adolescents. The present study examined the relationship between perceived emotional intelligence, self-esteem and life satisfaction in a sample of 316 Spanish adolescents (179 females and 137 males), ranging in age from 14 to 18. Data was collected using three self-report measures: the Trait Meta-Mood Scale, the Rosenberg Self-Esteem Scale and the Satisfaction with Life Scale. Perceived emotional dimensions, particularly mood clarity and repair, showed positive associations with life satisfaction. Self-esteem also correlated significantly and positively with levels of adolescents´ satisfaction with life. More interestingly, results of structural equation modeling indicated that mood clarity and emotional repair had a significant direct and indirect link with life satisfaction in adolescents.

Sun.R.C.F& Shek.D.T.L conducted a research on Life Satisfaction, Positive Youth Development, and Problem Behaviour among Chinese Adolescents in Hong Kong in 2010.

This paper examined the relationships among life satisfaction, positive youth development, and problem behaviour. A total of 7,975 Secondary One students (4,169 boys and 3,387 girls; with most aged 12) of Chinese ethnicity recruited from 48 schools responded to validated measures of life satisfaction, positive youth development and problem behaviour. Results showed that life satisfaction was positively correlated with different measures of positive youth development, these measures were negatively correlated with measures of substance abuse, delinquency and intention to engage in problem behaviour. Data suggests that adolescents having higher levels of positive youth development are more satisfied with life and have fewer problem behaviour, with life satisfaction and problem behaviour negatively reinforcing each other.

Phinney.J.S., Ong.A.D.in 2010 conducted a study on Adolescent-parent disagreements and life satisfaction in families from Vietnamese- and European-American backgrounds in 2010. The aim of the study was to investigate the relationship between adolescent-parent differences in the endorsement of family obligations and adolescent life satisfaction, in families from two differing cultural backgrounds. 238 adolescents and their parents participated in the research, including 135 European-American families and 103 Vietnamese-American families. Results showed that adolescent-parent discrepancies were a strong negative predictor of life satisfaction, across two groups that differ both culturally and demographically.

Antaramian.S.P., Huebner.E.S., Valois.R.F.(2008) conducted a study on Adolescent Life Satisfaction. The study reports on the relationship between family structure and optimal adolescent functioning, as indexed by a sense of satisfaction with life overall and with specific domains (e.g. family, friends, school). The sample included 457 US middle school students who were administered the Multidimensional Students' Life Satisfaction Scale (Huebner, 1994) and one question about family structure that revealed whether students lived in intact, single-parent, or stepparent families. Results of the study indicated that family structure was related significantly to family satisfaction and approached significance for living environment satisfaction, with adolescents in single-parent and stepparent families reporting lower satisfaction in these domains than adolescents in intact families

The research study titled'Life satisfaction in adolescents: the effects of perceived family economic status, self-esteem and quality of family and peer relationships'was conducted by Šarić.Z.R., Žganec.A.B., Šakić.M. in 2008. In this research the aim was to determine to what extent socio-demographic variables, subjective material well-being, aspects of social relationships and personal resources predict adolescents' life satisfaction. The study included a representative sample of 2823 Croatian high school students. The participants completed scales measuring their perception of parental child-rearing practices, family cohesion, support from a close friend and global self-worth. The results showed that adolescents' life satisfaction could be best explained by their higher self-esteem, family cohesion and parental support, and higher perceived material well-being.

Suldo,S,M and Hubener,E,S in 2005 conducted a study that says "is high Life Satisfaction during Adolescents is Advantageous". It was studied that whether extremely high life satisfaction was associated with adaptive and maladaptive functioning. Total 698 secondary level students completed The Student's Life Satisfaction Scale The Student's Life Satisfaction Scale, Youth

Self Report Of The Child Behaviour Checklist, Abberiviated Junior Eysenck Personality Questionnaire, Self-efficacy Questionnaire For Children and Child and Adolescent Social Support Scale. Three groups of students were created based on their life satisfaction reports: very high, average and very low.Students with very high life satisfaction had higher levels on all indicators of adaptive psychosocial functioning, Moreover, it was found that students with very high satisfaction had the lowest scores on all measures of emotional and behavioral problems. Taken together, the findings supported the notion that very high life satisfaction is associated with positive psychosocial functioning.

Suldo, Shannon M.; Huebner, E. Scott conducted a research on "Does life satisfaction moderate the effects of stressful life events on psychopathological behaviour during adolescence?" in 2004. This longitudinal study tested the prediction that adolescents' judgments of life satisfaction moderate the influence of stressful life events on the subsequent development of psychopathological behaviour. Using a sample of 816 middle and high school students. Specifically, adolescents with positive life satisfaction (vs. those who were dissatisfied with their lives) were less likely to develop later externalizing behaviour in the face of stressful life events.

McKnight,C.G., Huebner.E.S., Suldo.S. conducted a research on Relationships among stressful life events, temperament, problem behaviour, and global life satisfaction in adolescents in 2002. The Students' Life Satisfaction Scale, the Youth Self Report (YSR) form of the Child Behavior Checklist, a portion of the Life Events Checklist, and the Abbreviated Junior Eysenck Personality Questionnaire, were administered to 1,201 adolescents in grades 6 through 12 in a small city in the Southeast. Between life satisfaction and Extraversion, a modest correlation was found whereas moderate correlations were found between life satisfaction and Neuroticism and life satisfaction and SLEs. Life satisfaction did not operate as a moderator between SLEs and problem behaviour.

Terry.T., Huebner.E.S. (1995) conducted a research on the relationship between self-concept and life satisfaction in children. A total of 183 elementary school students were administered the Self-Description Questionnaire-1 (SDQ-1) and the Students' Life Satisfaction Scale (SLSS) in order to explore the relationships between self-concept domains and global life satisfaction in pre-adolescent children. Results suggested that children differentiate global life satisfaction from self-concept domains. Also, SDQ-1 domains related differentially to SLSS ratings. Consistent with findings with adolescents (Dew and Huebner, 1994), the Parent Relations domain was the strongest predictor of global life satisfaction for these pre-adolescents. The findings provide additional support for the meaningfulness of the life satisfaction construct with children as well as the multidimensionality of children's subjective well-being.

WORKING AND NON-WORKING MOTHERS:

Mcginn.K.L., Castro.M.R. and Lingo.E.L in 2015 conducted a research titled' Mums the Word! Cross-national Effects of Maternal Employment on Gender Inequalities at Work and at Home'.The research considers how inequalities in public and the private spheres are affected by childhood exposure to non-traditional gender role models at home. Association was tested between being raised by an employed mother and adult men's and women's outcomes

at work and at home. Data was collected from 24 countries. It was found in the research that adult daughters of employed mothers are more likely to be employed, more likely to hold supervisory responsibility if employed, work more hours, and earn marginally higher wages than women whose mothers stayed home fulltime. Maternal employment is also associated with adult outcomes at home. Sons raised by an employed mother spend more time caring for family members than men whose mothers stayed home fulltime, and it was also found that daughters raised by an employed mother spend less time on housework than women whose mothers stayed home fulltime.

Temitope.B.E. in 2015 conducted a research on Effect of stress and anxiety on general life satisfaction among working mothers in Ado-Ekiti, Ekiti State Nigeria. The researchers used survey method, examining the relationship between Stress, anxiety and life satisfaction among working mothers. total sample were 100 working mothers (not less than 17 years of age). The assessment tools used were anxiety rating scale, satisfaction rating scale, satisfaction with life scale and perceived stress scale. Results shows that there is a significant relationship between perceived stress and life satisfaction ($r(98) = .289, <.01$). On the one hand, and significant negative relationship between anxiety and life satisfaction of working mothers on the other hand ($r(98) = -.22, p<.05$). Also stress significantly predicted life satisfaction of working mothers ($t(98) = 2.84, p <.01$).

Seenivasan, P. and Kumar,C,P. in 2014 conducted a research on a comparison of mental health of urban Indian adolescents among working and non working mothers. To estimate the prevalence of mental health problems among school-going adolescents aged 13-16 years in India and compared the mental health status of children whose both parents are employed with those who have stay at home mothers. This study was conducted at two schools of the Chennai Corporation. The mental health status of the students was assessed using the self-report version of the Strengths and Difficulties Questionnaire (SDQ). Conduct problems were the highest (22.6%), followed by Peer problem (12.8%), Pro-social behaviour (12.4%) and Emotional problem (12.2%). 117(23.4%) of the students felt that these problems interfered with Homelife, Friendships, classroom life, leisure activities and difficulties upset or disturbed them .There are 236 students whose mothers are not working and 264 students whose both parents are employed. Mental problems were significantly higher among those children whose both parents were employed, across all categories.

Dunifon,R., Toft,A., Sean,T., Lisbeth, N. and Nielsen,P. in 2013 conducted a research on The Effect Of Maternal Employment On Children's Academic Performance. Using a Danish data set that follows 135,000 Danish children from birth through 9th grade, they examined the effect of maternal employment during a child's first three and first 15 years on that child's grade point average in 9th grade. Results showed that maternal employment has a positive effect on children's academic performance. This is in contrast with the larger literature on maternal employment, which finds no or a small negative effect of maternal employment on children's cognitive development and academic performance.

Study of the Effects of Working Mothers on the Development of Children in Pakistan was conducted by Dr.Almani.A.S., Abro.A., Mugheri.R.A. in 2012. The objective of the study

was to find out the effects of mothers' work on the early growth, training and performance of children. Large sample of 1600 students, 1200 mothers and 800 teachers were purposely selected from different areas of Pakistan. results of the research showed that there was no significant difference found in the children of mothers staying at home and working. As per children mothers' employment is found positive. There is no significant difference between children of employed and non-employed mothers. The attachment between employed mothers and children is decreasing.

Künn-Nelen.A., Grip.A. and Fouarge.D.(2013) conducted a research on the relation between Maternal Work Hours and Cognitive Outcomes of Young School-aged Children. As in most countries maternal employment is increasing as the child enters the school. No negative correlation was found between maternal working hours and child outcomes as is often found for pre-school aged children. Instead, it was found that children's sorting test score is higher when their mothers work part-time (girls) or full-time (boys).

A study was conducted by Tong.L.et.al., in 2009 on relationship of working mothers' parenting style and consistency to early childhood development: a longitudinal investigation. Long-term investigations were conducted over a period of Two years in 41 Japanese government-licensed childcare facilities. Child development was evaluated by childcare professionals and parenting style was assessed by questionnaire. A total of 504 children and their mothers participated in the study. Data collection was carried out in 2004 and 2006. Result of the study revealed the changes in parenting style were significantly related to children's development after 2 years. Further the study suggested,Working mothers should increase interactions with their children in their free time to reduce the risk of developmental delay. Daily childcare support provided by family members or social organizations for long-term working mothers is helpful in mediating the negative relationship of mothers' working with children's development.

Ruhm.C.J in 2003 conducted an research on maternal employment and adolescent development. This study investigates how maternal employment is related to the outcomes of 10- and 11-year olds after controlling for a wide variety of child, mother and family background characteristics. The results suggest that the mother's labour supply has deleterious effects on cognitive development, obesity and possibly risky behaviours such as smoking or drinking, while reducing behaviour problems. These negative consequences are quite small for the average child, however, and usually restricted to relatively long maternal work hours. Less intensive employment is often associated with favourable outcomes and labour supply after the first three years typically has little effect. By contrast, large adverse consequences are frequently obtained for advantaged' adolescents, with negative impacts predicted even for limited amounts of maternal labour supply and for work during the child's fourth to ninth year.

A research was conducted by Tamer.S.K., Mehta.P.K., Warey.P., et all., in 1986 on working educated mothers and its impact on child health. The impact of work by mother on child health was assessed by comparing 200 working educated mothers and their 408 children with 200 non-working mothers and their 440 children. Children's health status was determined by anthropometry, immunization status and morbidity pattern. Significantly more children were

malnourished in the study group. Malnutrition showed a significant co-relation with mother's length of service, type of substitute child care and type of mother's profession. Significant number of children in study group were reported to have psychological problem as perceived by the mothers. Working of the mothers produced a significant nutritional and psychological impact on the children.

From reviewing the number of International researches,the present research study will reveal the level of perceived stress and life Satisfaction among the children of working and non-working mothers in the Indian societal context.The present study was designed to identify the level of Perceived Stress and Life Satisfaction among Children of Working and non-working mothers. Mostly recent studies are either done on perceived stress in adolescents or life satisfaction in adolescents or the on effect of working and non -working mothers on child academic performance or their health and wellbeing., but no research was found by the researcher on the children of working and non -working mother which talks about the stress and life satisfaction in the child. that is the main research gap of this study.

RESEARCH METHODOLOGY:

AIM OF THE STUDY:

The aim of the present research is to study the level of perceived stress and satisfaction in life amongchildren of working and non-working mothers.

OBJECTIVES:

- To study the level of life satisfaction in the children of working mothers.
- To study the level of life satisfaction inthe children of mothers who are not working officially.
- To study the perceived stress level in the children of working mothers.
- To study the perceived stress level in the children of mothers who does not work.
- To compare perceived stress of children between the two group of mothers.
- To understand the difference in the life satisfaction of children of working mothers and Non- working -mothers.

HYPOTHESES:

- There will be significant relationship between Stress perceived by children and satisfaction with life in children of working mothers.
- A significant relationship will be predicted betweenperceived Stress and life satisfaction in children of mothers who are not working.
- A significant difference will be observed between perceived Stress in children of mothers who are working.
- There will be significant relationship in between the level of life satisfaction in children of mothers who are working and mothers who are not working.

SAMPLE:

All total 100 participants were selected (50 for children of working mothers and 50 for children of non -working mothers.) in the age group of 13-18 years using purposive sampling procedure from schools and households in the Delhi and National Capital Region (NCR) area. The participants in the study were in range of class 9th to 12th and all could read and write in the English Language The study consists of two independent groups of "children of working mothers" and "children of Nonworking mothers".

RESEARCH DESIGN:

In the present study Two Independent group design is used.Perceived Stress as one independent group and Life Satisfaction as another independent group .

VARIABLES:

INDEPENDENT VARIABLES:

Working and Non -working mothers

DEPENDENT VARIABLE

Life satisfaction and Perceived stress

TOOLS/INSTRUMENTATION:

DESCRIPTION OF THE TOOLS:

PERCIEVED STRESS SCALE

This scale assesseshow a person perceive their life to be stressful or stress free. It contains ten questions which is rated on five-point scale. The scoring is done with calculating the total score of items. There are reversed items also in this test which are scored in opposite way.

Multi-dimensional Students Life Satisfaction Scale (MSLSS)

This scale measures the level of satisfaction with life on different dimensions. Total there are 40 items which are rated on six-pointLikert scale.

PROCEDURE FOR DATA COLLECTION:

Rapport was formed with the participants with the respondents by the researchers before administering questionnaires. The participants were assured about the confidentiality of their responses. Each of the respondent was provided the basic instructions before filling the tool. Doubts were cleared whenever needed. After completion the participants were thanked for their time and effort. Some precautions were kept in mind while collecting data like following the ethics in data collection in research; it was made sure that respondents were willing to take the questionnaires. Respondents were asked to give honest responses to the questions asked.

RESULT ANALYSIS:

- Firstly, Significant relationship was found between thePerceived Stress level and the Life satisfaction among children of working and nonworking mothers. Using the Pearson r. statistical technique.
- Secondly, the significant difference was found between the perceived stress among children of working and nonworking mothers and life satisfaction among children of working and nonworking mothers. using the t-test.

  Hypothesis 1: There will be a significant relationship between Perceived Stress and satisfaction with life among children of working mothers.

  To analyze the hypothesis, Pearson r correlation was done to find out if there is any significant relation between Stress and Satisfaction with life.The result obtained are presented in **Table 4.1.**

CORRELATION BETWEEN	**CORRELATION VALUE**
Perceived stress and Life Satisfaction	-0.2017

The results show that there is insignificant negative relationship between stress and Life Satisfaction among children of mothers who work, with Pearson r value of 0.2017.

Hypothesis 2: A relationship will be present between stress and satisfaction in lifein children of mothers who are not working.

Correlation between Perceived stress and life satisfaction was found using Pearson r method. Result is shown below:

Table 4.2. Correlation between perceived stress and Life satisfaction among children of non-working mothers.

CORRELATION BETWEEN	CORRELATION VALUE
Perceived stress and Life Satisfaction	0.2672

A significant positive relationship between stress and satisfaction with life among children of non-workingmothers is found. From the analysis which shows that children of mothers who doesn't work have high level of stress and high level of satisfaction in their life.

Hypothesis 3:A significant difference in level of stress in children of mothers who works and who is not working.

T-Test was done to find if there is any difference between level of Stress among children of women's who are working and those who doesn't work. The results obtained are available in Table 4.3.

Table 4.3:

The above table shows the score between Perceived stress in children of working mothers which is 20.12 and stress in children of mothers who are not working, which turned

out to be 13.58, which is lesser than mean score of children of working mothers. The t-test result founded was 2.280 which is significant at 0.05level.

Figure 4.0 : MEANS OF PERCIEVED STRESS AMONG CHILDREN OF WORKING AND MOTHERS WHO ARE NOT WORKING

It is observed from the results that the level of Perceived stress is more among children of mothers who are working than those who are not working at all.That shows that children of working mothers perceive their life to be more stressful.

Hypothesis 4: A significant deviation will be present in level of life satisfaction in children of mothers who are working and not working.

The results are shown in Table 4.4.

TABLE 4.4 :

Name of the tool	Author	Year of Publication	No of items	Reliability	Validity
Perceived stress scale	**Cohen, Kamarck, and Mermelstein**	1994	10	Cronbach's Alpha Reliability .84-.86 Test retest Reliability : .85	.52-.76
Multidimensional Students' LifeSatisfaction Scale	**Huebner.S**	2001	40	.70 - .90	74.5

The mean score of life satisfaction among children of not working mothers in 198 which is more than the mean score of children who has mothers who are working which is 172. The T- Test score is also founded to be 1.67 which is significant at 0.05 level

The means of the scores of Life satisfaction of the children of mothers who are working as well as who doesn't work is shown in figure 4.1.

Figure 4.0 : MEANS OF LIFE SATISFACTION AMONG CHILDREN OF WORKING AND MOTHERS WHO ARE NOT WORKING

Much higher level of satisfaction with life is found in children of women who are not engaged in any official activity than the children of women who work. Therefore the children of mothers who doesn't work are much more satisfied with their life be it in any domain as Family, Friends, School, Living Environment and self.

DISCUSSION:

The level of stress in adolescent is increasing day by day, the amount of stress in children of current generation is far higher than it was in the children of previous generations. There are numerous reasons behind this change like there was much less competition in children

back there at point of our parents' adolescent times than it is today. today there is a neverending race to be on the top giving less importance to knowledge and what you learn, more importance is given to where do you stand in the crowd and one of the most important reason researchers think, is the changed pattern of mothers startingworking full time.

Previously, mothers used to stay at home and take care of their children while fathers used to go out and do the jobs, but due to financial needs and women's choice to do work more mothers are working these days, which is good in one hand as it helps the children to learn qualities from her mother like time management, earning for self and family, being more confident about oneself etc. But on the other hand it has some bad effect on the children like, not having proper attention from their mothers, not getting help in small things, and most importantly the stress which these children feel while their mother is out on work as they have to manage things by themselves like doing their homework, managing to eat food or sometimes even make food for themselves, which ultimately leads to detachment with the mother, affect their child- mother relationship and overall decreased satisfaction with their life.

In the **first hypothesis**, it was expected to have a relationship between the two.

The present study found negative correlation between the stress and satisfaction with lifeinchildren of working mothers. So, the above stated hypothesis, has been rejected.

In **the second hypothesis**, a positive relationship was found which shows that the more the level of stress the more the satisfaction with life is also present.Research studies showed that students with high stress and high mood clarity showed high level of life satisfaction also.(Extremera, N., Duran,A. and Rey,L. , 2009).

In the **Third hypothesis** it was assumed that There will be significant variance in the level of stressin children of both groups. The value of t- test has been found to be 2.28 which is significant at point 0.05 level, which indicates that there is a significant variation in the perceived stresslevel in children of working women and who are not working.

The researches found that stress level was more in working women than non-working women (Sanlier,N. and Arpaci,F, 2007), so it can be understood that it effects the child of the working mother to be more stressed than children of the no- working mothers, as children observe or model their parents , so it can be a reason that children of mothers who are working are more stressed than children of non- working mothers as they learn that from their mother.

However, there can be various causes to the increased level of stress as usual in children of working mothers like:

- the less amount of time spend by mother with child leads to less expression of emotions by children, as a result they feel more stressed,
- their concentration, memory also get affected due to stress in children
- responsibilities of children of working mother increases when the mother is not at home
- academic stress,
- peer pressure.

May be that is the reason the children of this group is not showing appropriate behaviour in school as well as at home. So, **the third hypothesis** is accepted as the t-test score which is 1.66 at also significant at the 0.005 level

In the final **Fourth hypothesis** it was assumed that There will be significant deviation in satisfaction with life among children of working and not working mothers.In the fourth Hypothesis, the T- Test scores of the Life Satisfaction 1.67 which is significant at 0.05 level, which indicates that there isdifference in the level of life satisfaction in children of working and non- working mothers.

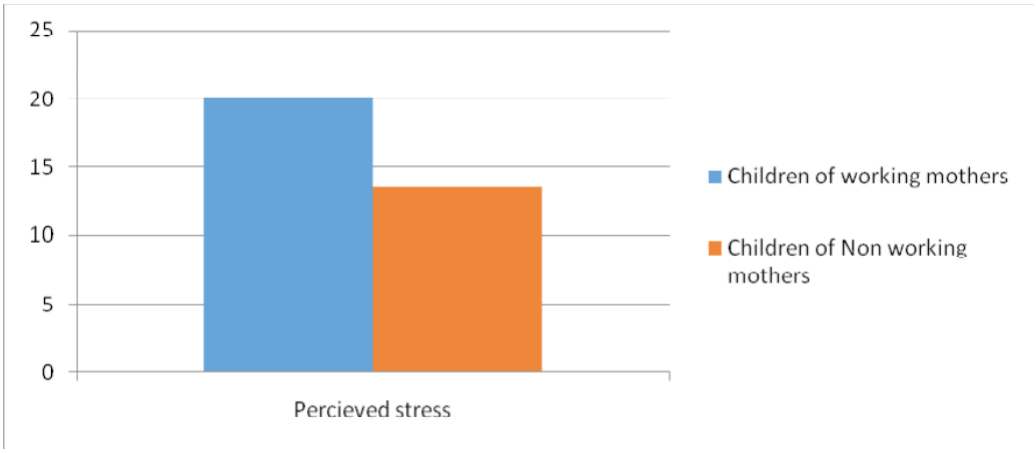
There can be many reasons for children of non- working mothers having more life satisfaction as mothers is always available for the child when the child needs her emotionally, physically which does not happen with children of working mothers because of their busy schedule. They always get the financial support from their mother whenever they need. Children these days search for tuition for their academic help as their mothers are not available, but children of non- working mothers get great help from her in academic matter also. Also the very important point is the family environment which is missing these days in most of the families, they get it when their mother is non- working. Hence, the fourth hypothesis is accepted of the present study as the t test scores also are significant at 0.05 level .

The results also depicts that the mean score of life satisfaction in students of mothers who works regularly is 172 and who does not work at all is 198 which ishigher than the level of satisfaction in children of working mothers, which further support our result.So, the above hypothesis has been Accepted , as there is significant difference in the level of life satisfaction among children of working and non working mothers.

CONCLUSION:

The results of the study showed significant relationship between stress and life satisfaction, which shows that both have an impact on each other and the results also showed that the level of stress is higher in children of working mothers than in children of non -working mothers and the level of perceived stress is also lower in children of working mothers.

Parents especially mothers need to understand the effect of their job on the mental state of their children, due to unavailability of mothers children often feel more stressed and their overall life satisfaction also comes down.The impact of this research will add new vistas to the field of social science.



LIMITATIONS:

However the present study is not devoid of limitations as it was carried out in a short period of time and with limited resources. Some important limitations are:

- Current mood of the child also has an impact on the results.
- Short period of time.
- Size of the sample is limited due to shortage of time period for carrying out the research work
- More number of sample could be considered formore accurate findings with implications.

	Mean of Stress	SD	df	t test score
PERCIEVED STRESS AMONG CHILDREN OF WORKING MOTHERS	20.12	3.97	98	2.280
PERCIEVED STRESS AMONG CHILDREN OF NON WORKING MOTHERS	13.58	3.42		

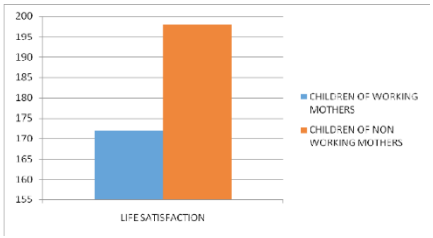
	Mean of children of mothers who are working.	**S.D**	**(df)**	**T score**
LIFE SATISFACTION AMONG CHILDREN OF WORKING MOTHERS	**172**	**17.53**	**98**	**1.67**
LIFE SATISFACTION AMONG CHILDREN OF NON WORKING MOTHERS	**198**	**10.93**		

SUGGESTIONS FOR FUTURE RESEARCHERS:

The following suggestions can be given for further research:

- Further research can be done on other factors leading to stress in children of working mothers.
- Future researches can focus on intensity and the nature of the work
- Role of the moderating factors like socio economic status, parental relation, familial and social support can also be studied.
- Children of urban and rural areas can also be compared to see the impact of environment and other psychological variables on their level of stress and life satisfaction in working and non -working mothers.
- Research can also be done on if part time working mothers' children face the same level of Stress as the children of full time working mothers.
- Future researches can also be done on the effect of culture as far as different states concerned.

- The sample size could be large and representative of the population.
- Cross -cultural and cross- countries comparisons could to be studied further.



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EFFECT OF MINDFULNESS BASED STRESS MANAGEMENT (MBSR) PROGRAM ON MENTAL HEALTH OF NURSES

***Mrs.Sushmita Misra**

ABSTRACT

Mindfulness Based Stress Reduction (MBSR) has become a widely popular program of achieving mental health and well-being since the past two decades. Mindfulness based stress reduction (MBSR) is a program that includes mindfulness, relaxation techniques and compassion, to reduce stress, promote wisdom, enhance compassion towards oneself and others. This article reviews how mindfulness based stress reduction (MBSR) program have been effective in maintaining nurses' mental health and well-being. It also discusses about what Mindfulness Based Stress Reduction (MBSR) is. The reviews of various research indicates that Mindfulness Based Stress Reduction (MBSR) is effective in reducing errors, increasing satisfaction and improving overall health & well-being of the nurses. Therefore, it may be a useful program to be incorporated in everyday practice of nurses. Therefore, as a theory based paper it may be a useful program to be incorporated in everyday practice of nurses in maintaining their normal and progressive mental health .

KEY WORD: Mindfulness, MBSR, mental health and well-being

INTRODUCTION

Nurses are the largest group of health professionals. Maintaining a calm, compassionate attitude is a core nursing skill (1-4).

Maintaining good mental health is crucial for nurses because it can adversely affect attitudes, staff morale, communication, cognition, and quality of care (5-6).

The World Health Organization (WHO) describes Health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". WHO further states that the well being of an individual is encompassed in the realization of their abilities, coping with normal stresses of life, productive work and contribution to their community.

Nursing professionals face extraordinary stresses in our present medical environment. Their profession involves long extended work hours, giving intense emotional support in the face of patients' suffering, having little power and control in physician-controlled work environments. More recently, the problem of nursing shortages and their consequences have exacerbated the situation (7).As a result, nurses are at high risk for chronic stress and burnout.

Studies have frequently found moderate to high levels of mental health problems including stress and burnout among nurses (8-20). Studies also reveal that the consequences of nurse low mental health can be devastating; in addition to causing psychological and physical problems for the nursing professional, (21) low mental health can also result in poorer patient evaluations of the quality of care, (22) lost time and reduced productivity (23) and a premature exit from the profession(24-25).

* *Consultant Clinical Psychologist, Apollo Hospital, Bhubaneswar, plot no 251, Sainik School Rd, Unit 15, Gajapati Nagar, Bhubaneswar, Odisha 751005*

Several authors have reported on a variety of stress reduction programs for both nursing students and nursing professionals (26). Clearly, it is important to continue stress-reduction programs in nurse.

Mindfulness-based Stress Reduction Program as a Stress Reduction Program

The Mindfulness-based Stress Reduction (MBSR) was developed by Jon Kabat-Zinn at the University of Massachusetts Medical Center in the year 1979 and is based on the central concept of mindfulness. The emphasis of mindfulness is staying in the present moment, with a nonjudging, nonstriving attitude of acceptance (27, 28).

Mindfulness is an ancient concept derived from Pali word sati, which can be translated as "presence of mind" (29). While the practices to cultivate mindfulness originate mindfulness originate from traditional eastern meditation, over the past 40 years they have increasingly been applied in healthcare (30). This began with the work of Kabat-Zinn and colleagues at the University of Massachusetts Medical School in the 1970s. According to Kabat- Zinn (1994), who popularized the concept in the West, mindfulness involves purposefully paying attention to the present moment in a curious, open way without judgment (31).

Throughout our lives, we develop beliefs, judgments, and habitual thinking patterns that may result in living in living in an automatic or habit-driven way. Many of us are on "automatic pilot", with our bodies operating in a routine pattern while our minds are somewhere else-usually anticipating future events or ruminating over something that has happened. This "mindless" way of living can limit how we experience life, the choices we make, and the quality of our relationships. It can also exacerbate feelings of stress (32).

Mindfulness practices can help us recognize mental habits that limit out understanding of something or restrict our options for action. Consider, for example, how negative self-talk can grip your attention and circle in your mind like a hamster in a wheel. By being able to notice when your mind is engaged in these common but unhelpful thinking patterns, you can bring attention to the feeling of the breath as it's moving in out of your body or noticing the physical sensations of your body as it is right now. The intentional shifting of the mind to present-moment experience can help interrupt stressful thinking and may enhance your sense of calm and centeredness (33).

Mindfulness is considered an inherent capacity that can be cultivated through various meditative practices. At a basic level, these practices involve paying close attention to the present moment, bringing into awareness what is, as well as how one reacts to what is. Ultimately, the mindfulness practice also involves letting go of judgments (e.g.' labeling thoughts/ responses as good or bad) to truly attend to any experiences that occur to facilitate focusing on any experience that occurs, rather than avoiding some while clinging to others (29).

Mindfulness-based Stress Reduction (MBSR) has been described as "a group program that focuses upon progressive acquisition of mindful awareness of mindfulness (33). Mindfulness is cultivated through the practice of meditation (34). Mindfulness is meditation in action and a technique that can be applied all of the time (35). Potential benefits of mindfulness programs include physical, psychological, and spiritual well- being (36).

The MBSR is taught as an 8-week program that meets approximately 2.5 hours a week and includes a 3-hour daylong retreat between the 6th and7th weeks. Participants are asked to

practice the mindfulness techniques 4 days a week as "homework "and given audiotapes to facilitate this. Group sessions include a combination of formal didactic instruction on topics such as communication skills, stress reactivity, self-compassion and experiential exercises to help participants integrate these concepts. The program is described in detail in Kabat-Zinn's textbook, *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness* (28).

How Mindfulness-based Stress Reduction Program works in nurses?

The need for nurses to be mindful and show compassion is stated in the literature and policy, but there is rarely any discussion of the importance of nurses practicing self-care-thereby becoming more mindful and compassionate towards themselves- or of how this is done (30).

Obviously, it is difficult to truly be present and non-judgmental toward anyone else if one is preoccupied with an internal dialogue of self-criticism and impatience, or if one feels exhausted and depleted (26). As Jackson (37) states," For a nurse to effectively offer physical, psychological, and therapeutic presence requires tremendous attention to personal growth and self-care." Standford (38) puts it simply, "You can't give from an empty basket."

Yet, at the same time that caring and compassion for the patient have been held up as the nursing ideal, self-care has been socialized into nurses' ways of thinking or into their work environments (26).

Self-care is a central facet of the MBSR experience. At the most concrete level, just signing up is an act of self-care. It requires participants to set aside the tremendously busy to be able to attend classes 2 hours a week for 8 weeks. They are then asked to do self-care practices 6 days a week for 30 minutes (26).

There is also another level of self-care that occurs during the MBSR experience. Although the mindfulness practices are a practical concrete way of caring for oneself, they also teach people to be less self-critical, more compassionate, more generous, and forgiving towards themselves. Paying attention to what is happening with compassion is the ultimate act of self-care. This is deeper level of self care (26).

Self-compassion and mindfulness are intertwined: mindfulness reduces self-judgment, giving us an opportunity to reduce negative emotional experiences and make it easier to see ourselves with kindness rather than judgment. Greater self-compassion leads to more positive mental health outcomes, including reduced anxiety and depression (39).

The fundamental concern in nursing management is to explore how well nurses can interact with patients and benefit the patient as well as themselves. The registered nurses who possess factors of mindfulness, empathy and well-being (both physical & psychological), excel in their nursing practice leading to optimal patient outcomes. Factors of mindfulness, empathy, and well-being are inherent human characteristics and can be nurtured in oneself. Reacting to one's inner feelings and outer experience can be an internal struggle for the nurse and affect the internal charactertics of mindfulness, empathy and well-being that are inherent within the nurse. The qualities of mindfulness, empathy and well-being are primary to the nurse's capacity to be therapeutic. Of utmost importance, these attributes may enhance nursing practice and

patient care. Well-being both physical as well as psychological of the nurse's may be improved through an increase in 'presence'. The therapeutic relationship of nursing "being" creates a circle of life and healing. The awareness and being in the present moment from MBSR complement the middle range theory of caring in nursing (40).

To be present with another in the midst of life challenges and suffering is considered fundamental to nursing practice (41). Despite this, multiple studies describe nurses using distancing and avoidance strategies to protect themselves from these experiences (42-44). In addition, scholars suggest that phenomenon of distancing is detrimental to the nurses' well-being and the therapeutic clinical process (42, 43 & 45). Through this analysis, a possible response and prevention to these avoidance strategies appeared in the form of emerging care models that hold mindfulness as central component (46).

Kabat-Zinn (1990) provides the program of MBSR to foster our relationships with others through presence, awareness, nonjudgmental thoughts, and loving kindness (40). The meaning of life through 'being' is not lost through distraction of past or future thoughts.

For nurses, this mental and physical connection may augment their personal health and promote work satisfaction. Thus, nursing practice and the relationship between nurse and patients may be enhanced.

REVIEW OF LITERATURE ON MBSR

Effectiveness of MBSR

A review of the literature finds that MBSR has repeatedly demonstrated positive impacts on health and well-being in a variety of populations. A meta-analysis of 20 studies in a wide-range of clinical populations found consistent improvements in depression, anxiety, coping style, and quality-of life measures (48). Likewise McCarney,Schulz, and Grey (49) conducted a meta-analysis of 11 studies examining the effectiveness of mindfulness-based therapies in redu cing symptoms of depression and reported significant decreases in depression symptomatology.

Another meta-analysis of seven controlled trials of healthy participants found that MBSR had a significant impact on stress compared to no treatment (50). According to Baer, Fisher, and Huss (51), mindfulness leads to improvement in coping skills which in turn enhances self observation. The efficacy of mindfulness practices as a therapeutic intervention for psychological and physical problems has been established in several research studies (51-54).

A recent review also outlines evidence to support the impact of mindfulness meditation on many stress-related medical conditions including psoriasis,type 2 diabetes, fibromyalgia, rheumatoid arthritis, and chronic low back pain, as well as reducing stress among individuals with chronic illness (55).

Additional studies have found objective changes in brain activation, immune system response, and changes in the structure and function of the brain involved in memory, learning, and emotion (56, 57).

Specific to the health care field, a review of 10 studies of the impact of MBSR on health care professionals' health and wellness found that MBSR consistently reduced stress and anxiety and improved positive effect, while also decreasing emotional exhaustion (58).

Effectiveness of MBSR in Nursing Professionals

Although there has been limited research involving the impact of MBSR on nurses separate from other health care professionals, studies have found statistically significant improvements in mood and burnout pre- and post-MBSR intervention, and among MBSR intervention groups compared to control groups (59). In addition to improved mood and decreased burnout, Frisvold, Lindquist, and McAlpine (60) reported that nurses completing an MBSR program described in qualitative interviews had stronger interpersonal communication and increased self-awareness. The outcome was due to nurses becoming more mindful and reflective, which improved their effectiveness at dealing with stress, and an ability to take hold of their lives. Although the above research has demonstrated that MBSR can reduce stress and burnout, and improve health, however other potential benefits from MBSR, including increased serenity, empathy, and self-compassion, are not much probed. On the other hand these are critical to the delivery of health care services in particular and are also important factors for those in leadership roles, as well as those in job roles with high customer contact.

A review of 17 studies of empathy training for nurses concluded that it is possible to increase nurse empathy(61). MBSR has been shown to significantly increase empathy among physicians(62,63) as well as among nursing students(64,65) medical and premedical students (66)

The largest study of mindfulness in the workplace by Wolever, Bobinet,McCabe, Mackenzie, Fekete, Kusnick, &Baime, (67) compared mindfulness-based intervention with therapeutic yoga and with a control group and compared online versus in-person versions of each program. Two hundred thirty-nine employees were enrolled. Compared to the control group, participants in the mind–body interventions showed significant decrease in perceived stress, significantly greater improvements in sleep quality, and heart rate variability. The two delivery mechanisms produced equivalent results. They also included a group of inter professional students preparing to enter helping professions (nursing, social work, psychology, counseling, and teaching), a 6-week mindfulness group work intervention resulted in reductions in perceived stress and increase in self-compassion.

Two research studies focused on nurses and nursing assistants working in hospital settings and demonstrated a statistical significant increase in mindfulness and significant decrease in emotional exhaustion (26, 52). In the study by Cohen-Katz and colleagues (26), 27 participants were recruited and randomized to either MBSR or a wait list. Statistically significant differences were found between the intervention group and the wait list on the mean scores post intervention for mindfulness. The within-group analysis on the intervention group demonstrated statistical significant reductions in emotional exhaustion on the Maslach Burnout Inventory (MBI) scale immediately post intervention and 3 months later.

In a sample of 30 nurses and nursing assistants, Mackenzie, Poplin, & Carlson, (52) conducted a randomized control pilot to study the efficacy of a condensed version of MBSR utilizing the works of Jon Kabat-Zinn (47) and the authors own personal experience compared to a wait-list control group. The intervention group included four 30 minute group sessions. Measures of burnout, work satisfaction, stress and relaxation were completed at baseline and post training. Repeated measures analyses of variance (ANOVA) were performed on the effects of group participation over time on the subscales of burnout, sense of coherence, life

satisfaction, relaxation and work satisfaction. Statistical significant effects were found in emotional exhaustion, depersonalization, and job related personal accomplishments between the intervention group and the wait list. No statistically significant findings were obtained for work satisfaction or sense of coherence.

CONSLUSION

Mindfulness and self-compassion are useful in helping any individual cope with pressures of everyday life but may be even more useful in healthcare, where pressures are great and ability to deliver compassionate care is fundamental(30). The findings of the above mentioned studies are useful in guiding the development of intervention programs for nurses to assist in increasing their satisfaction, reducing medical error, and improving the overall health and well-being. The MBSR program may be useful intervention for nursing management to incorporate in everyday practice for nurses, orientation programs and continuing education.

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PHYSICAL FITNESS AND YOGA PRACTICE REDUCES DEPRESSION

***Dr. Binaya Bhusan Mohapatra,**
****Ms Chinmayee Mohapatra,**

ABSTRACT

Depression is a common but serious mood disorder. It causes severe symptoms that affect how you feel, think, and handle daily activities. As depression is increasingly common in present days, especially in adolescents, various research studies have conducted on effectiveness of different strategies as cognitive behavioural therapy, physical exercise, meditation, yoga, aerobic exercises, medication etc. on reducing depression. In some of other cases, surveys are conducted on comparing the depression level of different socio-economic status, cultural background, gender (male/female), age group. This study was conducted for showing the effectiveness of physical exercises and yogic practices, whether these are significant in reducing the level of depression among adolescents and which is more effective. 200 college students are randomly selected and used as sample for this study, from which 100 are provided with physical exercise, and other 100 are with yogic practices for a session of 2 week period. After comparing the pre-session and post-session scores and values it was revealed that physical exercise is highly significant in reducing depression level with adolescents than yogic practice.

KEY WORD: Physical Fitness, Yoga Practice & Depression

INTRODUCTION

Depression is a state of sadness, feeling down, having loss of interest or pleasure in daily activities. These are symptoms familiar to all of us .but, if they persist and affect our life substantially, it may be depression. Depression is increasingly common in children.

Everyone experiences an occasional blue mood. Depression is a more pervasive experience of repetitive negative rumination, bleak outlook and lack of energy. It is not a sign of personal weakness or a condition that can be willed or wished away. People with depression can merely pull themselves together and get better.

They are also in grief, painful feelings come in waves, often intermixed with positive memories of the deceased. In major depression, and mood and interest are decreased for most of two weeks. Self-esteem is usually maintained. In major depression, feeling of worthlessness and self-loathing are common.

Even in the most severe cases, depression is highly treatable. The condition is often cyclical and early treatment may prevent or forestall recurrent episodes. Many studies show that the most effective treatment are cognitive behavioural therapy, physical exercises, meditation, yoga etc.

**Vice-Principal/Asst.Professor of Special Education,Jewels International Chetana College Of Special Education,Bhubaneswar-13.Odisha, India+91 9158507607, bm73.03@gmail.com*
*** M.A in Applied Psychology, Jewels International Chetana College Of Special Education,Bhubaneswar-13.Odisha, India. (M)8847895924,Mail ID-mohapatrachinmayee7@gmail.com*

PHYSICAL EXERCISE –

Physical exercise means any bodily activity that enhance or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles, and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the 'disease of affluence', such as heart diseases, cardiovascular disease, type 2 diabetes and obesity as well as also for depressive people.

EFFECT OF YOGA ON DEPRESSION-

a) Stress Relief - Yoga reduces the physical effects of stress on the body. By encouraging relaxation, yoga helps to lower the levels of the stress hormone cortisol. Related benefits include lowering blood pressure and heart rate, improving digestion and boosting the immune system as well as easing symptoms of conditions such as anxiety, depression, fatigue, asthma and insomnia.

b) Pain Relief - Yoga can ease pain. Studies have demonstrated that practicing yoga asanas (postures), meditation or a combination of the two reduces pain for people with conditions such as cancer, multiple sclerosis, auto-immune diseases and hypertension as well as arthritis, back and neck pain and other chronic conditions. Some practitioners report that even emotional pain can be eased through the practice of yoga.

c) Better Breathing - Yoga teaches people to take slower, deeper breaths. This helps to improve lung functioning, trigger the body's relaxation response and increase the amount of oxygen available to the body.

d) Flexibility - Yoga helps to improve flexibility and mobility, increasing range of movement and reducing aches and pains. Many people can't touch their toes during their first yoga class. Gradually they begin to use the correct muscles. Over time, the ligaments, tendons and muscles lengthen, increasing elasticity, making more poses possible. Yoga also helps to improve body alignment resulting in better posture and helping to relieve back, neck, joint and muscle problems.

e) Increased Strength - Yoga asana (postures) use every muscle in the body, helping to increase strength literally from head to toe. And, while these postures strengthen the body, they also provide an additional benefit of helping relieve muscular tension.

f) Weight Management - Yoga (even less vigorous styles) can aid weight control efforts by reducing the cortisol levels as well as by burning excess calories and reducing stress. Yoga also encourages healthy eating habits and provides a heightened sense of well-being and self-esteem.

g) Improved Circulation - Yoga helps to improve circulation and as a result of various poses. More efficiently moves oxygenated blood to the body's cells.

h) Cardiovascular Conditioning- Even gentle yoga practice can provide cardiovascular benefits by lowering resting heart rate, increasing endurance and improving oxygen uptake during exercise.

i) Focus on the Present - Yoga helps us to focus on the present, to become more aware and to help create mind/body health. It opens the way to improved concentration, coordination, reaction time and memory.

j) Inner Peace - The meditative aspects of yoga help many to reach a deeper, more spiritual and more satisfying place in their lives. Many who begin to practice for other reasons have reported this to be a key reason that yoga has become an essential part of their daily lives.

EFFECT OF PHYSICAL EXERCISE ON DEPRESSION

Studies show that exercise can treat mild to moderate depression as effectively as antidepressant medication—but without the side-effects, of course. In addition to relieving depression symptoms, research also shows that maintaining an exercise schedule can prevent you from relapsing.

Exercise is a powerful depression fighter for several reasons. Most importantly, it promotes all kinds of changes in the brain, including neural growth, reduced inflammation, and new activity patterns that promote feelings of calm and well-being. It also releases endorphins, powerful chemicals in your brain that energize your spirits and make you feel good. Finally, exercise can also serve as a distraction, allowing you to find some quiet time to break out of the cycle of negative thoughts that feed depression.

a) Sharper memory and thinking- The same endorphins that make you feel better also help you concentrate and feel mentally sharp for tasks at hand. Exercise also stimulates the growth of new brain cells and helps prevent age-related decline.

b) Higher self-esteem- Regular activity is an investment in your mind, body, and soul. When it becomes habit, it can foster your sense of self-worth and make you feel strong and powerful. You'll feel better about your appearance and, by meeting even small exercise goals, you'll feel a sense of achievement.

c) Better sleep- Even short bursts of exercise in the morning or afternoon can help regulate your sleep patterns. If you prefer to exercise at night, relaxing exercises such as yoga or gentle stretching can help promote sleep.

d) More energy- Increasing your heart rate several times a week will give you more get-up-and-go. Start off with just a few minutes of exercise a day, and increase your workout as you feel more energized.

e) Stronger resilience- When faced with mental or emotional challenges in life, exercise can help you cope in a healthy way, instead of resorting to alcohol, drugs, or other negative behaviors that ultimately only make your symptoms worse. Regular exercise can also help boost your immune system and reduce the impact of stress.

REVIEW OF LITERATURE

Different studies have differential opinion about the role of physical exercises on depression.P.C. Dinas, Y.Koutedakis, A.D. Flouris (2010) researched on "Effect of exercise

and physical activity on depression". It was shown in their study that depression is a very relevant mental disorder affecting 340million people globally and is projected to become the leading cause of disability and the second leading contributor to the global burden disease by the year 2020. The evidence published to date in order to determine whether exercise and physical activity can be used as therapeutic means for acute and chronic depression. Topics covered include the definition, classification criteria and treatment of depression, the efficacy if exercise and physical activity as treatments for depression, properties of exercise stimuli used in intervention programmes as well as efficacy of exercise and physical activity for treating depression in diseased individuals. Then it was found the presented evidence suggests that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatment.

Robert Stanton, Peter Reaburn (2013) researched on Physical Exercise and the treatment of depression: A review of the physical exercise programme variables. A systematic review was undertaken on all RCTs reporting significant treatment effect of exercise in the treatment of depression. Studies were analysed for exercise frequency, intensity, session duration, exercise type, exercise mode, intervention duration, delivery of exercise, level and quality of supervision and compliance. Study quality was assessed using the PEDro scale. Five RCTs published since 2007 met the inclusion criteria and were subsequently analysed. Most programmes were performed three times weekly and of moderate intensity. From of the study found that there is evidence for the use supervised aerobic exercise, undertaken three times weekly at moderate intensity for a minimum of seven weeks in the treatment of depression.

Sebastian Eriksson and GunvorGard (2013) researched on physical exercise and depression. The objective was to review studies which used physical exercise as an intervention to react major depression, focusing on methodology, mechanisms of outcomes. Eight studies fulfilled the inclusion criteria and were included. Seven of the eight studies showed significantly improved mood and reduced depression. Physiological and psychological mechanisms may be more relevant to mechanisms of action factors. Physical exercise had the same positive effect as sertraline in two studies. Also physical exercise and sertraline given together in one of two studies had a positive effect. Three studies measured an increase in aerobic capacity, two with correlated mood improvements. One showed a correlation between increases muscles strength and reduced feeling of depression. It was found from this research that physical exercise can be an effective treatment against depression. A mood enhancing effect of exercise was identified in the interventions regardless of the mechanism of action. There is a need for more highly controlled clinical intervention studies treating depression with physical exercise, focusing on increasing the knowledge about mechanisms of action, type of exercise and frequency of exercise.

Egilw. Martinsen,(2014) Researched on physical Exercise and Depression. And in most population studies have found that physically active individuals have reduced probability for developing depression. Exercise is more effective that treatment, and not significantly different from antidepressant medication and psychotherapy. These finding are limited to mild to moderate forms of unipolar depression. Several hypothesis may explain how exercise may affect mood, and most of the focus has been on neurobiological and psychological mechanisms.

Murray CJL, Lopez AD,(2010) researched on Effects of Exercise and physical activity on depression. In their researched evidence suggests that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatments.

Karen Pilkington, Graham Kirkwood, Hagen Rampes, Janet Richardson,(2013) Researched on yoga for depression. The research evidence on which they have found that yoga based interventions may prove to be an attractive option for the treatment of depression. The aim of this study is to systematically review the research evidence on the effectiveness of yoga for this indication. Searches of the major biomedical database including MEDLINE, EMBASE, CINAHL, PsyINFO and the Cochrane library were conducted. Specialist complementary and alternative medicine (CAM) and the IndMED databases were also searched and effects made to identify unpublished and ongoing research. Overall, the initial indication are of potentially beneficial effects of yoga interventions on depressive disorder.

Arndt Bussing, Andreas Michalsen, Sat Bir S. Khalsa, Shirley Telles and Karen J. Sherman shows that the effect of yoga interventions of mental health and physical health, by focussing on the evidence described. Collectively these reviews suggest a number of areas where yoga may will be beneficial, but more research is required. For virtually all of them to firmly establish all of them to firmly establish such benefits. the herogenity among interventions and conditions studied has hampered the use of meta-analysis which indicate beneficial effects of yoga interventions and there are several randomized clinical trails (RCTs) of relatively high quality indicating beneficial effects of yoga for pain-associated disability and mental health may be practiced at least on part as a self-care behavioural treatment, provides a life-long behavioural skill, enhances self-efficiency and self-confidence and is often associated with additional positive side effect.

RamajayamGovindraj, Sneha Karman, Shiva Ramavarambally and B.M. Gangadhar (2009) Researched on yoga is a multifaceted spiritual tool with enhanced health and well-being as one of its positive effects. The components of yoga which are very commonly applied for health benefits are asana (physical postures), pranayama (regulated breathing) and meditation. In the context of asana, yoga resembles more of a physical exercises, which may lead to the perception that yoga is another kind of physical exercise. The article aims at exploring the commonalities and differences between yoga and physical exercise on terms of concepts, possible mechanism and effectiveness for health benefits. Physical exercises and physical components of yoga practices have several similarities, but also important differences. Emphasis on breath regulation, mindfulness during practices, and importance given to maintenance of postures are some of the elements which differentiate yoga practices from physical exercises.

Saeed SA, Antonacci DJ, Bloch RM. (2009) researched on physical exercise, yoga and meditation for depressive and anxiety. Anxiety and depression are among the most common conditions cited by those seeking treatment with complementary and alternative therapies, Such as exercise, meditation and yoga. Several studies of exercise and have demonstrated therapeutic effectiveness superior to no-activity controls and comparable with established depression and anxiety treatments. High-energy physical exercise and frequent aerobic exercise

reduce symptoms of depression more than less frequent or lower-energy physicalexercise. Mindful meditation and physical exercise have positive effects as adjunctive treatments for depressive disorders, although some studies show multiple methodological weaknesses for depression.Physical exercise and yoga have also show positive effects, but there are far less data on the effects of physical exercise on anxiety than for physical exercise on depression. Medication have not shown effectiveness as alternative treatments for depression and physical exercise.

Catherine Woodyard, Pilkington et al,Rily (2009) researched on therapeutic of yoga and to provide benefits of regular yoga practice. As participation rates in mind-body fitness programmes such as yoga continue to increase, it is important for health care professional to be informed about the nature of yoga and the evidence of its many therapeutic effects.Therapeutic yoga is defined as the application of yoga postures and practice to the treatment of health conditions and involves instruction in yogic practices and teaching to prevent reduce or alternative structural, physiological, emotional and spiritual pain, suffering or limitations.Results from this study show that yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery fromand treatment of addiction, reduce stress, anxiety, depressionand chronic pain, improve sleep patterens,and enhance overall well –being and quality of life.

RATIONALE

Involvement in structured exercise has shown promise in alleviating symptoms of clinical depression. Since the early 1900s, researchers have been interested in the association between exercise and depression. Other findings support the potential of yoga as a complementary treatment of depressed patients who are taking anti-depressant medications but who are only in partial remission. Early case studies concluded that, at least for some, moderate-intensity exercise should be beneficial for depression and result in a happier mood. However, researchers have remained interested in the antidepressant effects of exercise. Many studies have examined the efficacy of exercise to reduce symptoms of depression, and the overwhelming majority of these studies have described a positive benefit associated with exercise involvement.

Since the 1970s, meditation and other stress-reduction techniques have been studied as possible treatments for depression and anxiety. One such practice, yoga, has received less attention in the medical literature, though it has become increasingly popular in recent decades.

Hence the present study is designed to assess the level of effectiveness on both physical exercises and yoga on persons with depression. Moreover, a number of studies as seen in the review, have indicated the effect of physical exercises and yoga on depressive persons, but none of such studies compared between the level of effectiveness of physical exercises and yoga, as well in the case of adolescents with depression. Keeping in view the above, the following objectives and hypothesis can be set with to assess the healing effect of physical exercise and yoga in case of adolescents with depression.

OBJECTIVES-

- To assess the effects of yogic practices on depression
- To find out the relative effectiveness of Physical exercises on depression among adolescents.

PURPOSED HYPOTHESIS-

Physical exercises and yogic practices according to the following hypothesis can be taken as reduce depression among adolescents.

- Yogic practices will reduce depression among adolescents.
- Physical exercises will reduce depression among adolescents.

METHODOLOGY

REARCH PURPOSE

In primary purpose of the present study works to find out the label of effectiveness of both physical exercise and yogic practices among adolescents.

SAMPLE

200 Students within 17 – 19 yrs., age range were randomly chosen from Adikavisarala Das College, Tirtol of the city Cuttack ages subjects.Out of which 100 subjects were given phusical xercise and 100 Ss were given Yoga practice, for a session of two weeks. They were tested in a pre and post session purpose.

TOOL USED-

Both for the screening and finding procedure Beck's depression inventory was used.

Beck's depression inventory (BDI):Beck's depression inventory is a self – scoring Tools. BDI consists of twenty items. Age it is a set of questionnaire, the subject is given the questionnaire set and asked to circle the respective number of is by he answer.

After the subject completed the questionnaire, the score for each of the twenty questions will added up, by counting the number to the right of each question are marked. The highest possible total for the whole test would be sixty-three. This would mean the subject circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean the subject circled zero on each question. Thus the evaluation of depression according to the Table below.

PROCEDURE-

100 adolescents from Adikavisarala Das College, were selected randomly and among them the depressive persons or cases are identified through Beck's Depression Inventory tools. Among them selected 20 adolescents were taken as sample for the study. The diagnosed scores of 20 adolescents are taken as pre – session scores. After getting the screening scores by through BDI, 2 weeks of physical exercise and yogic practice training session was given. Among 20 adolescents 10 are given 3 of physical exercises where as other 10 are given 3 0f yogic practices, to study on which is more effective. Each training sessions are given for 30 minutes of time limit. The skipping ropes, cycles, mat, running shoes were provided to the cases as the test materials.

After completion of whole 2 weeks of training session period of 3 physical exercise and 3 yogic practices, again Beck's Depression Inventory questionnaire was given. Which is concerned as post - session score. The post-session score was compared to the pre – session score to deter mind the effectiveness of physical exercise and yogic practice on depression, weather it is helpful in reducing depression or not.

RESULTS

Table no-01

Analysis of pre-administered and post-administered variance performed on the depression scores on physical exercise of students belonging to adolescents, revealed that the post-administered depression level of adolescents, is differ high significantly {t (7.40), p>0.01} see table1. Hence, it can be said that the post-administered physical exercise is revealed helpful in reducing depression levels among adolescents.

Table 1 .Mean pre and post-administrative depression scores of adolescents of physical exercise group.

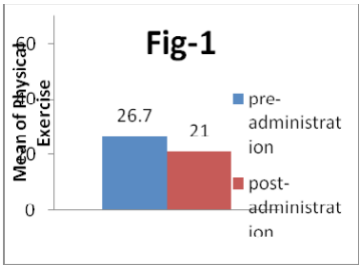
Total score	Levels of depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	moderate depression
31-40	Severe depression
Over 40	Extreme depression

Sig P> 0.05

Graph 1 . Mean pre and post-administrative depression scores of adolescents of physical exercise group.

Analysis of pre-administered and post–administered variance performed on depression scores on yogic practice of students belonging to adolescents revealed that the post–administered depression level of adolescents is differ insigficantly {t (1.33), p<0.05} (see table). Hence, it

Type	Total score	N	Mean	?deviationsquare	S? &S?	t"
Pre-administered	267	10	26.7	(?x^2)6.65	(S?)2.10	df=N-1=9, α level (0.05)=7.40
Post-administered	210		21	(?y^2)4.83	(S?)1.50	



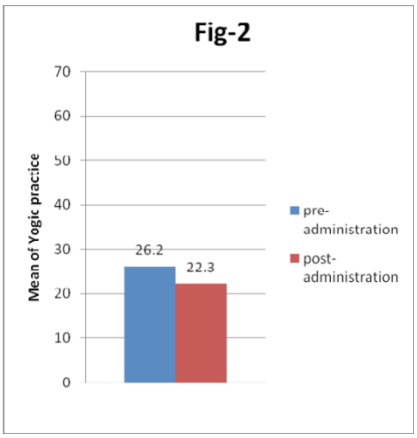
can be said that the post-administered of yogic practice with depressive adolescents is revealed ineffective in reducing depression level among them. In other words, yogic practices with depressive adolescents is not so helpful in reducing depression level among adolescents.

Table-02 : *Mean pre and post-administrative depression scores of adolescents of yogic practice group*

Type	Total score	N	Mean	?deviation square	S? &S?	t"
Pre-administered	262	10	26.2	(?x^2)8.46	2.63	df=N-1=9, α level (0.05)=1.3 3,
Post-administered	223		22.3	(?y^2)6.12	1.93	

Sig P ‘‘‘ > 0.05

Graph { Mean pre and post-administrative depression scores of adolescents of yogic practice group.



DISCUSSION AND CONCLUSION

In this study, it has been attempted to find out the effectiveness of both physical exercise and yogic practice on depressive adolescents and to find out which is more effective in reducing depression among adolescents. Hence, the primary focus was to compare the effectiveness of both physical exercises and yogic practices, for which the pre-administered test and post-administered test scores were taken into consideration.

In the result it has been noticed that the post-administered test scores indicating the effect of physical exercise and yogic practices on depression was lower, highlighting the effect of yogic practices on depression level. It was further revealed that the effect of physical exercise was more prominent being very significant ($p < 0.01$) whereas the effect of yogic practice was significant at 0.05 level.

A number of studies have provided evidences about the fruitful effectiveness of physical exercises and yogic practices in reducing depression among old age, patients, adolescents, substance users. P.C. Dina's, Y.Koutedakis, A.D. Flouris suggested that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatment. Karen Pilkington, Graham Kirkwood, Hagen Rampes, Janet Richardson (2013) proved beneficial effects of yoga interventions on depressive disorder by researching the major biomedical database including MEDLINE, EMBASE, CINAHL, PsyINFO and the Cochrane library.

In the summary, the overall findings of this study on "Effects of physical exercise and yogic practice on depression in adolescents" strongly suggest a number of things like, both of the physical exercise and yogic practices are effective on reducing depression among adolescents. But the physical exercise concluded as more effective in reducing depression among adolescents.

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NEURO-OCULAR DECISION GUESTIMATES

***Lt Col (Dr.) Jyotirmaya Satpathy**

****Prof. (Dr.) Ahalya Hejmadi**

ABSTRACT

As an introduction, neuro - management parallels cognitive science and has bridged contrasting fields of management, psychology and neuro - management - oriented science with aim of providing single theory of management - orientedbehaviour . Herein, consilience operates tools for modelling behaviour to understand processes that connect neuro - mechanisms by which managers decidefor managing creative organisation. Neuro-ocularfindings pose challenge to standard management perspective by questioningas how managers craft decisions for managing creative organisations. Different disciplines approach through characteristically different techniques. Neuro-oculardecision making has emerged as an inter-disciplinary effort to bridge this gap. Integration offers exciting potential for deciphering neuro-ocular decision transactions through mechanistic understandings of neuromanagement - oriented processesand neural computations. How to handle brains behind businesses in age of dramatic change and growing uncertainty? What are the coherent dynamics underlying prediction, control and decision-making? ***Problem statement*** *is that, in eye simulations, decision is represented by spots of neural activity linked to stimulating prospects for rational processing that help in gaining, possessing and tracing management - oriented decision formation replicating computational decision formation. Purpose of paper is to elucidate principles and mechanism in neuro-ocularinteractions that contribute stimulus to management - oriented decision towards managing creative organisation.* ***Reviews of Literature*** *offerscant studies on the subject.* ***Methodology*** *uses Kowler and Fang models that employ brain - eye movement.* ***Results*** *indicate characterising effect of brain - eye interactions to explain and describe 'decision making. This encourages cross-fertilization of perspectives that highlight synergistic approach of decision makingmanaging creative organisations. As a* ***conclusion****, paper attempts to explore phenomena through neuro-ocularaction, management - orienteddecision and reasoning processes on cognitive models of decision. This provides framework for understanding and conducting research at intersection of brain and eye - based models capable of predicting management - oriented behaviour capable of explaining managing creative organisations.*

KEY WORD : Neuro-OcularDynamics, Neuro - Management, Neural Simulations, Management - oriented Behaviour and Managing Creative Organisations.

INTRODUCTION :

This is a 'world of contracts '. Management - oriented decision behaviour shapes lives. 21st century is 'Century of Humanoid Eyes'. Contemporary decision behaviour discipline reveals

** Faculty, Academics Department National Defence Academy, Pune, India Mail : jyotisatpathy@gmail.com*

*** Professor, School of Behavioural Sciences and Psychology*
University of Maryland University College, Adelphi, Madison, USA

that in order to act inexhaustibly in multifaceted business circumstances, manager needs to appreciate decision behaviour changes in fundamental working of brain. It studies how management - oriented decision behaviour shape understanding of brain and guide coherent decision behaviour geometry towards decision behaviour (Satpathy and Gankar; 2016)? Its promise suggests a fundamental change in how managersdeliberate, perceive and model decision behaviour in context.In last decades, progress has been made in understanding dynamics of (neurobiology) decision making. Decision making isarudimentarymanagement - orientedact. It is a multidimensionaland polygonal playfield. Revolutions originate from management (science of 'choice behaviour') and Psychology (discipline of 'thought''). Eyes scholarship has undertaken a revolution to lesser echelons in hierarchically classified structures has spotlighted on mind - brain - body relation, on how cerebral actions are concomitant to neurophysiological chronicles. There are scrimmages to reveal secrets of eyes.

Neuroscience; science of how eyes, has given birth to neuro - behavioural management, which endeavours to understand how and why managers make decisions. Turf brings together emotional and sophisticated computational theories, world of contracts ', from micromanagement, understanding of emotional influences on behaviour from psychology and functional neural imaging from neuroscience (Kijpokin; 2016). Issues are; how can we make the best decisionworld of contracts '? How can we influence management - orientedeyes in business decisions for managing creative organisation'? How can we bargain 'hot buttons' in management - orientedeyes for managing creative organisation? This provides abstract geometry for conducting neuro (management - oriented) research at intersection of neuro (management - oriented) sciencefor managing creative organisation, raises central issues and offer solution through measurements of brain activity at management levels of analysisfor managing creative organisation (Satpathy and Gankar; 2016).Each experience eyes perceive is unique. Coordinated shifts of neuronal activity in prefrontal cortex are associated with strategy adaptations in behavioural tasks. Eye needs flexibility to constantly adapt. This is achieved by each event being perceived as new. It is advocated that evidence from neuroscience, inquiry of eyes mechanisms, 'cannot refute (management - oriented) models because the latter make no assumptions and draw no conclusions about physiology of eyes' (Wolfgang; 2005). Decision makingfor managing creative organisation, conducted by eyes as part of higher - order-processing mechanism, is characteristic from mechanism of how decision is derived.

Select Considerations and Objectives :

Who has never been in multifaceted circumstances of hard events to take paramount decisionfor managing creative organisation, weighing optimistic / unenthusiastic aspects for managing creative organisationand obliged to accept some riskfor managing creative organisation? How to account information about subjective valuefor managing creative organisation, risk, ambiguity and timing when making decisionfor managing creative organisation? How does this criterion differ based upon the approach selectedfor managing creative organisation? What criterion exists in strategyfor managing creative organisation? Research has documented rational and strategic considerations that explain choice behaviour for managing creative organisation. What distinguishes dissimilar criteriafor managing creative organisation? Are there direct correlations that exist between approachesfor managing creative organisation?

What are the qualitative aspects of dissimilar criteriafor managing creative organisation? How might identifiable variables affect selection of decision-making criteriafor managing creative organisation? How flexible are dissimilar models based upon current practicesfor managing creative organisation? Is there an identifiable relationship between external variables and decision making criterion usedfor managing creative organisation? What kinds of algorithms and computations underpin decision process itselffor managing creative organisation? What eyes areas are involved and how do these processes implemented at neural level (Satpathy; 2015)? How is management business decisions made in multifaceted environmentsfor managing creative organisation? How can emotional and management sciences harness digital data for logical inquiryfor managing creative organisation? What are then the crucial questionsfor managing creative organisation? What is its neuro - ocular domainfor managing creative organisation? What are its accepted optimal techniquesfor managing creative organisation? What are the potential benchmarks by which research in the field will be evaluatedfor managing creative organisation?

Problem statement is that, in eye simulations, decision is represented by spots of neural activity linked to stimulating prospects for rational processing that help in gaining, possessing and tracing management - oriented decision formation replicating computational decision formation. Purpose of paper is to elucidate principles and mechanism in neuro-ocularinteractions that contribute stimulus to management - oriented decision towards managing creative organisation.

MethodologyandResults :

Exploration on management - oriented decision making has extended from management - oriented decision behaviourist approach to cognitive approach. In neural computational simulations, each Management - oriented decision during decision task is represented by node of neural activity. Decision related neural activity has components of intensification of activity and decision inception for neural activity to overcome for decision to be completed. Eye movements are central measure of management - oriented decision. eye movements are indissolubly linked to optical consideration as both are prime tools for choosing stimulating shares of chromatic prospects for enriched perceptual and rational processing. Investigating eye movements is expedient in providing evidence of orientation of management - oriented decision management - oriented decision behaviour replicating computational decision during decision formation. Role of eye movements, intentional or reflex, help in gaining, possessing and tracing visual inducements, during Management - oriented decision formation is not entirely clear.

What happens to a sensory signal when it reaches a conscious stage of processing as opposed to being processed pre - attentively and outside of awareness? Is it possible to predict what a person is thinking of, or even what they are planning to do,base alone on their current brain activity? One example is the emerging research on the role of attention and awareness for human decision-making via neuro - ocular approaches for managing creative organisation. Another important area in which awareness plays important role is clinical research via neuro - ocular approaches for managing creative organisation. Eye tracking reveals processes that enable conjoint choices to become increasingly efficient with practice. These important

extensions serve to establish the robustness of the *method* across the most common experimental tasks in *decision research* and augment the standard repertoire of analytic *methods* on process-tracing data in general, and *eye*-tracking data in particular. Bolstered by advancements in neuro - ocular approaches for managing creative organisation, computational power, richness of graphical displays, and robustness of interactive styles, as an interface modality, eye tracker serves as powerful input device in a host of visually-mediated applications.Despite its potential and widespread application in other disciplines, use of in neuro - ocular approachesin organisational research for managing creative organisationremains 'sparse'.

Eye-tracking analysis was used as a research tool used to measure neuro - ocular based - visual attention while observingexactly whereeyes were focused.This was designed to determine mental state of volunteers for obtainingneuro - ocular information astogaindeepinsights into decisionbehaviour and design new user neuro - ocularinterfaces.Aim was to measure neuro - ocularresponses to optical stimuli with advantage that neuro - ocularresponses can be recorded in real time.Neuro - ocular based experimentaldesign were premeditated to process translations from hypothesisinto empirical experimentation where self-determining variableactedas stimulusanddependent variables measured as reaction to the stimulus.

Research Design

Objective was to learn about relevant eye tracking knowledge and previous eye tracking studies, designresearchquestions, tasksandpossibleanalysemetrics, preparetestingstimulus, createtestsandtasksineyetracking, pilot test and iterate study design, analyse all eye tracking data collected and generate result deliverables.Principal objective was that this crucial experimentation would contribute in its neuro - ocular domain with accepted optimal techniques that perhaps could set potential benchmarks for managing creative organisation? Aim was to have a 'cognitive - romance' with 'heat maps' to connect neuro - ocularinformation schema.Heat maps aid in answering what fascinates participants' responsiveness?How does onecharacteristically look at a spot when undertaking a task?How do users allocate attention over aninducement?What areas or design are visually absent?**Heat 'maps' and gaze 'schemes'** are neuro - ocularinformation and data imaginings that connect important aspects of neuro - ocularinformationgraphic behaviour evidently with inordinate control. Gaze plots display location, direction and period consumed observing locations on stimulus. These were perceived as crucial contributions in its neuro - ocular domain with accepted optimal techniques that set potential benchmarks for managing creative organisation?

Results :

Manager has to take decisions with inadequate information. It is important to understand intricacy of managerial in exploring how eyes choose appropriate responses. In order to explain neural basis of decision making, ability to process alternatives and choose optimal course, research combines methods to build models for answering decision questions.

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Duration_observation4.JPG_2_Mean Total Fixation Duration_observation4.JPG_2_Sum Total Fixation Duration_observation4.JPG_3_N Total Fixation Duration_observation4.JPG_3_Mean Total Fixation Duration_observation4.JPG_3_Sum Total Fixation Duration_observation4.JPG_4_N Total Fixation Duration_observation4.JPG_4_Mean Total Fixation Duration_observation4.JPG_4_Sum Total Fixation Duration_observation5.JPG_5_N Total Fixation Duration_observation5.JPG_5_Mean Total Fixation Duration_observation5.JPG_5_Sum Total Fixation Duration_observation6.JPG_6_N Total Fixation Duration_observation6.JPG_6_Mean Total Fixation Duration_observation6.JPG_6_Sum Total Fixation Duration_observation6.JPG_7_N Total Fixation Duration_observation6.JPG_7_Mean Total Fixation Duration_observation6.JPG_7_Sum Total Fixation Duration_observation7.JPG_10_N Total Fixation Duration_observation7.JPG_10_Mean Total Fixation Duration_observation7.JPG_10_Sum Total Fixation Duration_observation7.JPG_8_N Total Fixation Duration_observation7.JPG_8_Mean Total Fixation Duration_observation7.JPG_8_Sum Total Fixation Duration_observation7.JPG_9_N Total Fixation Duration_observation7.JPG_9_Mean Total Fixation Duration_observation7.JPG_9_Sum Fixation Count_observation4.JPG_1_N Fixation Count_observation4.JPG_1_Mean Fixation Count_observation4.JPG_1_Sum Fixation Count_observation4.JPG_2_N Fixation Count_observation4.JPG_2_Mean Fixation Count_observation4.JPG_2_Sum Fixation Count_observation4.JPG_3_N Fixation Count_observation4.JPG_3_Mean Fixation Count_observation4.JPG_3_Sum Fixation Count_observation4.JPG_4_N Fixation Count_observation4.JPG_4_Mean Fixation Count_observation4.JPG_4_Sum Fixation Count_observation5.JPG_5_N Fixation Count_observation5.JPG_5_Mean Fixation Count_observation5.JPG_5_Sum Fixation Count_observation6.JPG_6_N Fixation Count_observation6.JPG_6_Mean Fixation Count_observation6.JPG_6_Sum Fixation Count_observation6.JPG_7_N Fixation Count_observation6.JPG_7_Mean Fixation Count_observation6.JPG_7_Sum Fixation Count_observation7.JPG_10_N Fixation Count_observation7.JPG_10_Mean Fixation Count_observation7.JPG_10_Sum Fixation Count_observation7.JPG_8_N Fixation Count_observation7.JPG_8_Mean Fixation Count_observation7.JPG_8_Sum Fixation Count_observation7.JPG_9_N Fixation Count_observation7.JPG_9_Mean Fixation Count_observation7.JPG_9_Sum Total Visit Duration_observation4.JPG_1_N Total Visit Duration_observation4.JPG_1_Mean Total Visit Duration_observation4.JPG_1_Sum Total Visit Duration_observation4.JPG_2_N Total Visit Duration_observation4.JPG_2_Mean Total Visit Duration_observation4.JPG_2_Sum Total Visit Duration_observation4.JPG_3_N Total Visit

Duration_observation4.JPG_3_Mean Total Visit Duration_observation4.JPG_3_Sum
Total Visit Duration_observation4.JPG_4_N Total Visit
Duration_observation4.JPG_4_Mean Total Visit Duration_observation4.JPG_4_Sum
Total Visit Duration_observation5.JPG_5_N Total Visit
Duration_observation5.JPG_5_Mean Total Visit Duration_observation5.JPG_5_Sum
Total Visit Duration_observation6.JPG_6_N Total Visit
Duration_observation6.JPG_6_Mean Total Visit Duration_observation6.JPG_6_Sum
Total Visit Duration_observation6.JPG_7_N Total Visit
Duration_observation6.JPG_7_Mean Total Visit Duration_observation6.JPG_7_Sum
Total Visit Duration_observation7.JPG_10_N Total Visit
Duration_observation7.JPG_10_Mean Total Visit Duration_observation7.JPG_10_Sum
Total Visit Duration_observation7.JPG_8_N Total Visit
Duration_observation7.JPG_8_Mean Total Visit Duration_observation7.JPG_8_Sum
Total Visit Duration_observation7.JPG_9_N Total Visit
Duration_observation7.JPG_9_Mean Total Visit Duration_observation7.JPG_9_Sum
Percentage Fixated_observation4.JPG_1_N Percentage
Fixated_observation4.JPG_1_Mean Percentage Fixated_observation4.JPG_1_Sum
Percentage Fixated_observation4.JPG_2_N Percentage
Fixated_observation4.JPG_2_Mean Percentage Fixated_observation4.JPG_2_Sum
Percentage Fixated_observation4.JPG_3_N Percentage
Fixated_observation4.JPG_3_Mean Percentage Fixated_observation4.JPG_3_Sum
Percentage Fixated_observation4.JPG_4_N Percentage
Fixated_observation4.JPG_4_Mean Percentage Fixated_observation4.JPG_4_Sum
Percentage Fixated_observation5.JPG_5_N Percentage
Fixated_observation5.JPG_5_Mean Percentage Fixated_observation5.JPG_5_Sum
Percentage Fixated_observation6.JPG_6_N Percentage
Fixated_observation6.JPG_6_Mean Percentage Fixated_observation6.JPG_6_Sum
Percentage Fixated_observation6.JPG_7_N Percentage
Fixated_observation6.JPG_7_Mean Percentage Fixated_observation6.JPG_7_Sum
Percentage Fixated_observation7.JPG_10_N Percentage
Fixated_observation7.JPG_10_Mean Percentage Fixated_observation7.JPG_10_Sum
Percentage Fixated_observation7.JPG_8_N Percentage
Fixated_observation7.JPG_8_Mean Percentage Fixated_observation7.JPG_8_Sum
Percentage Fixated_observation7.JPG_9_N Percentage
Fixated_observation7.JPG_9_Mean Percentage Fixated_observation7.JPG_9_Sum

Rec 01		1	1.20	1.20	1	18.39	18.39	1	23.75	23.75	1
26.07	26.07	1	8.75	8.75	1	3.19	3.19	1	14.00	14.00	1
8.66	8.66	1	2.32	2.32	1	5.56	5.56	1	0.15	0.15	1
0.11	0.11	1	0.44	0.44	1	0.07	0.07	1	0.17	0.17	1
0.39	0.39	1	0.17	0.17	1	0.17	0.17	1	0.24	0.24	1
0.16	0.16	7	0.19	1.32	12	0.19	2.27	1	0.44	0.44	7
0.12	0.82	2	0.12	0.25	10	0.19	1.94	1	0.17	0.17	7
0.15	1.06	3	0.16	0.47	4	0.15	0.58	1	1.32	1.32	1
2.27	2.27	1	0.44	0.44	1	0.82	0.82	1	0.25	0.25	1
1.94	1.94	1	0.17	0.17	1	1.06	1.06	1	0.47	0.47	1
0.58	0.58	1	7.00	7.00	1	12.00	12.00	1	1.00	1.00	1
7.00	7.00	1	2.00	2.00	1	10.00	10.00	1	1.00	1.00	1
7.00	7.00	1	3.00	3.00	1	4.00	4.00	1	1.72	1.72	1
2.78	2.78	1	0.44	0.44	1	1.23	1.23	1	0.25	0.25	1
2.28	2.28	1	0.17	0.17	1	1.73	1.73	1	0.94	0.94	1
0.85	0.85	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%				

39.96	39.96	1	14.63	14.63	1	12.08	12.08	1	45.81	45.81	1
22.38	22.38	1	3.13	3.13	1	17.22	17.22	1	0.14	0.14	1
0.29	0.29	1	0.21	0.21	1	0.97	0.97	1	0.20	0.20	1
0.25	0.25	1	0.41	0.41	1	0.27	0.27	1	0.21	0.21	1
0.34	0.34	7	0.22	1.54	16	0.22	3.45	8	0.22	1.77	7
0.35	2.44	13	0.24	3.07	15	0.28	4.22	9	0.23	2.04	15
0.19	2.91	8	0.24	1.95	10	0.20	2.01	1	1.54	1.54	1
3.45	3.45	1	1.77	1.77	1	2.44	2.44	1	3.07	3.07	1
4.22	4.22	1	2.04	2.04	1	2.91	2.91	1	1.95	1.95	1
2.01	2.01	1	7.00	7.00	1	16.00	16.00	1	8.00	8.00	1
7.00	7.00	1	13.00	13.00	1	15.00	15.00	1	9.00	9.00	1
15.00	15.00	1	8.00	8.00	1	10.00	10.00	1	1.64	1.64	1
3.77	3.77	1	1.89	1.89	1	2.55	2.55	1	3.34	3.34	1
4.56	4.56	1	2.70	2.70	1	3.77	3.77	1	2.15	2.15	1
2.32	2.32	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%				

Rec 03		1	3.18	3.18	1	31.36	31.36	1	49.27	49.27	1
53.08	53.08	1	18.93	18.93	1	8.97	8.97	1	42.40	42.40	1
20.88	20.88	1	3.93	3.93	1	14.64	14.64	1	0.26	0.26	1
0.28	0.28	1	0.26	0.26	1	0.77	0.77	1	0.35	0.35	1
0.25	0.25	1	0.31	0.31	1	0.33	0.33	1	0.33	0.33	1
0.13	0.13	9	0.27	2.40	20	0.30	6.05	4	0.42	1.68	9
0.27	2.39	12	0.27	3.20	15	0.28	4.15	13	0.30	3.92	8
0.29	2.28	11	0.24	2.65	6	0.24	1.42	1	2.40	2.40	1
6.05	6.05	1	1.68	1.68	1	2.39	2.39	1	3.20	3.20	1
4.15	4.15	1	3.92	3.92	1	2.28	2.28	1	2.65	2.65	1
1.42	1.42	1	9.00	9.00	1	20.00	20.00	1	4.00	4.00	1
9.00	9.00	1	12.00	12.00	1	15.00	15.00	1	13.00	13.00	1
8.00	8.00	1	11.00	11.00	1	6.00	6.00	1	2.58	2.58	1
6.71	6.71	1	1.73	1.73	1	2.73	2.73	1	3.68	3.68	1
4.70	4.70	1	4.15	4.15	1	2.47	2.47	1	3.06	3.06	1
1.57	1.57	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%	1	100%	100%	1
100%	100%	1	100%	100%	1	100%	100%				

All Recordings		3	2.78	8.35	3	26.33	78.98	3	36.17	108.50	3
39.70	119.10	3	14.10	42.31	3	8.08	24.24	3	34.07	102.21	3
17.31	51.93	3	3.13	9.38	3	12.48	37.43	3	0.18	0.55	3
0.23	0.68	3	0.30	0.91	3	0.60	1.80	3	0.24	0.72	3
0.30	0.89	3	0.30	0.89	3	0.26	0.77	3	0.26	0.78	3
0.21	0.63	23	0.23	5.27	48	0.25	11.77	13	0.30	3.88	23
0.25	5.66	27	0.24	6.52	40	0.26	10.32	23	0.27	6.14	30
0.21	6.25	22	0.23	5.07	20	0.20	4.02	3	1.76	5.27	3
3.92	11.77	3	1.29	3.88	3	1.89	5.66	3	2.17	6.52	3
3.44	10.32	3	2.05	6.14	3	2.08	6.25	3	1.69	5.07	3
1.34	4.02	3	7.67	23.00	3	16.00	48.00	3	4.33	13.00	3
7.67	23.00	3	9.00	27.00	3	13.33	40.00	3	7.67	23.00	3
10.00	30.00	3	7.33	22.00	3	6.67	20.00	3	1.98	5.94	3
4.42	13.27	3	1.36	4.07	3	2.17	6.52	3	2.42	7.27	3
3.84	11.53	3	2.34	7.02	3	2.66	7.97	3	2.05	6.15	3
1.58	4.74	3	100%	300%	3	100%	300%	3	100%	300%	3
100%	300%	3	100%	300%	3	100%	300%	3	100%	300%	3
100%	300%	3	100%	300%	3	100%	300%				

Time to First Fixation_observation4.JPG_1_Mean	**Time**	**to**	**First**
Fixation_observation4.JPG_2_Mean	**Time**	**to**	**First**
Fixation_observation4.JPG_3_Mean	**Time**	**to**	**First**
Fixation_observation4.JPG_4_Mean	**Time**	**to**	**First**
Fixation_observation5.JPG_5_Mean	**Time**	**to**	**First**
Fixation_observation6.JPG_6_Mean	**Time**	**to**	**First**
Fixation_observation6.JPG_7_Mean	**Time**	**to**	**First**
Fixation_observation7.JPG_10_Mean	**Time**	**to**	**First**
Fixation_observation7.JPG_8_Mean	**Time**	**to**	**First**
Fixation_observation7.JPG_9_Mean	**First**		**Fixation**
Duration_observation4.JPG_1_Mean	**First**		**Fixation**
Duration_observation4.JPG_2_Mean	**First**		**Fixation**
Duration_observation4.JPG_3_Mean	**First**		**Fixation**
Duration_observation4.JPG_4_Mean	**First**		**Fixation**
Duration_observation5.JPG_5_Mean	**First**		**Fixation**
Duration_observation6.JPG_6_Mean	**First**		**Fixation**
Duration_observation6.JPG_7_Mean	**First**		**Fixation**
Duration_observation7.JPG_10_Mean	**First**		**Fixation**
Duration_observation7.JPG_8_Mean	**First**		**Fixation**
Duration_observation7.JPG_9_Mean			**Fixation**
Duration_observation4.JPG_1_Mean			**Fixation**
Duration_observation4.JPG_2_Mean			**Fixation**
Duration_observation4.JPG_3_Mean			**Fixation**
Duration_observation4.JPG_4_Mean			**Fixation**
Duration_observation5.JPG_5_Mean			**Fixation**
Duration_observation6.JPG_6_Mean			**Fixation**
Duration_observation6.JPG_7_Mean			**Fixation**
Duration_observation7.JPG_10_Mean			**Fixation**
Duration_observation7.JPG_8_Mean			**Fixation**
Duration_observation7.JPG_9_Mean	**Total**		**Fixation**
Duration_observation4.JPG_1_Mean	**Total**		**Fixation**
Duration_observation4.JPG_2_Mean	**Total**		**Fixation**
Duration_observation4.JPG_3_Mean	**Total**		**Fixation**
Duration_observation4.JPG_4_Mean	**Total**		**Fixation**
Duration_observation5.JPG_5_Mean	**Total**		**Fixation**
Duration_observation6.JPG_6_Mean	**Total**		**Fixation**
Duration_observation6.JPG_7_Mean	**Total**		**Fixation**

Duration_observation7.JPG_10_Mean Total Fixation
Duration_observation7.JPG_8_Mean Total Fixation
Duration_observation7.JPG_9_Mean Fixation
Count_observation4.JPG_1_Mean Fixation Count_observation4.JPG_2_Mean
Fixation Count_observation4.JPG_3_Mean Fixation
Count_observation4.JPG_4_Mean Fixation Count_observation5.JPG_5_Mean
Fixation Count_observation6.JPG_6_Mean Fixation
Count_observation6.JPG_7_Mean Fixation Count_observation7.JPG_10_Mean
Fixation Count_observation7.JPG_8_Mean Fixation
Count_observation7.JPG_9_Mean Total Visit
Duration_observation4.JPG_1_Mean Total Visit
Duration_observation4.JPG_2_Mean Total Visit
Duration_observation4.JPG_3_Mean Total Visit
Duration_observation4.JPG_4_Mean Total Visit
Duration_observation5.JPG_5_Mean Total Visit
Duration_observation6.JPG_6_Mean Total Visit
Duration_observation6.JPG_7_Mean Total Visit
Duration_observation7.JPG_10_Mean Total Visit
Duration_observation7.JPG_8_Mean Total Visit
Duration_observation7.JPG_9_Mean Percentage
Fixated_observation4.JPG_1_Mean Percentage
Fixated_observation4.JPG_2_Mean Percentage
Fixated_observation4.JPG_3_Mean Percentage
Fixated_observation4.JPG_4_Mean Percentage
Fixated_observation5.JPG_5_Mean Percentage
Fixated_observation6.JPG_6_Mean Percentage
Fixated_observation6.JPG_7_Mean Percentage
Fixated_observation7.JPG_10_Mean Percentage
Fixated_observation7.JPG_8_Mean Percentage
Fixated_observation7.JPG_9_Mean

Rec 01	**1.20**	**18.39**	**23.75**	**26.07**	**8.75**	**3.19**	**14.00**	**8.66**	**2.32**	**5.56**
0.15	**0.11**	**0.44**	**0.07**	**0.17**	**0.39**	**0.17**	**0.17**	**0.24**	**0.16**	**0.19**
0.19	**0.44**	**0.12**	**0.12**	**0.19**	**0.17**	**0.15**	**0.16**	**0.15**	**1.32**	**2.27**
0.44	**0.82**	**0.25**	**1.94**	**0.17**	**1.06**	**0.47**	**0.58**	**7.00**	**12.00**	**1.00**
7.00	**2.00**	**10.00**	**1.00**	**7.00**	**3.00**	**4.00**	**1.72**	**2.78**	**0.44**	**1.23**
0.25	**2.28**	**0.17**	**1.73**	**0.94**	**0.85**	**100%**	**100%**	**100%**	**100%**	**100%**
100%	**100%**	**100%**	**100%**	**100%**						

Rec 02	**3.97**	**29.23**	**35.48**	**39.96**	**14.63**	**12.08**	**45.81**	**22.38**	**3.13**	**17.22**
0.14	**0.29**	**0.21**	**0.97**	**0.20**	**0.25**	**0.41**	**0.27**	**0.21**	**0.34**	**0.22**
0.22	**0.22**	**0.35**	**0.24**	**0.28**	**0.23**	**0.19**	**0.24**	**0.20**	**1.54**	**3.45**
1.77	**2.44**	**3.07**	**4.22**	**2.04**	**2.91**	**1.95**	**2.01**	**7.00**	**16.00**	**8.00**
7.00	**13.00**	**15.00**	**9.00**	**15.00**	**8.00**	**10.00**	**1.64**	**3.77**	**1.89**	**2.55**
3.34	**4.56**	**2.70**	**3.77**	**2.15**	**2.32**	**100%**	**100%**	**100%**	**100%**	**100%**
100%	**100%**	**100%**	**100%**	**100%**						

Rec 03	**3.18**	**31.36**	**49.27**	**53.08**	**18.93**	**8.97**	**42.40**	**20.88**	**3.93**	**14.64**
0.26	**0.28**	**0.26**	**0.77**	**0.35**	**0.25**	**0.31**	**0.33**	**0.33**	**0.13**	**0.27**
0.30	**0.42**	**0.27**	**0.27**	**0.28**	**0.30**	**0.29**	**0.24**	**0.24**	**2.40**	**6.05**
1.68	**2.39**	**3.20**	**4.15**	**3.92**	**2.28**	**2.65**	**1.42**	**9.00**	**20.00**	**4.00**
9.00	**12.00**	**15.00**	**13.00**	**8.00**	**11.00**	**6.00**	**2.58**	**6.71**	**1.73**	**2.73**
3.68	**4.70**	**4.15**	**2.47**	**3.06**	**1.57**	**100%**	**100%**	**100%**	**100%**	**100%**
100%	**100%**	**100%**	**100%**	**100%**						

All Recordings		**2.78**	**26.33**	**36.17**	**39.70**	**14.10**	**8.08**	**34.07**	**17.31**	
3.13	**12.48**	**0.18**	**0.23**	**0.30**	**0.60**	**0.24**	**0.30**	**0.30**	**0.26**	**0.26**
0.21	**0.23**	**0.25**	**0.30**	**0.25**	**0.24**	**0.26**	**0.27**	**0.21**	**0.23**	**0.20**
1.76	**3.92**	**1.29**	**1.89**	**2.17**	**3.44**	**2.05**	**2.08**	**1.69**	**1.34**	**7.67**
16.00	**4.33**	**7.67**	**9.00**	**13.33**	**7.67**	**10.00**	**7.33**	**6.67**	**1.98**	**4.42**
1.36	**2.17**	**2.42**	**3.84**	**2.34**	**2.66**	**2.05**	**1.58**	**100%**	**100%**	**100%**
100%	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**				

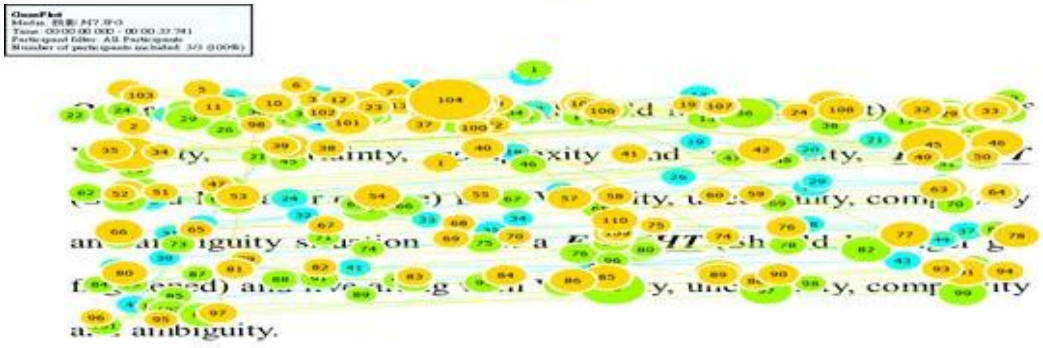
rthermore, th not nderstand hov to r pond or al with V CA. ity, c ainty, compl xity a ani guity each co ponent ses e tional ch llenges. T re, l ness ers sh uld h fy ch co ent th separ e and un ue re onse. Th sh u star tran tion.

re need a overcome this state of VUCA (v ility, u rt inty, co plexity and ambiguity) id ign b ess p pects. Un d ble ev nts h ppening outside can e n tive or po ve. h sent ier VU A. ich m es it more d icult for leaders t ake dec ons. he e iment r ons b busines an n nage c ange pr ess in rapidly c nging, chaotic and turbulent business environment. L et as a ch ge agent. They nee to play important role in initiating, implementing and ma ging change in times of crisis under severe, uncertain and complex condition.

HY OTH IS

Co ex bu ess si tion l ds ng de ons

V A T n S y



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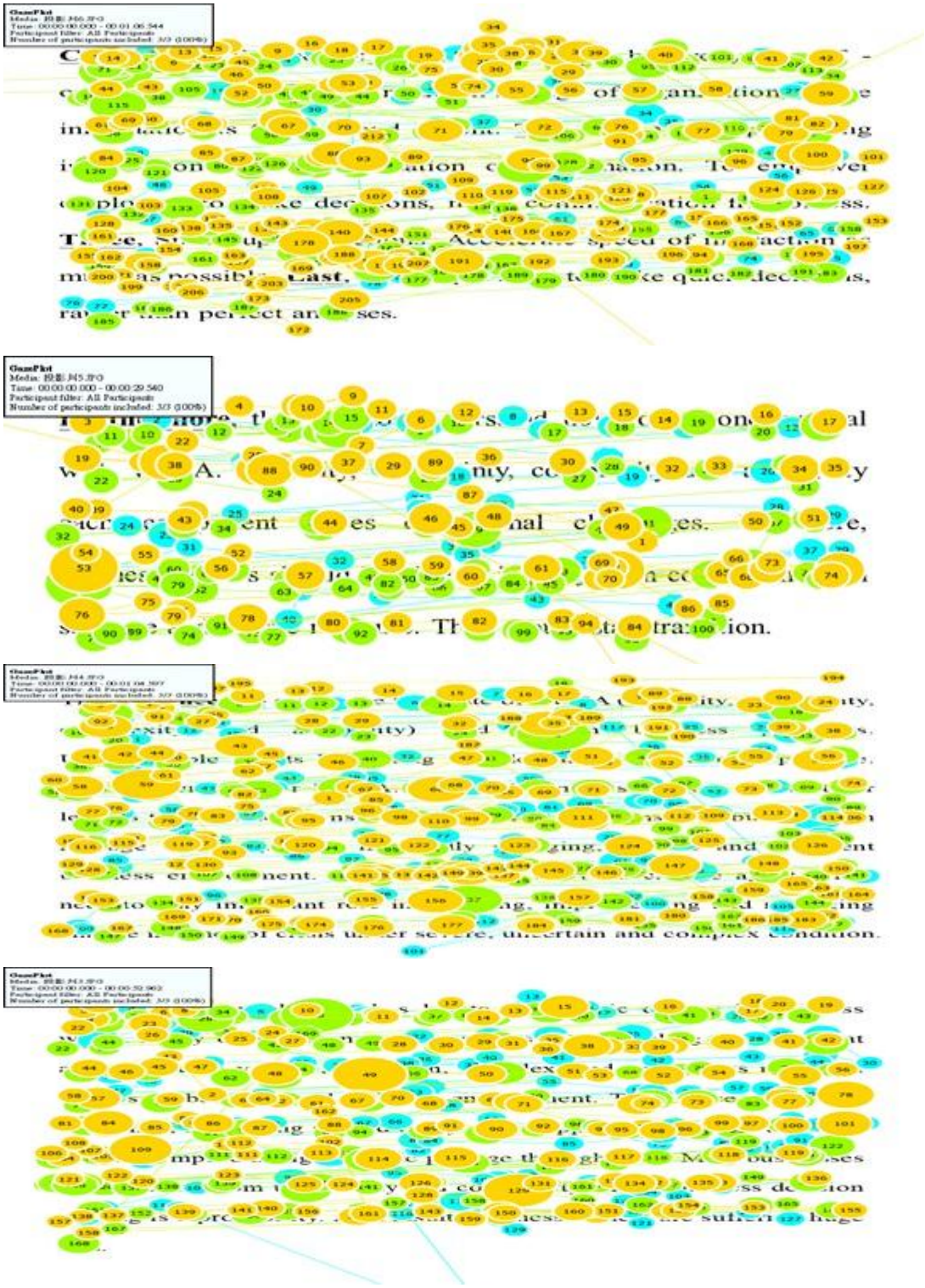

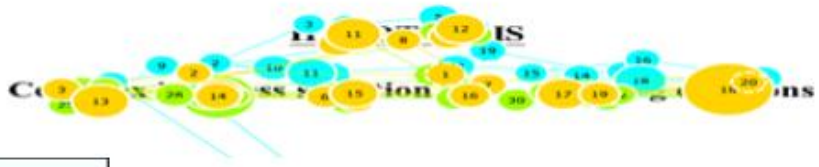

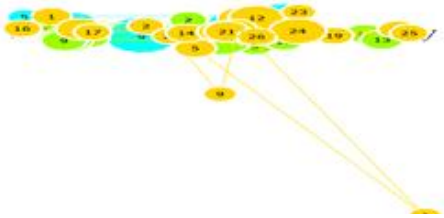

Opportunity (Should Management) of Volatility, uncertainty, complexity and ambiguity, ***FLIGHT*** (Should Manager escape) from Volatility, uncertainty, complexity and ambiguity situation or get a ***FLIGHT*** (Should Manager get frightened) and live along with Volatility, uncertainty, complexity and ambiguity.

Limited: **One**, flatten hierarchy - self-organization. Push decision down to edge of organization, where information is freshest and scarcest. **Two**, Make sharing information to democratization of information. To empower employees to make decisions, make communication frictionless. **Three**, Speed up interactions. Accelerate speed of interaction as much as possible. **Last**, use simple rules to make quick decisions, rather than perfect analyses.

Discussion

Behavioural neuro - ocular data provide conceptual replication of management - oriented decision towards managing creative organisation. Error rates were quite low. Even with MSS of 100 objects, Os were correct 85% of the time. There was a main effect of both presence of target item and MSS on response accuracy: target presence, $F (1, 12) = 31.18$, $p < 0.001$, generalised eta squared (g-ç2, a measure of effect size) = 0.25; MSS, $F (1.44, 18.85) = 88.80$, $p < 0.001$, g-ç2 = 0.51, and the two factors interacted significantly, $F(1.47, 19.30) = 23.77$, $p < 0.001$, g-ç2 = 0.04. RT data on correct trials follow same pattern of large main effects for both factors: target presence, $F (1, 12) = 28.71$, $p < 0.001$, g-ç2 = 0.24; MSS, $F (1.37, 17.88) = 83.81$, $p < 0.001$, g-ç2 = 0.51, and substantial interaction between the two, $F (2.46, 31.94) = 24.26$, $p < 0.001$, g-ç2 = 0.04. Slope was significantly influenced by target presence, $F (1, 12) = 37.25$, $p < 0.001$, g-ç2 = 0.27. In addition, there was significant effect of MSS on search slope, $F (1.33, 17.47) = 45.43$, $p < 0.001$, g-ç2 = 0.45. In sum, behavioural results are in strong agreement with previous work. There was a significant effect of target presence (all F values > 7, $p < 0.04$) on all measures except dwell time on fixated distractors, $F (1, 12) = 2.00$, $p = 0.17$, g-ç2 = 0.01. In all cases, two factors interacted such that the effect of target presence became larger as MSS increased (all Fs > 5, all ps< 0.004). percentage of distractors fixated on absent trials increases significantly from an average of 22% per O per trial to 72% as MSS increases from one to 100 items, $F(1.74, 22.87) = 56.9$, $p < 0.001$, g-ç2 = 0.55. Dwell time on each distractor increased from 52 to 290 ms, $F (1.24, 16.23) = 27.97$, $p < 0.001$, g-ç2 = 0.36. This result replicates if we restrict the analysis to only distractors that were fixated, $F (1.27, 16.57) = 13.55$, $p < 0.004$, g-ç2 = 0.23. Total fixations per item on absent trials rose from 0.26 with one item in memory to 1.27 with 100 items in memory, $F (1.26, 16.32) = 29.23$, $p < 0.001$, g-ç2 = 0.36. Fixations can be interpreted in different ways depending on context and objective of the study. During processing of neuro - ocular visual scene, individuals moved eyes to relevant features in that scene. Some features were primarily detected by peripheral area.

CONCLUSION :

Research needs new thinking and new ways of doing things in order to address them. Neuro - ocular analysis is based on the important assumption that there is a relationship between fixations, gaze and what we are thinking about management - oriented decision towards managing creative organisation. There are factors to be considered. First, sometimes fixations do not necessarily translate into a conscious cognitive process. For example, during a search task one can easily fixate briefly on the search object and miss its presence, especially if the object has an unexpected shape or size. This happens because expectation of what object (scene) should look like modulates visual attention and interferes with object detection. As **conclusion**, above study attempts to explore phenomena through neuro - ocular action, management - oriented decision and reasoning processes on cognitive models of decision. This provides framework for understanding and conducting research at

intersection of brain and eye - based models capable of predicting management - oriented behaviour capable of explaining managing creative organisations.

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CAREGIVERS WORK BURDEN AFFECTS THE QOL OF SCHIZOPHRENIA

***Dr.Bichitrananda Swain**,
**** Ms Subhashree Sapathy,**

ABSTRACT

Introduction- Schizophrenia is a dark shadow in an individual's life. The number of people with schizophrenia in the world, particularly in developing countries is increasing. Caregivers of patients with schizophrenia are under the burden of continuous and difficult processes. Patients with schizophrenia are frequently hospitalised and usually need long term care and treatment in order to reduce negative impacts. Families in India are involved in most aspects of care for persons with several mental illnesses. Determination of the factors related to caregiver burden in schizophrenia may help find the strategies to decrease the burden. There is a definite paucity of Indian studies looking into the impact of caregiver's work burden on the quality of life of patients with schizophrenia.

In this study thirty caregivers of patients under treatment for schizophrenia were included in the study. The Caregiver Burden Scale was used for the assessment of caregiver burden. Socio demographical data was obtained through case history and direct interview with the patient and the concerned caregiver. The present study showed that caregivers of patients with schizophrenia experience 43% i.e. mild to moderate burden while taking care of their relatives.So,the results data suggests that taking care of patients with schizophrenia has a mild to moderate level of burden on the respective caregivers

KEY WORD. Caregivers „Work Burden , & QOL

INTRODUCTION

In the present study the findings of previous researchers on various aspects of caregiver burden and its effects on schizophrenia is highlighted. Some of the findings (**Ahmetkokurcan et al** ,2014) evaluate the burnout of schizophrenia patients' caregivers and to determine the possible relationships between socio-demographic characteristics, symptomatology, perceived social support and the burnout profile of the caregivers. The subjects included in the study are 76 schizophrenia patients diagnosed according to the DSM-IV-TR criteria and their caregivers. A socio-demographic form, the scale for the assessment of positive symptoms and the scale for the assessment of negative symptoms were applied to evaluate the severity of the symptoms. The Mastach burnout inventory for caregivers and the multidimensional scale of perceived

****Asst.Professor of Psychology,P.G Dept of . Applied Psychology, Jewels International Chetana College Of Special Education,Bhubaneswar-13. bichichetana@gmail.com***
*****M.A in Applied Psychology, Jewels International Chetana College Of SpecialEducation,Bhubaneswar satapathysubhashree334@gmail.com***

social support were applied to the caregivers of the patients. The collected data were analysed via student's t-test, the one way analysis of variance, and pearson's correlation analysis. The burnout profile of the caregivers was highly correlated with the perceived social support of the caregivers and was also correlated with negative symptoms of the patients. Lower perceived social support was related to all subscales of the maslach burnout inventory. The conclusion reached was that perceived social support is a major factor for caregiver burnout and it was highly correlated with all subscales in our study. We think that having social support provides caregivers with better feelings and so they provide better help to the patients. Appropriate approaches should be taken to intervene in the social and clinical factors that may exacerbate the burnout process.

AbdulkareemJika Yusuf et al (2009) conducted a study on caregiver burden among relatives of patients with schizophrenia in Katsina, Nigeria. Caring for patients with schizophrenia places an enormous burden on the caregivers. The magnitude of this problem remains largely unknown in Sub-Saharana Africa. The objective of this study was to determine the nature of the burden reported by caregiving relatives of patients with schizophrenia. A total of 129 primary caregivers of patients with schizophrenia attending the outpatient clinic of Katsina State Psychiatric Hospital were interviewed using socio-demographic data collection sheet and Zarith Burden Interview (ZBI). The mean age of the respondents was 45.1 +/- 8.9years. Most of the caregivers were female. A high level of burden was found in 47.3% of respondents. The level of burden experienced was significantly associated with place of residence and family sixe. The conclusion reached was that schizophrenia is associated with a high level of caregiver burden. Efforts should be made to alleviate this burden for better outcomes in both patients and caregivers.

BrankaAmkstMargetic et al(2013) conducted a study on quality of life of key caregivers of schizophrenia patient and association with kinship. Reports on quality of life of family caregivers of schizophrenia patients are uncommon. Relations to different degree of kinship to caregivers' quality of life are unexplored but may be relevant. The purpose of this study was to assess the subjective quality of life of caregivers of stable outpatients with diagnosis of schizophrenia compared with controls to assess factors associated with quality of life in the population. Responses of 138 schizophrenia outpatient family caregivers to the quality of life, enjoyment and satisfaction questionnaire (QLESQ-SF) were compared to those of a sex-and-age-matched control group. Patients were assessed with positive and negative symptom scale (PANSS) and the global assessment of functioning (GAF) and data were collected for kinship relationship and hospitalisation. The results are as follows: the group of caregivers had significantly lower quality of life compared with controls ($t=11.347$; $df=271$; $p=0.0001$). Caregivers' quality of life correlated significantly with their age and differed according to the degree of kinship and marriage status. ANCOVA with age as covariate performed to assess the differences in quality of life according to kinship, showed that parents and own children had significantly lower quality of life than patients' siblings who were also caregivers. The conclusion of the study was that quality of life of the schizophrenia patients caregivers lower in comparison to controls. It depends on the degree of kinship and caregiver's age, parents and own children have lower quality of life than siblings. Psycho-educational intervention programmes should target specific needs of the family as a whole, depending also on their age and kinship relationship.

Aditya Gupta et al (2014) conducted a study on psychological well-being and burden in caregivers of patients with schizophrenia. There is a definite paucity of Indian studies looking into the caregiver burden, psychological well-being and the interface between them. This work aims to study the correlation between these variables. The study sample includes 100 patients with a diagnosis of schizophrenia and their caregivers randomly selected from the patients admitted in the male and female wards of psychiatric center jodhpur, as per inclusion and exclusion criteria. Burden assessment schedule and psychological general well-being index were used for the study. 80% of the caregivers experienced moderate levels of burden. The burden was higher among older caregivers and spouses. Psychological well-being was low in older caregivers and those with lower educational stats and higher in siblings. A strong negative correlation was found between burden and psychological well-being. The conclusion was that quality of care given to the individuals with schizophrenia depends on their primary caregivers. It thus becomes essential to plan interventions that would reduce their burden of care and thus improve their psychological well-being.

NavneetKaur (2014) conducted a study on caregiving burden and social support among caregivers of schizophrenic patients. Schizophrenia is a dark shadow in an individual's life. The number of people with schizophrenia in the world particularly in developing countries is increasing. The patients with schizophrenia are frequently hospitalised and usually need long term care and treatment in order to reduce negative impacts. Families in India are involved in most aspects of care for persons with several mental illnesses. Families not only provide practical help and personal care but also provide emotional support to their relatives. Quantitative research approach and correlational research design was used. The sample of 100 caregivers of schizophrenia was taken with purposive sampling technique. The structured self-report tools including a rating scale to assess caregiving burden and a rating scale to assess social support were administered to the caregivers of schizophrenic patients to collect the data. It was found that the caregiving burden and social support are negatively correlated (r=0.45) and majority of the caregivers (50%) of schizophrenic patients suffer from severe to moderate level of caregiving burden. However most of the caregivers (62%) of the schizophrenic patients have low social support whereas no one has been found to have high social support. The level of burden experienced was significantly associated with the duration of illness and gender.

Alejandra Caqueo et al (2006) carried out a study on burden of care in families of patients with schizophrenia. Family caregivers of persons with schizophrenia and other disorders experience high level of burden. Most studies of family burden in schizophrenia have taken place in developed countries. The current study examined family burden and its correlates in a medium income country in South America. 41 relatives of patients with schizophrenia who were attending a public mental health outpatient service in the province of Arica, Chile were assessed on Spanish versions of the Zarit Caregiver burden scale. All caregivers show a very high degree of burden, especially mothers, older with low educational level, without an employment and who are taking care of younger patients. As developing country, Chile has a few national social welfare and community rehabilitation programs for relatives of psychiatric patients especially in this part of the country. This significantly influences the high level of burden experienced by these caregivers. These results suggest a close monitoring of carer's mental health and the provision of a family intervention and psycho-social support.

EsraYazia et al(2016) carried out a study on burden on caregivers of patients with schizophrenia and related factors. Caregivers of patients with schizophrenia are under the burden of continuous and difficult processes. Determination of the factors related to caregiver burden in schizophrenia may help find strategies to decrease the burden. The study aimed at investigating the factors associated with caregiver burden among relatives of patients with schizophrenia. 88 caregivers of patients under treatment for schizophrenia for at least 1year were included in the study. The zaritcargiver burden interview was used for the assessment of caregiver burden. Socio-demographical data, the level of knowledge about schizophrenia, clinical impression scale, and global assessment of functioning were used to evaluate the related factors. Caregiver burden was negatively correlated with income level and functionality of the patient and was positively correlated with the age of the caregiver, the daily time spent with the patient, and the number of hospitalisations of the patient ($p<0.05$). There was no significant correlation between the caregivers knowledge about schizophrenia and caregiver burden ($p<0.05$). Living in the same house with the patient was a positive predictor whereas functionality and income level of the patient and educational level of the caregivers were negative predictors ($p<0.05$). This study highlighted the importance of setting targets for improving the functionality of patients in the design and implementation of rehabilitation and support programs for patients with schizophrenia. Additionally providing higher income for patients creating conditions for an independent life and increasing incentives for younger caregivers with a higher educational level may help decrease caregiver burden.

Shu Ying Hou et al (2008) carried out a study exploring the burden of primary family caregivers of schizophrenia patients in Taiwan. The purpose of the study was to investigate the burden of the primary family caregivers of schizophrenia patients and the factors that affect caregiver burden. A total of 126 pairs of patients and their primary family caregivers were recruited form the day care and acute wards of 2 teaching general hospitals. Demographic information was collected. All patients went through an interview with a senior psychiatrist using the brief psychiatric rating scale. The caregiver burden inventory brief version and the Chinese health questionnaire were used to assess the caregiver burden and the caregiver's health condition. One way analysis of variance and pearson's correlation were used to analyse the relationship between demographic factors and caregiver burden. Multiple regression was used to analyse predictors of burden of caregivers. Statistical significance in this stuy was defined as P</= 0.05. The caregiver burden scores (25.9 +/- 10.7; range 3-61) indicate a moderate burden level. Among the five dimensions of burden, caregiver anxiety (2.13 +/- 0.86) was the highest, followed by dependency of the patient (1.85 +/- 1.02), feeling shame and guilt (1.56 +/- 1.02) and family interference (1.43 +/- 0.83). The burden level of stigmata (1.32 +/- 1.24) was the lowest. The physical and mental health condition of the primary family caregiver of schizophrenia patients was the most important factor determining the caregiver burden level. Comprehensive multi-disciplinary care of chronic schizophrenia patients is needed, care that supports the needs and improves the psychiatric symptoms of the patients helps to decrease the caregiver burden level and facilitates family participation in treatment.

Pamela Grandon et al(2005) conducted a study on primary caregivers of schizophrenia outpatients- burden and predictor variables. The study explores family burden in relation to

relatives' coping strategies and social networks, as well as in relation to the patient's severity of positive and negative symptoms. Data on the severity of symptoms (positive and negative syndrome scale for schizophrenia (PANSS), social functioning scale (SFS), caregivers burden (interview on objective and subjective family burden), coping skills (Family coping questionnaire) and social support (Social network questionnaire) were gathered from a randomised sample of 101 Chilean outpatients and their primary caregivers, mostly mothers. Low levels of burden were typically found with the exception of moderate levels on general concerns for the ill-relative. A hierarchical regression analyses with four blocks showed that clinical characteristics such as higher frequency of relapses, more positive symptoms and lower independence performance, together with lower self-control attributed to the patient, decrease in social interests, and less affective support, predict burden. The results support the relevance of psycho-educational interventions where families' needs are addressed.

MuhammadAZahid et al (2010) carried out a study on relationship of family caregiver burden with quality of care and psychopathology in a sample of Arab subjects with schizophrenia. Although the burden experienced by families of people with schizophrenia has long been recognised as one of the most consequences of the disorder, there are no reports from the Arab world. Consecutive family caregivers of outpatients with schizophrenia were interviewed with the Involvement evaluation questionnaire IEQ-EU. Patients were interviewed with measures of needs for care, service satisfaction, quality of life and psychopathology. There were 121 caregivers. The IEQ domain scores (total= 46.9, tension= 13.4, supervision=7.9, worrying=12.9, urging=16.4) were in the middle of the range for the EU data. In regression analyses higher burden subscales scores were variously associated with caregiver lower level of education, patient's female gender and younger age, as well as patient's lower subjective QOL and needs for hospital care and not involving the patient in outdoor activities. Disruptive behaviour was the greatest determinant of global rating of burden. The results indicate that despite differences in service set-up and culture the IEQ-EU can be used in Kuwait and it has been used in the western world, to describe the pattern of scores on the dimensions of caregiving differences with the international data reflects peculiarities of culture and type of service. Despite generous national social welfare provisions, experience of burden was the norm and was significantly associated with patient's disruptive behaviour. The results underscore the need for provision of community-based programs and continued intervention with the families in order to improve the quality of care.

Natasha Kate et al (2013) carried out a study on relationship of caregiver burden with coping strategies, social support, psychological morbidity and quality of life in the caregivers of schizophrenia. The aim of the study was to evaluate the relationship of caregiver burden as assessed by using hindi involvement evaluation questionnaire with coping strategies, social support, psychological morbidity and quality of life of caregivers of patients with schizophrenia. The relationship of caregiver burden with socio demographic variables and clinical variables including severity of psychopathology and level of functioning of patients was studied. The study included 100 patients with schizophrenia and their caregivers recruited by positive random sampling among the 4 domains of IEQ. Highest number of correlations emerged with tension domains. Tension domain had positive correlation with the caregiver being single, time spent in

caregiving each day, and use of avoidance, collusion and coercion as coping strategies. Additionally tension domain was associated with poor quality of life in all the domains of WHO QOL BREF and was associated with higher psychological morbidity. Worrying urging I domain of IEQ correlated with frequency of visits, higher use of problem focused coping and poor physical health as per the WHO QOL BREF. Worrying urging II domain of IEQ had positive correlation with higher level of positive symptoms, lower level of functioning of the patient, younger age of the caregiver, caregiver being un-married, and higher problem focused and seeking social support as coping strategies. Supervision domain of IEQ correlated positively with lower income, being an unmarried caregiver from an urban locality and non-nuclear family. Supervision domain was associated with poor physical health as assessed by WHO QOL BREF.

RATIONALE OF THE STUDY

From the study of the literature it has been found that eight out of ten studies have been conducted abroad on topics like caregiver burden among relatives of patients with schizophrenia, quality of life of key caregivers of schizophrenia patients and association with kinship, relationship of family caregiver burden with quality of care and psychopathology; to name a few. The Indian studies primarily focus on psychological well-being and burden of caregivers, relationship of caregiver burden with coping strategies, social support, psychological morbidity and quality of life in caregivers. There have been very few studies that have been conducted in India, and even fewer studies have been conducted in Odisha. No study has been previously conducted on the present research topic of impact of caregiver work burden on quality of life of patients with schizophrenia. This therefore drives me to carry out my research on the given topic in Odisha.

OBJECTIVES

- To study the level of burden of caregivers who are relatives of patients with schizophrenia.
- To study the quality of life of patients with schizophrenia.

HYPOTHESIS

- Higher work burden will have an impact on the quality of life of the patient.

METHODOLOGY

SAMPLE

The geographical coverage of the present study was confined to the twin cities of Cuttack and Bhubaneswar, Odisha. For the purpose of the study the categories of respondents that were covered were patients classified under ICD-10 and DSM-IV-TR and primary caregivers of these patients.

Selection of the sample: Some steps were followed for the selection of sample. First, a list of hospitals with Psychiatric Department and treatment facilities for mental patients were prepared in Cuttack & Bhubaneswar. 3 hospitals were chosen, Sriram Chandra Bhanj Medical College and Hospital, Cuttack; PradyumnaBal Memorial Hospital, Kalinga Institute of Medical Sciences, Bhubaneswar; IMS & SUM hospital- Siksha O' Anusandhan University, Bhubaneswar.

From the 3 Mental Health Centres, altogether 30 schizophrenic patients and their caregivers were covered in the study. Among them 15 patients were male and 15 were female.

TOOLS USED

The tool used for the present study was the Caregiver Burden Scale

Description of the tool- The Caregiver Burden Scale is a 22-item self-administered questionnaire used to assess the experience of burden. The questions reflect how people sometimes feel when they are taking care of another person. It has been adapted with permission from Zarit SH, Reever KE, Bach-Peterson J. the Zarit Burden Interview, a popular caregiver self-report measure used by many aging agencies originated as a 29-item questionnaire (Zarit, Reever and Bach-Peterson, 1980). The revised version contains 22 items. Each item on the interview is a statement which the caregiver is asked to endorse using a 5-point scale. Response options range from 0(never) to 4 (nearly always). The factor structure of the Zarit Burden Interview is somewhat unclear. A number of researchers have suggested different models, but the most frequently mentioned is the two-factor model addressing personal strain and role strain. Translations of the Zarit Burden Inventory have been studied as well including versions in Chinese, Japanese, French and Portugese.

PROCEDURE

First, permission was taken from the authorities of the 3 hospitals and then a tentative time schedule was developed in consultation with the authorities of the aforesaid health centres for data collection. Data was collected from the schizophrenic patients and their caregivers following face-to-face interview method for the semi-literate and literate subjects. But in case of the educated subjects self-administration method was employed. Rapport was established with the patients after having casual discussion about their liking, disliking and hobbies and then the objectives of the study were explained and how the findings could be beneficial for the people like them so that they feel comfortable and relaxed while sharing necessary personal information and/or responding to different items of the psychological tests. Schizophrenic patients were selected following the ICD-10 criteria. In any case of confusion, the concerned psychiatrists were consulted.

RESULTS

DATA ANALYSIS

Data collected from the schizophrenic patients and their caregivers were checked and edited so that any gap or confusion identified at the preliminary stage could be clarified hence forth. The filled in data sheets were subjected to in-house thorough scrutiny and editing. Finally the data from the data sheets were entered with accuracy and precision to the computer for computational purpose. Statistics is the science of methodology for the collection, systematic presentation, mathematical analysis and interpretation of data and for drawing inferences about the explored property in the relevant population.

TABLE 1-RAW DATA SCORE FOR THE RESPONSE OF EACH CAREGIVER

CAREGIVER NUMBER	TOTAL RESPONSE SCORE
1.	19
2.	49
3.	34
4.	59
5.	35
6.	15
7.	30
8.	28
9.	23
10.	38
11.	40
12.	31
13.	47
14.	27
15.	30
16.	29
17.	21
18.	28
19.	24
20.	50
21.	35
22.	49
23.	36
24.	37
25.	38
26.	81
27.	24
28.	38
29.	26
30.	37

TABLE 2: AVERAGE SCORE FOR RESPONSESOF EACH CAREGIVER

CAREGIVER NO	NEVER	RARELY	SOMETIMES	FREQUENTLY	NEARLY ALWAYS
1	10	7	5	0	0
2	6	11	4	1	1
3	8	5	2	3	5
4	10	5	6	1	1
5	11	6	4	1	1
6	0	4	4	8	9
7	6	5	7	2	3
8	10	0	6	4	3
9	4	5	10	4	0
10	1	5	6	8	2
11	7	2	7	5	1
12	2	1	10	7	2
13	6	9	6	1	0
14	8	7	5	1	2
15	9	8	4	2	0
16	9	4	7	5	0
17	7	5	4	3	3
18	8	6	6	3	0
19	4	6	4	3	6
20	5	5	5	4	0
21	5	6	5	4	3
22	3	6	9	2	2
23	6	9	6	0	0
24	12	7	4	0	0
25	5	5	7	2	0
26	6	9	7	1	1
27	4	8	7	3	1
28	0	4	7	7	5
29	6	5	10	2	1
30	2	7	4	6	4
TOTAL	180	172	177	93	56
AVERAGE SCORE	6	5.733333333	5.933333333	3.1	1.866666667

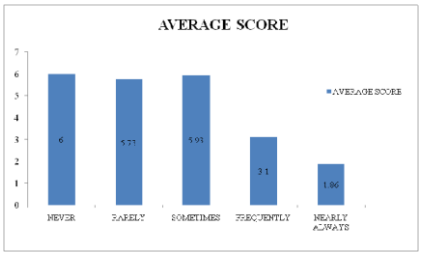


TABLE 3: AVERAGE PERCENTAGEOF RESPONSES FOR ALL CAREGIVERS

TOTAL NUMBER OF CAREGIVERS (N=30)	NEVER	RARELY	SOMETIMES	FRRQUENTLY	NEARLY ALWAYS
	20%	19.1% OR 19%	19.17% OR 19%	10.33% OR 10%	6.2% OR 6%

FIGURE 2- AVERAGE PERCENTAGE OF RESPONSES

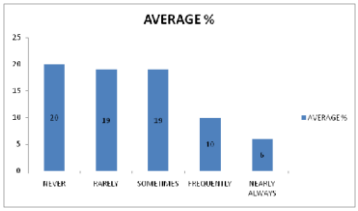


TABLE 4: THE LEVELS OF BURDEN CORRESPONDING TO THE RSPONSES OF THE CAREGIVERS

TOTAL NUMBER OF CAREGIVERS	BURDEN LEVEL			
30	LITTLE OR NO BURDEN	MILD TO MODERATE BURDEN	MODERATE TO SEVERE BURDEN	SEVERE BURDEN
	6	13	7	4

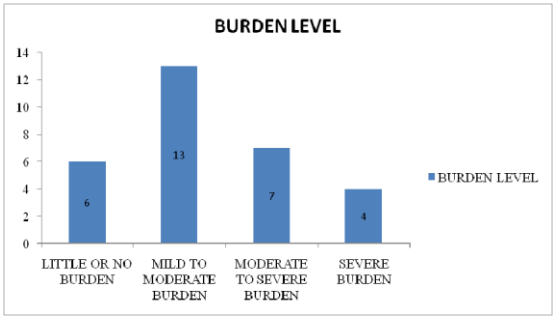
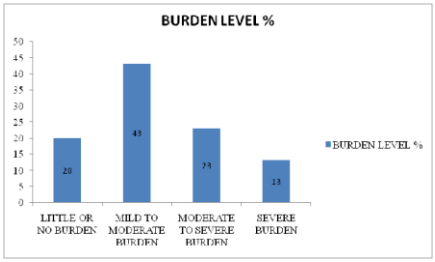


TABLE 5: BURDEN LEVEL PERCENTAGEEXPERIENCED BY THE CAREGIVERS BASED ON THEIR RESPONSES.

TOTAL NUMBER OF PATIENTS	LITTLE OR NO BURDEN	MILD TO MODERATE BURDEN	MODERATE TO SEVERE BURDEN	SEVERE BURDEN
30	20%	43.33% OR 43%	23.33% OR 23%	13.33% OR 13%

FIGURE 4- LEVEL OF BURDEN PERCENTAGEEXPERIENCED BY THE CAREGIVERS BASED ON THEIR RESPONSES



Appendix
Caregiver Burden Scale

Circle the response that best describes how you feel.

	Never	*Rarely*	*Sometimes*	*Quite frequently*	*Nearly always*
1. Do you feel that your relative asks for more help than he/she needs?	0	1	2	3	4
2. Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?	0	1	2	3	4
3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
4. Do you feel embarrassed over your relative's behavior?	0	1	2	3	4
5. Do you feel angry when you are around your relative?	0	1	2	3	4
6. Do you feel that your relative currently affects your relationships with other family members or friends in a negative way?	0	1	2	3	4
7. Are you afraid what the future holds for your relative?	0	1	2	3	4
8. Do you feel your relative is dependent on you?	0	1	2	3	4
9. Do you feel strained when you are around your relative?	0	1	2	3	4
10. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
11. Do you feel that you don't have as much privacy as you would like because of your relative?	0	1	2	3	4
12. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13. Do you feel uncomfortable about having friends over because of your relative?	0	1	2	3	4
14. Do you feel that your relative seems to expect you to take care of him/her as if you were the only one he/she could depend on?	0	1	2	3	4
15. Do you feel that you don't have enough money to take care of your relative in addition to the rest of your expenses?	0	1	2	3	4
16. Do you feel that you will be unable to take care of your relative much longer?	0	1	2	3	4
17. Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
18. Do you wish you could leave the care of your relative to someone else?	0	1	2	3	4
19. Do you feel uncertain about what to do about your relative?	0	1	2	3	4
20. Do you feel you should be doing more for your relative?	0	1	2	3	4
21. Do you feel you could do a better job in caring for your relative?	0	1	2	3	4
22. Overall, how burdened do you feel in caring for your relative?	0	1	2	3	4

Instructions for caregiver: The questions above reflect how persons sometimes feel when they are taking care of another person. After each statement, circle the word that best describes how often you feel that way. There are no right or wrong answers.

Scoring instructions: Add the scores for the 22 questions. The total score ranges from 0 to 88. A high score correlates with higher level of burden.

EFFECT OF ERROR ANALYSIS AND ERROR CORRECTION IN THE DEVELOPMENT OF WRITING SKILLS AMONG THE STUDENTS WITH MILD INTELLECTUAL DISABILITY

***Dr. Bhagirathi Mahapatra**

ABSTRACT

In the field of Special Education, writing is included in the area of functional academics. Individuals with writing difficulties often lack many of the critical writing-related abilities and may have severe problems in communicating through writing Thus the present study aims at finding the effective methods (error analysis and error correction) in developing writing skills, by correcting the commonly occurred errors that can help children with Intellectual Disability to learn by using a pre-test and post – test analysis.A case study method was used upon 10 students from NIOS, in National Institute for the Mentally Handicapped, Secunderabad in 15 sessions and performances were evaluated after each session. By using the Grade Level Assessment Device (GLAD analising common errors in 3 categories like , (1) Missing silent letters (2) Reversals (3) Auditory discrimination and three error correction strategies like (1) Cover and write (2) Puzzle game (3) spell and write , it was found that the error analysis and error correction can be considered as an effective method in correcting errors in developing writing skills among the children with mild Intellectual Disabilit as per the Significant difference between the pre-test and post-test sessions

If proper strategies and techniques are applied, the children with Intellectual Disability can also be made competent in the day-to-day life.

KEYWORD : Error analysis , Error correction & Intellectual Disability

INTRODUCTION

"Life is not so much a matter of holding good cards but of playing a poor hand well". With these words of Robert Louis , tHIS study is concerned primarily to investigate the effect of error analysis and error correction in the development of writing skills among the children with mild Intellectual Disability.

Studies pertaining to Error Analysis.

Fredrick, et al., (2007) conducted a study on error self-correction and spelling: improving the spelling accuracy of secondary students with disabilities in written expression. In order to improve the spelling performance of high school students with deficits in written expression, an error self-correction procedure was implemented. The participants were two tenth-grade students and one twelfth-grade student in a program for individuals with learning disabilities. Using an alternating treatments design, the effect of error self-correction was compared with

** Assistant Professor in Special Education,Jewels International Chetana College of Special Education*

a more traditional method of spelling practice. The intervention and follow-up phases were implemented over a 6-week period with maintenance checks conducted 4 and 8 weeks after the termination of instruction. Results indicated that the error self-correction procedure was superior to the traditional method of review during the intervention and follow-up phases, but some gains were lost during the maintenance phase.

Greenberg, K (1985) conducted a study on error analysis and the teaching of developmental writing. This study supports the use of the applied linguistics technique of error analysis (i.e., charting and analyzing patters in language errors) in developmental writing instruction. Argues that error enables teachers to diagnose the cognitive strategies and processes used by students in writing. It also discusses teaching strategies and the approach's limitations.

Cogie, et al., (1999) conducted a study on avoiding the Proof-reading Trap: the value of the error correction process. Describes how one writing centre with many English-as-a-Second-Language (ESL) students has integrated the "cultural informant" role of tutors with their role of teaching self-editing strategies. Reviews the process of introducing ESL students to use of a learner's dictionary, minimal marking, and error logs. Offers examples of using these techniques in the writing centre and classrooms.

Anna, C and Kim (1998) conducted a study on a case study of error analysis/syntactic maturity as indicators of second language writing development. The study describes a case study of a second-language student's writing process and development over the course of two years. It provides both a qualitative and quantitative perspective to second-language development of writing. Presents a rationale for analyzing errors and syntactic maturity to better understand strategies employed by students when writing in a second language. Results indicate that the error analysis provides a valid method in diagnosing the mistakes in its roots and helped the students in understanding the type of mistakes they make.

Angela, F and Richard, K (2008) conducted a study on error analysis in phonological spelling and reading deficits in children with spelling disabilities. Spelling errors in the Wide Range Achievement Test were analyzed for 77 pairs of children, each of which included one older child with spelling disability (SD) and one spelling-level-matched younger child with normal spelling ability from the Colorado Learning Disabilities Research Center database. Spelling error analysis consisted of a percent graphotactic-accuracy (GA) score based on syllable position and existence in English, and a phonological accuracy score (PA). The SD group scored significantly worse in the PA measure and non-significantly better than controls on the GA measure. The Group x Measure interaction was significant. Spelling matched pairs had very similar scores for word recognition and orthographic coding, but the SD group exhibited significant deficits in reading measures of phonological decoding and in language measures of phonological awareness.

Studies pertaining to Error Correction

Truscott, J (2007) conducted a study on the effect of error correction on learner's ability to write accurately. The paper evaluates and synthesizes research on the question of how error correction affects learner's ability to write accurately, combining qualitative analysis of the relevant studies with quantitative meta-analysis of their findings. The conclusions are that, based on existing research: (a) The best estimate is that correction has a small negative effect on learner's ability to write accurately, and (b) we can be 95% confident that if it has any actual benefits, they are very small. This analysis is followed by discussion of factors tat have probably biased the findings in favour of correction groups, the implication being that the conclusions of the meta-analysis probably underestimate the failure of correction.

Worsdell, et al., (2005) conducted a study on analysis of response repetition as an error-correction strategy during writing words. A great deal is known about the effects of positive reinforcement on response acquisition; by contrast much less research has been conducted on contingencies applied to errors. They examined the effects of response repetition as an error-correction procedure on the writing word performance of 11 adults with developmental disabilities. Study 1 compared single-response (SR) repetition, and multiple responses (MR) repetition, and results showed that all 6 participants acquired more words with the multiple response procedure. Study 2 compared multiple-response error correction following every incorrect response (continuous) and following one third of incorrect responses (intermittent), and results showed that all 6 participants acquired more words when error correction was continuous. Findings are discussed in terms of the behavioural processes by which error correction may enhance performance during acquisition.

Felce, J (2008) conducted a study on teaching picture-to- object relations in picture-based requesting by children with autism: A comparison between error prevention and error correction teaching procedures. This study compared two teaching procedure, for teaching relations between objects and pictures. Participants were two groups of children with autism, aged between 3 and 7 years. The results were the group receiving the error prevention-based teaching made significantly fewer errors during the teaching phases and in their learning outcome test for correspondences between all combinations of pictures and objects. The error prevention teaching procedure would seem to provide a more efficient and ecologically valid method than the error correction procedure for teaching relations between objects and their graphic based referents. Improvements in the methodology were suggested for providing a stronger basis for comparison between error correction and error prevention teaching methods.

Studies pertaining Error Analysis and Error Correction

James, M and Hendrickson (1976) conducted a study on error analysis and selective correction in the Adult ESL Classroom: An experiment. This study examined the most frequent communicative and linguistic errors made by 24 intermediate ESL students, and determined the effect of direct teacher correction upon these students' writing proficiency. Students were identified as having high or low communicative proficiency and were randomly assigned to one of two error correction treatments based on Burt and Kiparsky's global/local error distinction: correction of global errors only, or correction of global and local errors. Once a week for six consecutive weeks, the students wrote picture story descriptions in English and had their errors corrected according to assigned treatment. It was found that most communicative ('global') errors resulted from inadequate lexical knowledge, misuse of prepositions and pronouns, and seriously misspelled words. Most linguistic ("local") errors were caused by inappropriate lexical choice, misuse and omission of prepositions, misspelled words, lack of subject-verb agreement, and faulty word order. An analysis of variance revealed no significant differences in students' writing proficiency attributable to error correction treatment or to grouping according to communicative ability.

Lydia, W (1977) conducted a study on error analysis and error correction in adult learners of English as a second language. In this study 12 Spanish-speaking adults learning English as a second language were tested using the Bilingual Syntax Measure and their errors were analysed. 8 of them were subsequently presented with their errors in written form and asked to correct them. There was no variation in the proportions of errors form different sources according to academic status: The results showed that the error correction procedure which followed in this study helped the students to go through their errors which helped them in reducing it.

Andrew, D (1975) conducted a study on error analysis and error correction with respect to the training of language teachers. For years language teachers have conducted error analysis for remedial purposes. More recently error analysis has acquiring a second language. Causes of learner errors, such as interference from the first language, confusing aspects of the second language, or learners fostering their own errors, are discussed; and teacher responses appropriate for the error type are examined, i.e., the available information about the error, the importance of correction, the ease of correction, and the characteristics of the students. Then the teacher's options as to specific treatment for correcting errors are considered. Finally, some reservations about error analysis are entertained.

Indian Studies

The researcher could not find any studies, which conducted in India related to error analysis and error correction in developing writing skills among the children with mild Intellectual Disability.

Major findings

- Error analysis helps in reducing the commonly made errors in the children with Intellectual Disability.
- Error analysis the students in understanding their own mistakes and the cause of these mistakes.
- Error correction helps in reducing the mistakes according to the type of the errors.
- Error correction helps the students in developing their writing language skills.
- Error correction helps in students to get rid of inferiority complex that is developed because of the errors while writing.
- Application of error correction strategy in the remediation of students helps teachers in saving their time.

Rationale:

These studies have been conducted in foreign countries. No such data based study was found in India. Therefore there is a need to find the effect of error analysis and error correction in development of writing skills among the children with mild Intellectual Disability in Indian context. So the primery objective of the study is :

Objective :.

To find out the effect of error analysis and error correction in the development of writing skills among the children with mild Intellectual Disability.

Hypothesis

There will be an effect of error analysis and error correction in the development of writing skills among the students with mild Intellectual Disability.

METHODOLOGY

Research Design

It is a single group pre-test post-test experimental study. The method of group intervention study examines the effect of error analysis and error correction in the development of writing skills among the children with mild Intellectual Disability. This study does not have a control group. It was conducted on a group of 5 students functioning at II grade level having problems in writing.

Selection of sample

The sample selection was done according to the purposive sampling technique. 10 children with mild Intellectual Disability studying in II grade level on National Institute of Open Schooling (NIIOS), National Institute for the Mentally Handicapped, Secunderabad were assessed using the GLAD inorder to select those children in the same level. Then 5 children were selected and a test was given from a list of words for dictation selected from the Grade Level Assessment Device (GLAD). GLAD is a standardized tool used to find out the problem areas of the children with learning problems. There were twenty words given in the scale for each class level for dictation. Each word was dictated and scored in such a way that each correct answer will be getting '1' mark and for the wrong answer '0'.

Table No.1

Sample Design

Sl. No.	Case	Age	Sex	IQ	Class	Score in GLAD (English)
1.	S.B	M	16	58	II	49
2.	B.K	F	15	54	II	48
3.	A.G	M	15	53	II	47
4.	D.D	F	16	58	II	52
5	S.R	M	16	56	II	50

Development of Tools and Materials

(1) Demographic Data.

(2) List of words-II Grade Level English.

(3) Worksheets for Remediation

❖ **Demographic Data**

This data sheet included the name of the student, age, IQ level, level of Intellectual Disability, class in which studying, father's name, qualification and profession, mother's name, qualification and profession, type of family and other related information. This data will help to understand the environment in which the children are brought up and it will help in analyzing the results.

❖ **List of words-Second Grade Level English**

GLAD (Grade Level Assessment Device) is a standardized tool which has been developed to find out the level of academic performance in children upto Class IV. It is especially useful for children who are scholastically backward. The test items have been selected similar to class test items so that any teacher can use this scale without any difficulty. For selecting the children for the present study, the words which are given for dictation in the GLAD is taken and a checklist is prepared — Second grade level list of words – English.(Appendix D)

❖ **Worksheets for Error Correction**

Worksheets for Error Correction on the basis of error analysis were prepared according to the strategies, which were encompassed suitable for the errors taken into consideration.

Three errors were selected which the 5 children were found to be made .i.e., (1) Missing silent letters (2) Reversals (3) Auditory discrimination. Three strategies which are suitable for these three types of errors have been taken for remediation. The worksheets were developed on the basis of strategies.

PROCEDURE

The baseline of the children was assessed using the Grade Level Assessment Device (GLAD)(Appendix C). The scores are calculated down and the children in the same level (Instructional level) were selected. A test was conducted on the words list prepared- Second grade level list of words- English, for error analysis. The data which obtained was considered as the pre-test scores. The answer sheets of the children were analyzed by the process of error analysis. The errors which they were making were grouped according to the characteristics of the errors. Then, the percentage score for the total errors was calculated. After analyzing the errors, three similar errors which those children made, were taken into consideration for error correction.

The common errors of 5 children were categorized into 3 types. (1) Missing silent letters (2) Reversals (3) Auditory discrimination. Even if the children were making other types of mistakes, the above three errors were selected because all the 5 children were making almost same type of errors in which commonly found were missing silent letters, reversals and auditory discrimination. The children used to misses some silent letters in the words, in some words they used to pre-disposes the letters resulting in reversals of words, some other words they used to write wrong because of problems in auditory discrimination.

Table. 2

Percentage of total errors and the errors concerned for the study

Three error correction strategies were formed suitable to correct the above mentioned 3 types of errors were selected. They are (1) Cover and write (2) Puzzle game (3) spell and write. Each Session was of 30 minutes. In the first 5 sessions first strategy was used, in the next 5 sessions second strategy 'puzzle game' was used, and in final 5 sessions, third strategy 'spell and write' was used.

Sl. No.	Case	% of total errors	Missing silent letter	Reversals	Auditory discrimination
1	S.B	60%	15%	15%	10%
2	B.K	70%	10%	20%	15%
3	A.G	75%	15%	15%	15%
4	D.D	60%	15%	10%	15%
5	S.R	70%	15%	15%	10%

Items	C	Written words	Error
high		hi	Silent letter missing
		hi	Silent letter missing
		high	No errors
		high	No errors
		hai	Auditory discrimination
play		play	No errors
		play	No errors
		blay	Confusion between 'b' and 'p'
		play	No errors
		play	No errors
hop		hoop	Addition
		hap	Auditory discrimination
		hopp	Addition
		hob	Confusion between 'p' and 'b'
		hop	No errors
evil		evill	Addition
		evli	Reversal
		ewil	Confusion between 'v' and 'w'
		evil	No errors
		eivl	Reversal
good		good	No errors
		good	No errors
		good	No errors
		good	No errors
		good	No errors
dark		drak	Reversals
		dark	No errors
		bark	Confusion between 'd' and 'b'
		drak	Reversal
		drak	Reversal
kill		kell	Auditory discrimination
		kil	Omission
		kell	Auditory discrimination
		cill	Auditory discrimination
		kil	Omission
fold	1	fould	Addition
	2	fald	Auditory discrimination
	3	fodl	Reversals
	4	flod	Reversals
	5	ford	Auditory discrimination
sing	1	simg	Substitution
	2	cink	Confusion between 's' and 'c'
	3	sink	Auditory discrimination
	4	seng	Substitution
	5	sin	Omission
real	1	reel	Confusion of vowel combination
	2	rel	Omission
	3	rael	Reversals
	4	real	No errors
	5	rel	Omission
risk	1	rsik	Reversal
	2	risck	Addition
	3	riks	Reversal
	4	risk	No error
	5	risg	Substitution
beg	1	begg	Addition
	2	bag	Auditory discrimination
	3	beig	Addition
	4	bagg	Addition
	5	deg	Confusion between 'b' and 'd'
true	1	tru	Silent letter missing
	2	truu	Substitution
	3	tru	Silent letter missing
	4	tru	Silent letter missing
	5	true	No error
size	1	siez	Reversal
	2	sise	Missing silent letters
	3	sis	Substitution and omission
	4	size	No error
	5	siz	Silent letter missing
few	1	few	No error
	2	few	No error
	3	fu	Auditory discrimination
	4	fu	Auditory discrimination
	5	fue	Substitution
rain	1	rain	No error
	2	rian	Reversal
	3	rein	Auditory discrimination
	4	crane	Auditory discrimination
	5	rian	Reversal
safe	1	saf	Missing silent letter
	2	safe	No error
	3	saaf	Addition
	4	saf	Missing silent letter
	5	saf	Missing silent letter
leaf	1	laef	Reversal
	2	lefa	Reversal
	3	leaf	No error
	4	lef	Omission
	5	leaf	No error
cave	1	kave	Confusion between 'c' and 'k'
	2	cawe	Confusion between 'v' and 'w'
	3	cav	Missing silent letter
	4	cav	Missing silent letter
	5	cav	Missing silent letter
send	1	send	No error
	2	cend	Confusion between 's' and 'c'
	3	senb	Confusion between 'd' and 'b'
	4	siend	Addition
	5	sand	Auditory discrimination

The three strategies which were selected for error correction is described below. They are 'cover and write', 'puzzle game' and 'spell and write'.

(1) Cover and write.

Cover and write is said to be an effective strategy in teaching spelling of words. The child was given a word and asked to read then cover it with hand and write from memory. The mistakes which the child makes are asked him to analyze and correct by himself. This was the first strategy which is used in the first 5 intervention sessions.

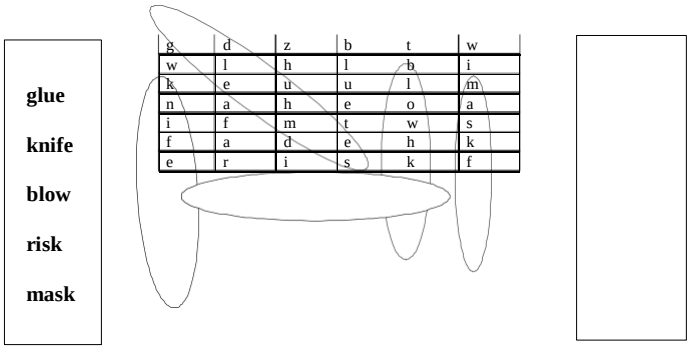
(2) Spell and write.

This is the second strategy which is used in the other 5 sessions. The children are given the words and asked to divide the word into its component letters, (letter by letter) so that they can spell it and write and asked to rewrite it in the other side. Then they are asked to read the word again. In the same way the whole worksheet has to be completed.

(3) Puzzle game.

The last method used was puzzle game. In this method, the children were given a hidden word format to provide practice in letter sequence of spelling words. A list of spelling words and a puzzle is provided and asked to locate the hidden spelling words and to draw a circle around them in order to make that word. Then the children are asked to rewrite the word again in the next column provided. The words which they found out from the puzzle, they have to rewrite it.

Find the hidden words and rewrite them in the box provided in the right side.



Scoring

Before starting intervention test was given to all the children. Each strategy was used 5 sessions each and the performance was recorded after the completion of each session. The List of words-II Grade English was used for the test. Each correct answer was scored as '1' and the wrong answer as '0'. The recorded data was subjected to data analysis using proper statistical methods.

RESULT AND DISCUSSION

Data Analysis is very important for any research study, as the results are based on applying proper statistical methods on the scores which are formed as a result of the data collection. After completing the intervention in 15 sessions using three strategies as explained in chapter III, the carefully collected data has been analyzed for all five cases selected for the study. The data analysis is clearly described in this chapter.

Table. 4

Session wise pre-test & post-test scores - writing

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Mean	6.8	6.8	7.2	8.0	8.2	8.2	9.0	9.2	9.8	10.4	10.6	11.8	13.0	13.8	15.2	16.0

Table. 4 depicts the mean scores in each session starting from pre-test to post-test of all the cases. The pre-test score of 6.8 which is calculated after the error analysis extended upto a score of 16.0 in the post-test which indicates that the cases has shown an remarkable improvement in the scores which was the result of the error correction strategies followed in the intervention. Thus, by giving practice through error correction strategies, the children have corrected the errors which paved the way in getting a high mean score in the post-test.

Figure. 1

Session wise pre & post-test scores - writing

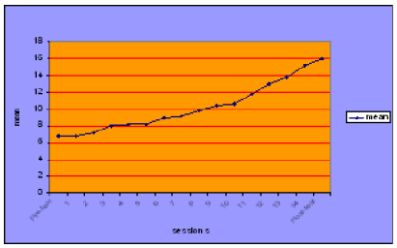


Figure 1 represents the session-wise pre-test and post-test scores – writing. The graph shows that from the pre-test (6.80) to the post-test (16.00) there is an remarkable difference in the mean scores which indicates the improvement.

Table. 5

Comparison of mean scores of pre-test and post-test of all the cases.

Sessions	N	Mean	Standard deviation	T-value
Pre-test	5	6.80	1.643	11.6
Post-test	5	16.00	0.834	

Table No. 5 represents the mean scores and t-value of the pre-test and post-test of five cases. The pre-test score of 6.8, the post-test score of 16.0 and the t-value of 11.6 shows that there is a highly significant difference in the pre-test and post-test scores. This helps us to reach out in a finding that the error analysis and error correction procedure which used in this intervention was very effective.

Figure. 2

Comparison of pre-test and post-test scores of all the cases.

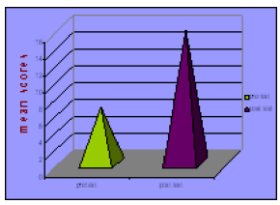


Figure. 2 is the graphical representation of comparison of pre-test and post-test scores of all the cases. The bar diagram indicates there is a significant difference in the pre-test and post-test scores of the cases.

Table. 6

Comparison of the mean score of three error correction strategies -writing

Error Correction Strategies	N	Mean	Standard deviation	T-value
Cover and Write	5	6.8	1.643	-5.715
	5	8.2	1.483	
Spell and Write	5	9.0	2.121	-6.647
	5	10.6	2.074	
Puzzle game	5	11.8	1.924	-4.707
	5	16.0	0.707	

Table No. 6 shows the mean scores and t-value of each error correction strategy, 'cover and write', 'spell and write' and 'puzzle game' accordingly. The results shows that each strategy helped in correcting the errors, as the pre-test and post-test of each strategy is showing much difference in their mean scores. The t-value of -5.715 in cover and write, 6.647 in spell and write and -4.707 in puzzle game shows that there is a significant difference in the pre-test and post-test of each strategy. When comparing between the scores gained through the strategies, it is seen that puzzle game was the most effective one.

Figure. 3

Comparison of error correction strategies

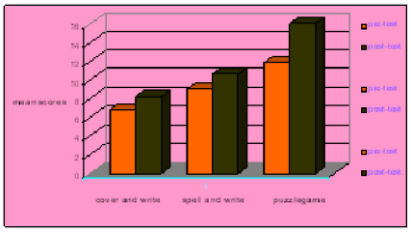


Figure.3 represent the bar diagram of comparison of error correction strategies. From the diagram the three strategies shows significant difference in the improvement of the cases. Puzzle game shows more improvement and difference in the pre-test post-test for each strategy is also evident from the diagram. In that way the puzzle game shows more difference in the mean scores between pre-test and post-test scores.

Table. 7

Case wise pre and post-test gain and percentage - writing

Sl. No.	Case	Pre-test	Post-test	Gain	% gain	Rank Order
1	S.B	9	16	7	78	V
2	B.K	6	16	10	166	III
3	A.G	5	10	10	200	I
4	D.D	8	16	8	100	IV
5	S.R	6	17	11	183	II

Table No 7 depicts the results of the case analysis. The pre-test and the post-test values, the gain, percentage gain and the rank order of the case are drawn out. The percentage gain shows A.G gained 200% which is the highest, and then comes S.R who gained 183%, the

third place person is B.K who gained 166, and fourth place is accommodated by D.D by 100% and the last by 78%. Thus, it can be seen that, through the error analysis and the error correction strategies A.G has gained more when compared to other cases. Even if the pre-test score of A.G was very low compared to the others, he utilized the error correction strategies very well which helped in attaining a good post-test score thus by scoring the highest percentage gain. The pre-test score of S.B was comparatively high, but when the percentage gain is calculated he got the least score.

Figure. 4
Case wise gain (percentage)

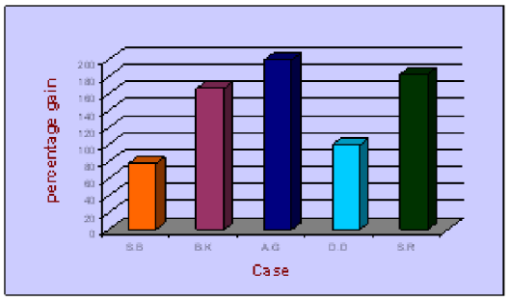


Figure. 4 represent the case wise percentage gain, from the graph it can be seen that Case A.G (200%) is having the highest percentage gain and case S.B (78%) is having the least.

The above described mean scores and t-value represented the whole group; about how the error analysis and error correction strategies affected the group in correcting the typical type of errors. Now the case wise study of effect of error analysis and error correction is described below.

4.1 CASE 1- S.B

S.B is a 16 year old boy, having and IQ of 58 belonging to a middle class family. He is attending the National Institute of Schooling in National Institute of Mentally Handicapped, Secunderabad.

He was assessed on the Grade Level Assessment Device (GLAD) to find out the class level he is standing right now. After the assessment in the Class II level, it was found that he is in the Instructional Level according to the GLAD. After this for finding the baseline of S.B he was assessed with the List of Words-II Grade Level English (Appendix E1) . The pre-test score was drawn out and the error analysis procedure was done. Three errors were selected and error correction procedures were followed thereby.

Three error correction strategies were used for the intervention which was found to be suitable to correct missing silent letters, reversals and auditory discrimination. Each session of 30 minutes for 15 sessions were taken. After completing the intervention, the post-test score was recorded. The results after analyzing the data are given below.

Table. 8

Percentage scores of S.B. in each session after error analysis and error correction

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	40	40	40	50	50	50	55	55	55	60	60	65	70	70	75	80

Table. 8 show the percentage scores of S.B in each session. The pre-test score of 40% and the post-test score of 80% shows that there is a notable difference in the scores. This shows the error analysis and error correction procedure has helped S.B in correcting his errors and to write the words by omitting those errors.

Figure. 5

Percentage scores of S.B in each session after error analysis and error correction

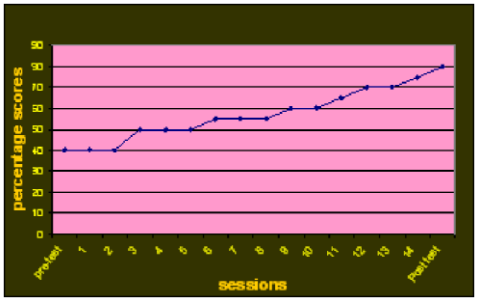


Figure. 5 represent the percentage scores of S.B in each session. The graph shows that there is an gradual improvement from the pre-test to the post-test.

Qualitative Analysis

S.B attended the interventions at the right time, but the problem which was found in the sessions was, he will get distracted very soon. Once he will get distracted he shows little interest in studying. Even if he was understanding the classes, his attention problem caused in scoring less marks when compared to other cases even if his pre-test score was high. While using the first two strategies 'cover and write' and, spell and write', he sometimes shows disinterest to follow. But the third strategy puzzle game created competitive spirit in him which made him learn more. Thus the more effective strategy for S.B was puzzle game.

4.2 CASE 2 – B.K.

B.K is a 15 year old girl, having an IQ of 54, attending NIOS, in National Institute of Handicapped, Secunderabad belonging to a lower class family. After assessing with GLAD, she got a score of 45 which shows she is in Instructional level in English.

By administering the List of words-Second Grade Level English, the pre-test score was calculated (Appendix E2). As described earlier three errors were selected for giving intervention. As such 15 sessions were taken for intervention and the post-test score was recorded . The results are given below.

Table. 9

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	30	30	35	35	40	40	40	40	45	45	45	55	60	70	80	80

Table. 9 show the percentage scores of B.K in each session. The percentage score in pre-test is 30% and the post-test is 80%. The percentage gain was 166% which made her placed in III position. Her pre-test score was very low but her post-test score is comparatively a better one. This shows that the error analysis and error correction procedure was very effective for her in correcting the errors.

Figure. 6

Percentage scores of B.K in each session after error analysis and error correction

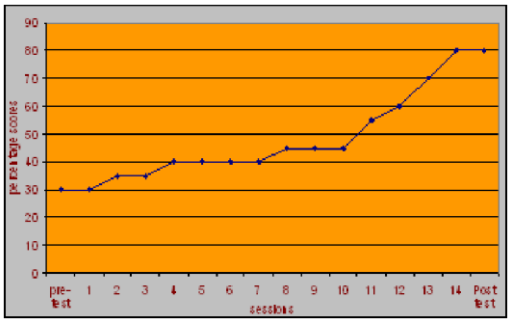


Figure. 6 represent the percentage score of B.K in each session. From the graph it is very clear that there is a great difference from the pre-test score and the post-test which shows that B.K has gained so much from the intervention.

Qualitative Data

B.K arrived for the intervention promptly everyday. She was very calm and also very slow in whatever she does. Her writing speed was very slow which sometimes made the sessions lag more then 30 minutes. She needed so much time to understand the classes, the worksheet practices also she did more. It was noticed that once she gets an idea about the things which are taught, she never commits mistakes. Thus it was observed that solving of root causes made the chance of making mistakes low. On the three above mentioned strategies, she co-operated very well in all of them. The scores and the interest she has shown while using the puzzle game shows that, this strategy is more effective for B.K.

4.3 CASE 3 – A.G

A.G is a 15 year old boy, having an I.Q of 53 is attending NIOS, National Institute for the Handicapped, Secunderabad. He belongs to a middle class family. He was assessed using GLAD to calculate the baseline, in which he scored 43, thus in an Instructional Level. By taking the pre-test score by administering List of Words- Second Grade Level English (Appendix E3), in which he got 5, the lowest score when compared to all the cases. As mentioned above, 15 sessions intervention was given, and the post-test score was calculated. The results are represented below.

Table. 10

Percentage scores of A.G in each session after error analysis and error correction

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	25	25	25	30	30	30	30	35	35	35	40	45	45	55	70	75

Table. 10 Figure No. 7 shows the percentage scores of A.G in each session after error analysis and error correction procedure. The pre-test score is 5 and the post-test score is 10. The percentage score in pre-test is 25% and the post-test score is 75%. This shows there is a great difference in the pre-test and the post-test score. Thus, it can be point out that the error analysis and the error correction strategies have made a great improvement in A.G in reducing the chances of error while writing.

Figure. 7

Percentage scores of A.G in each session after error analysis and error correction

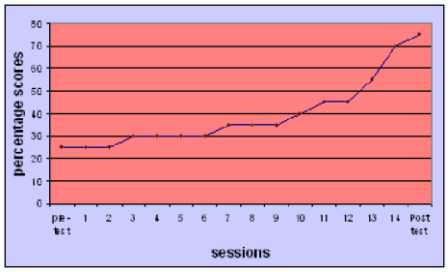


Figure. 7 represent the percentage gain Of A.G in each session. It shows that there is a very good improvement in the scores from pre-test to the post-test.

Qualitative Analysis

A.G is an obedient very calm natured student who attended all the sessions regularly. He listens the instructions very carefully and feels to get the word completed very fast. His learning rate was slow when compared to other cases. He needed extra support and explanations. The mistakes he make even in the worksheets because of carelessness was more and made him feel worried so much.

He was very attentive and while writing he always spells each letter by letter. In the three strategies, the third strategy puzzle game made him very much interested in doing and wanted to finish first. When he was reaching the final sessions he was very much aware of his carelessness and tends to reduce making mistakes. He got the first place in percentage gain in case analysis is because of his dedication to work.

4.4 CASE 4 – D.D

D.D is a 16 year old girl, having an IQ of 58 attending NIOS, in National Institute for Handicapped, Secunderabad. She belongs to a lower class family. She was assessed with GLAD on English, and she scored 52 in that which says she is in Instructional Level.

As described earlier, pre-test was conducted to take out the baseline. Then error analysis was done, to select the errors (Appendix E4). The three errors were taken into consideration for error correction. Then 15 sessions intervention was given. Finally post-test was done and the performance was recorded. The results are summarized below

Table. 10

Percentage scores of D.D in each session after error analysis and error correction

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	40	40	40	45	45	45	55	55	60	65	65	70	70	70	75	80

Table. 10 represent the percentage scores of D.D in each session. In the pre-test she got 40% and in the post-test she got 80%, which is showing that the error analysis and error correction was effective for her. Her percentage gain is 100% which kept her in IV position. The pre-test and post-test results shows very much difference which reveals of effect of error analysis and error correction.

Figure. 8

Percentage scores of D.D in each session after error analysis and error correction

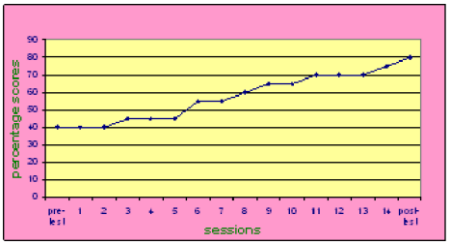


Figure. 8 shows the graphical representation of D.D in each session, indicating that there is a gradual improvement in the scores from the pre-test to the post-test.

Qualitative Analysis

D.D is a very co-operative girl who has shown great interest in the sessions. She always helps other cases in doing the worksheets whoever needed more help. She got comparatively a fair score in the pre-test and the post-test results shows that she has utilized the error analysis and error correction strategy in correcting her mistakes. The main problem was she was getting distracted very soon and was attending other external matters. This made disturbance in attention and affected the learning process. After the intervention she was able to correct her errors.

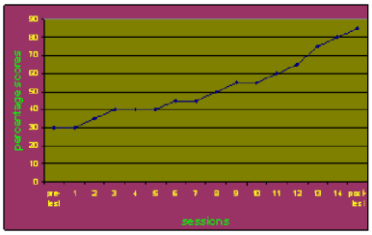
In the three strategies, the second strategy spell and write and the third strategy puzzle game helped her in correcting the errors more. The puzzle game was creating more interesting because it was based on a game. The overall performance shows that there is a great effect in error analysis and error correction in the writing skill of D.D.

4.5 CASE 5 – S.R

S.R is a 16 year old boy, having an IQ of 56, attending NIOS, National Institute of Mentally Handicapped, Secunderabad. He belongs to a middle class family. He was assessed in GLAD in which he scored 50, that is he in Instructional Level. Then a pre-test was conducted to get the baseline of S.R (Appendix E5). As mentioned, 15 session intervention was carried out, and then the post-test results were recorded. The interpretation of results is given below.

Table. 12

Percentage scores of S.R in writing after error analysis and error



Correction

Table. 11 represent the percentage scores of S.R in each session. In the pre-test hi score was 30% and the post-test his score was 85%. This shows there is a evident difference in the pre-test and post-test score of S.R in writing by reducing errors. The percentage gain is 183% and he stands in II position in the group. The difference in the pre-test and post-test score shows that the error analysis and error correction has much effect in S.R.

Figure. 9

Percentage scores of S.R in writing after error analysis and error correction

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	30	30	35	40	40	40	45	45	50	55	55	60	65	75	80	85

Figure. 9 represents the session wise improvement of S.R which shows that there is a remarkable difference in the scores from the pre-test to the post-test.

Qualitative Analysis

S.R was a boy who learns fast when compared to the other cases in the group. But he was not so punctual in the classes, so for him some days one or two sessions extra were taken inorder to complete the 15 sessions. In the class, he responds very well to the questions and follows the instructions quickly. After writing he always checks his answer by asking the teacher and makes the corrections himself. In the three strategies, puzzle game aroused so much competitive spirit in him as the other children and helped him gain more compared to the other strategies. The learning rate of S.R was so fast, that made him attain II place among the group. He was an obedient student and helped other students in his group in doing the worksheets and also when somebody arises any doubts he himself tried to clear the doubts. Thus the analyzed results show that the error analysis and error correction has much effect in writing of S.R.

4.6 Summary of the Results

All the five cases were given pre-test, there were slight differences in the scores, the errors which the students commonly makes was analyzed and the similar errors which was seen was taken into consideration for the intervention and thus the cases are selected accordingly. At the end of each session the performance were recorded and the post-test was conducted, then the percentage gains were calculated. This helped to compare the performance of each case. The improvement of all the five cases was measured and interpreted. The findings are entered in the next chapter.

The results and discussion gives a clear cut idea of the overall research work. This chapter summarizes the major findings of the study titled "A study on effect of error analysis and error correction in developing writing skills among the children with mild Intellectual Disability". Its limitations and scope for future studies also have been discussed.

The pre-test scores of all the five cases have been calculated and intervention was given for a period of 15 sessions. The performance was recorded and the post-test scores

were taken out. The entire data was subjected for data analysis and the results were interpreted. The effectiveness of error analysis and error correction was studied and the comparison between then error correction strategies was done according to the scores of the cases.

The mean scores of the total cases from pre-test to post-test shows that there is a great improvement in the cases in their writing by correcting the errors. The t-value calculated for pre-test and the post-test shows that there is a significant difference the pre-test and post-test of the cases which stresses that the error analysis and error correction procedure was very effective in writing.

The errors which were taken into consideration after error analysis for intervention was missing silent letters, reversals and auditory discrimination. As these were commonly making errors and according to the priority of correcting those errors, they were selected for error correction. Three strategies which were found to be suitable for correcting these errors were selected for error correction. They were Cover and Write, Spell and Write, Puzzle Game.

All the five cases used (S.B, B.K, A.G, D.D and S.R) the three strategies appropriately. The last strategy was found to be more effective for all of them and it created interest and competitive spirit in them to do the worksheets. Thus, the score level also raised for all of them in the last 5 sessions may be the previously used two strategies also made chances in improvement for them, but puzzle game has found to be more effective.

The reasons for the above results may be because,

- Each case was given chance to correct their errors by self.
- Enough time was there to think about the errors they commits and way to correct them.
- In each 30 minutes session only three errors were taken into consideration.
- Colourful materials were introduced for making the learning interesting.
- The root causes of the errors are found out and given remediation.
- In addition to usage of strategies, verbal instructions were given based on rules in writing.

Thus, the study reveals that Error Analysis and Error Correction Procedure are very effective in developing writing skills. The strategies can be changed according to the errors and the level of children.

Almost similar results have been shown in some of the earlier studies conducted which was given in the review of literature. Angelina, K.S and Jefry, S.W (2002) indicated that error analysis procedure is very effective in teaching mathematics simple calculations by pointing the causes of errors to the children. During the intervention the researcher made use of this, and one of the reasons for improvement in learning is this point.

Davy, G (2000) in his study about the effect of error correction in teaching English words indicated that attention problems were reduced while using different error correction strategies. In this study the researcher found that the interesting games helps in creating interest in children to learn and while correcting their in such ways helps in reducing the inferiority complex caused by the mistakes.

Francis, F.P (2003) in his research conducted on error correction strategies for teaching grammar rules in English among primary students indicates that using different strategies through games will arise spirit of learning in students more compared to conventional method of teaching. This information helped the researcher in including game like strategy in her study which supported the study.

Michael et al (2005) indicated that the student's participation was more using the error correction strategies and helped them in finding the errors of their own while reading. During the intervention, the researcher also had the same observation with the cases.

Major Findings

- The mean score of five cases increased from 6.8 to 16.0 which shows the improvement of the cases in the pre-test to the post-test which proves the hypothesis that 'The error analysis and error correction has been found to be an effective method in correcting errors by developing writing skills among the children with mild Intellectual Disability'.
- Significant difference was there between the pre-test and post-test scores, as the t-value of 11.6 shows that it is highly significant. Thus there is a remarkable difference between the pre-test and the post-test.
- The error correction strategy 'puzzle game' was found to be more effective as the mean difference is showing a value of -5.400 which is more higher when compared to the other strategies.
- The case A.G with mild Intellectual Disability (IQ 53) gained more through the error analysis and error correction as his percentage is 200 which is the highest percentage among the cases.

Limitations

- The sample was very small. Therefore generalization of the findings may be difficult.
- The duration of the study was very short.
- Only three strategies were selected for intervention, so effectiveness of other strategies was not compared.
- There was only one group; if there are three groups to compare the three strategies the results would have been more reliable.

Future Research

1. There is a scope for a study with large sample with longer duration.
2. There is a scope for an experimental study with experimental and control group.
3. There is a scope for introducing more strategies for error correction.
4. There is a scope for a comparative study with error analysis and error correction with other techniques to develop writing skills.

CONCLUSION

The present study was conducted inorder to find the effective methods in developing writing skills, by correcting the commonly occurred errors and also throws light for future research, for developing different error correction techniques, which will help children with

Intellectual Disability to learn. If proper strategies and techniques are applied, the children with Intellectual Disability can also be made competent in the day-to-day life.

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WOMEN EMPOWERMENT AND GENDER VIOLENCE

*Dr.Laxmi Rani

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ABSTRACT

This is the age of globalisation. Specially, women are Empowered by the government and society, but women are still suffer and victimised by their family and their husbands. Indian society is mainly male dominated society males are always try to be a superman. This is the Psychology of the male to forcefully conquered woman. He thoughts women are personal -property, it is the thing that can be used only. This is the main root of the violence. Marital rape, victim of rape, diagnosis planning, Honor killings, Dowry, Acid throwing, forced -marriage, all are the types of violence. Beaten by husbands is also vital type of physical and psychological violence. Women are empowered by the government and society but she is still helpless and escape goat. Thousands of women victimise by the society daily. They are not safe in their home.

KEY WORD: *Empowerment*, *violence*, *diagnosis*, *gender discrimination.*

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*Dr.Laxmi Rani, Assit. Professor,

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