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Message from the Editor

I am very pleased to publish second issue in 2022. As an editor of Turkish International Journal of Special Education and Guidance & Counselling (TIJSEG) this issue is the success of the reviewers, editorial board and the researchers. In this respect, I would like to thank to all reviewers, researchers and the editorial board. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to Turkish International Journal of Special Education and Guidance & Counselling (TIJSEG), For any suggestions and comments on TIJSEG, please do not hesitate to send mail. The countries of the authors contributed to this issue (in alphabetical order): Cyprus, Nepal, Nigeria, Republic of Kosovo, and Turkey.

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AN OVERVIEW OF DYSLEXIA: SOME KEY ISSUES AND ITS EFFECTS ON LEARNING MATHEMATICS

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Abstract

Dyslexia is a specific learning disability caused by a neurological problem. It is a worldwide problem with a prevalence of 5–10% of the population. It is described mainly by difficulties in reading, spelling, accuracy, fluency, and decoding abilities. This article is chiefly concerned to provide an overview of dyslexia, some key issues based on identification, intervention, and support for dyslexic learners, and its effects on learning mathematics. The common characteristics of dyslexic learners vary from person to person. The context of the learner, availability of the resources, and teaching strategy also impact an individual to develop dyslexia. The dyslexic learner can be identified in various ways however the four levels of the sequential model are discussed to identify the dyslexic learner. Only two intervention methods as a response to intervention and the Orton-Gillingham method are discussed. Similarly, different ways of supporting dyslexic learners and the effects of dyslexia in learning mathematics are also discussed.

Keywords: Dyslexia, identification of dyslexic learner, intervention, mathematics.

INTRODUCTION

The term 'Dyslexia' is a kind of learning disorder that affects the learners' ability to read, write, spell, and speak. It is used in the field of education and medical sciences. It is a specific learning disability caused by neurobiological origin (D'Mello & Gabrieli, 2018). It is not caused by other external factors such as developmental hindrance, poverty, speech or hearing impairments, language, and other learning problems; however such factors may affect increasing reading disabilities (Snow, Burns, & Griffin, 1998). The children who have the problem of dyslexia are often elegant, energetic, and capable of hardworking, although they face trouble with accurate and fluent reading and spelling the words or letters. Thus, it is due to the deficit of the phonological component that is often unexpected concerning other cognitive abilities and the provision of effective classroom instruction. (Lyon, Shaywitz, & Shaywitz, 2003). It is widely known as a reading disability. Dyslexic children will repeatedly face mainly two types of difficulties related to reading text 'fluent word recognition and 'decoding difficulties'. They cannot read out or sound out correctly and fluently many of the new words in a text by single sight in comparison to the average readers. Similarly, they frequently make decoding difficulties or they feel trouble accurate sound out words and recognizing words out of context. These are the reading deficits related to the sound component of language that makes dyslexic learner trouble comprehending their reading texts. Thus, in general, dyslexia is considered to be a difficulty in accurate and fluent reading, spelling and decoding abilities.



In the beginning stage, the meaning of dyslexia was mainly limited to the reading and spelling out process or literacy. Originally it was called reading blindness. In the beginning stage, International Dyslexia Association (2002) defined dyslexia as expressive or receptive, oral, or written language difficulties. Gradually, the area of dyslexia has been broadening due to different research on dyslexic learners. Thus, some changes have been made in the definitions of dyslexia. Chinn & Ashcroft (2017) claimed that 60% of dyslexic people have suffered from some problems related to school mathematics. Only 11% of dyslexic people do well in mathematics. The overall prevalence of dyslexic people in the world is estimated at (5–10) % of the population (Al-Shidhani & Arora, 2012). According to Yeo (2008), (2-4) % of people may have severe dyslexia and may have people in a mild form. In this course, difficulties with mathematics in some fields most particularly in numeracy do recognize as a possible cause of dyslexia. Dyslexia is considered a global learning disorder. According to Rief & Stern (2010), the number of prevalence people in the United States with dyslexia is estimated from (5-17) % of the population. The global prevalence range of dyslexia is ranging from less than 5% to 20% of the population (Wagner, et al., 2020). Similarly, the estimates of the dyslexic school-age population in the world lie between (5-17)% and it is expected that 80% of all individuals diagnosed with some type of learning disability are likely to be dyslexic (D'Mello & Gabrieli, 2018). As stated by Rief & Stern (2010), the global prevalence ratio of boys was found to be higher than girls, approximately 3.4:1.

Traditionally, dyslexia has been used as a reading problem due to neurological causes. In the present situation, there are different models used to define dyslexia such as the Orthodox model, Devi's model, dual-route model, Socio-cultural model, motor dysfunction model, etc. The Orthodox Model emphasizes problems related to cerebral disease rather than brain injury. The Davis Model focuses on intermittent disorientation due to conflicting messages to the brain by the sensory organ such as the eyes telling the brain one thing and senses of balance and movement sign another makes confusing to execute the task. The dual-route model describes two distinct routes lexical and non-lexical. Lexical route denotes the use of regular words that are real words or phrases and are regularly used by people such as a table, milk, etc. The non-lexical route denotes the non-words or words used in speaking but pronounced by using grammar rules that generally create problems to respond correctly such as aaaah, um, etc. The socio-cultural model focuses on the mental illness of the learner due to the impact of race, ethnicity, gender, religious orientation, socioeconomic status, sexual orientation, etc. which can also contribute to dyslexia. The motor dysfunction model describes motor system dysfunction that causes dyslexia.

Meaning and Definition of Dyslexia

Etymologically, the word 'dyslexia' is considered to have formed from two Greek words: 'dys' and 'lexicaon'. Meaning of dys as insufficient or lack of and lexicon as verbal language or word. Thus, dyslexia is a language-based disorder having a poor language with phonological awareness, decoding words, and the inability to quick naming or recall items, such as colors, symbols, numbers, and other familiar objects (Rief, & Stern, 2010). It is an inborn disorder that causes trouble in using and processing speech and symbolic codes. Dyslexia was identified in 1881 by Oswald Berkhan (Jastak, 1934). The word dyslexia was coined by Rudolf Berlin, a German ophthalmologist, and professor at the University of Rostock's Faculty of Medicine, Stuttgart in 1887 in his monograph *Eine besondere Art der Wort-blindheit (Dyslexia)* as cited by Wagner (1973). He used the term dyslexia to describe the difficulty with words. The first description of dyslexia appeared in 1896 by Pringle Morgan W. in Sussex, England. A German professor of medicine, Adolph Kussmaul, first named the word dyslexia as word blindness in 1877 cited by Kuerten et al., 2020).

In the present situation, the meaning and definition of dyslexia are not limited to reading difficulty. It also comprises difficulty in literacy acquisition, cognitive processes, and discrepancies in educational outcomes (Al-Shidhani & Arora, 2012). Dyslexia is a lifelong condition and it affects people into old age. It is not a disease. The condition of dyslexic learners may differ from person to person. Some children may have problems related to speech and vocabulary, and others may have an inability in



decoding symbols and sounds. Similarly, some children may have an inability in number computation (Rief, & Stern, 2010). The problem regarding dyslexia occurs up to the age of 18 years (Al-Shidhani & Arora, 2012). The acquired dyslexia is always related to adults due to brain damage, while developmental dyslexia is only encountered in school-aged children (Jackson & Coltheart, 2001). According to Rief, & Stern (2010), dyslexia is a language-based learning disability in basic belonging to reading skills and spelling. The problems regarding dyslexia in children can be examined commonly while processing speech sounds within words and making the connection between sounds and written symbols such as letters and patterns of letter combinations. The International Dyslexia Association (2007) defines dyslexia as “a specific learning disability caused by neurobiological origin. It is a kind of inability with accurate and/or fluent word recognition due to poor spelling and decoding abilities. According to Catts & Kamhi (2005), dyslexia can be defined as a means of difficulty with words. Dyslexia comprises two key characteristics regarding specific learning disabilities. The first is the weakness in specific processes or weakness in phonological processing while using speech-based coding in oral or written language or cognitive functioning (Grigorenko et al., 2019) and the second is the reading problem (Fletcher et al., 2019).

Dyslexia and Mathematics

We often define dyslexia as trouble in reading or a reading disorder. It is primarily reading trouble, but it impacts other different subject areas of learning and expression. According to British Dyslexia Association (2009), the dyslexic learner feels difficulties in phonological awareness, verbal memory, and verbal processing speed. Dyslexic students should also face such problems while learning mathematics. They should often be able to understand mathematical facts and verbal memory to do higher-level mathematics quite well. Most dyslexic children have more difficulties in short-term memory than non-dyslexic children (Chin & Ashcroft, 2017). They further state that the dyslexic student takes about 50% more time to complete a set of questions related to arithmetic in comparison to other non-dyslexic peers. It indicates that dyslexic students are highly slow to perform their mathematics tasks and feel difficult to execute number and calculation-related tasks. On the other hand, in mathematics, student needs specific skills such as the ability to recognize numbers, symbols, mathematics rules, formulae, mathematical facts, and their relationship but it creates a challenge for dyslexic students. Such incompatibility can hinder significantly for the dyslexic learner to learn mathematics.

According to Rief & Stern (2010), dyslexic learners are very slow in learning the connection between sounds and letters, letter reversals (p/q) and inversions (u/n), poor in word sounding out, problems with recalling facts, problems in time concepts, symbols, and math facts, especially multiplication tables and understanding directions. Therefore, it is very difficult to get success in learning mathematics for dyslexic children. Dyslexic children can retain basic number facts, especially times table facts by rote learning (Chin & Ashcroft, 2017). This also signifies that remembering everything such as times table, division, patterns, rules, and connections processes in succession without any sense of logic seems probably difficult. The consequences of difficulties in accurate and/or fluent word recognition due to poor spelling and decoding abilities they cannot comprehend the instructions and verbal problems properly and also reduced reading habits that can hinder vocabulary and background knowledge (Lyon et al., 2003). Such problems may create difficulty to grasp the language of mathematics and the concepts connected with it (Almahrag, 2021). Thus, it makes it difficult to solve word problems for dyslexic students in comparison to other non-dyslexic students learning mathematics. Dyslexic children tend to write letters and numbers backward and have confusion over left/right differentiation and feel trouble writing in sequence (Hebert et al., 2018). Such difficulties obviously hinder learning mathematics for dyslexic children. They are always confusing when writing numbers in sequence such as writing 269 instead of 962 and also the language problem make them confusing, for example, the father's age is twice more than the present age of the son. In this situation, they try to escape from the problem, and due to not attempting the problem; they lose their different skills, facts, conceptual ability, and relations related to solving the arithmetic problem.



Dyslexic children tend to think initially with the help of images and pictures rather than through the internal monologue used by verbal thinkers (Yeo, 2008). They have poor intuitional thinking rather than observing patterns and sequence but the blended form of thinking is likely to be considered the most successful thinking style to success in learning mathematics (Almahrag, 2021). Mathematics is an alive subject that inquires about understanding the patterns within the world around us and the mind (Schoenfeld, 1992). He further states that the 'language of mathematics is based on rules that must be learned, it is important for motivation that students move beyond rules to be able to express things in the language of mathematics. Thus, dyslexic children should struggle to learn mathematics due to their slow processing of phonological information and cognitive ability (Hebert et al., 2018).

Most dyslexic children may have difficulty with certain operations of mathematics like integration, sequencing, or memorization of facts (Almahrag, 2021). According to Powell et al., (2011), fluency is an essential skill to enhance proficiency in literacy and it is the foundation for proficiency in math as well. Similarly, dyslexic children have difficulty in working memory which hinders them to perform various things while manipulating or analyzing the proper task immediately (Rief & Stern, 2010). Some dyslexic students' poor numeracy abilities do hinder by simple issues like difficulty in recalling oral math facts and multiplication tables (Almahrag, 2021). Therefore mathematics learning is considered to be difficult for dyslexic children due to their poor reading language, specific difficulty in processing numbers, sequential nature of mathematics, comprehending verbal problems consisting of decoding, vocabulary comprehension, patterns, and symbols, and comprehending the vocabulary used in mathematics.

Characteristics of dyslexia

Dyslexia is a kind of language-based learning disability that affects especially a person's ability to read and write. It usually causes trouble in spelling out the text, vocabulary development, and general learning. Dyslexia encompasses three fundamental components: troubles with reading words, spelling, and/or fluent reading (Roitsch & Watson, 2019). It can be observed as mild and severe depending upon the signs and symptoms or, containing one or more dyslexic components in the learner. However, it does not affect usually every aspect of the person's intelligence and other developmental growth. The characteristics of dyslexia may differ for different people depending on their ages (Lyon et al., 2003). The fundamental characteristics of dyslexic people that can be observed in different ages and stages are as follows.

- ✓ Poor decoding: It is a kind of difficult to read accurately or sound out the unknown word. Poor decoding is also a kind of word assembling problem based on their sounds. Actually, dyslexic children may have delayed speech development in comparison to other non-dyslexic children at the stage of development. This delay in speech development creates several speech-related problems for dyslexic children such as reduced memory and phonological awareness, jumbling up similar-sounding words, and speech deficiency.
- ✓ Poor fluency: It is the condition of a slow reading rate. The poor reading may cause by poor use of sight words that are immediately recognized by the reader but difficult to sound out. Fluency is the ability to read a word at an average conversational rate. Reading fluency comprises four key components: speed, accuracy, expression, and comprehension where each component is interrelated. The poor fluent readers always suffer in at least one of these components of reading and lack speed, accuracy, expression, or comprehension. Thus poor fluency finally affects the learner to development of comprehension.
- ✓ Poor spelling: It is a difficulty related to learning to spell out or with spelling words accurately. It is also a problem for dyslexic children. It is considered the effect of phonological processing and memory. The cause of poor spelling of dyslexic children can have trouble hearing the different small sound words in words phonemes and also difficult to break down the words into smaller parts to spell them. Poor spelling is considered widely a challenging difficulty for dyslexic children and adults because most dyslexic people can develop reading



skills well with the proper intervention and support but the difficulty in spelling appears to persist throughout life.

- ✓ Poor reading comprehension: It is the problem of poor understanding of what was immediately read. Particularly, moderate and severe stages of dyslexic children with poor decoding and inadequate fluency can hinder reading comprehension although comprehension of oral language skills is satisfactory. It is difficult to comprehend due to a lack of proper ability to decode easily or assemble the words based on their proper sounds. It is a poor phonological awareness or working memory, breaking into a small part, putting together, and manipulating the spoken syllables and sounds in words in order to use this information to read or spell.

These are the primary characteristics associated with dyslexic people. Different research indicates that dyslexic children often show these primary characteristics. Most dyslexic people feel difficulties in other areas as a byproduct of primary characteristics. Some of the learning difficulties in different areas are stated below.

- ✓ Follow multi-step instructions, sequence, rules, and procedures,
- ✓ Tell time, follow directions,
- ✓ Quick remember names, appropriate words, terms, formulas, and phrases,
- ✓ Understand mathematical word problems,
- ✓ Express ideas in an organized form at a moment,
- ✓ Complete the tasks at a given time frame or quickly,
- ✓ Differentiate similar letters and symbols both in reading and writing (like p and q),
- ✓ Do not like to read, write, and solve mathematics,
- ✓ The language of mathematics,
- ✓ Complex arithmetic calculation problems,
- ✓ The short-term and long-term memories required to remember arithmetic facts,
- ✓ Grasping mathematical concepts that are presented only in two-dimensional form,
- ✓ Trouble in integration and organization of varied concepts and skills such as visual and motor skill integration,
- ✓ Memorization of multiplication tables and number skills,
- ✓ Motor skills and coordination.

Key Issues Regarding Dyslexia

The key issues related to dyslexia for secondary school students depend on different aspects such as the context and priority within the field. The issue helps to create a forum for discussion, sheds light on a different perspective, and ensures minimizing the problem at hand. There are several issues related to dyslexia however in this section, the issues related to identification, intervention, and support to the dyslexic learner are discussed focusing on specific difficulties related to learning mathematics.

Context of Mathematics Learner and Teaching

Context is an atmosphere or phenomenon where the learning and learner are bounded. The learning context may be considered a bounded container or atmosphere within which the learning takes place (Richard & Kate, 2007). It shapes the learning environment either favorable or unfavorable. It has greater effects on how we conceptualize the matter or things in the learning process associated with the pedagogic practices. Therefore, it is a specific situation where the organism engages, conceives, and receives the certain outcomes of the activities. The learning context can be observed in two ways in terms of the availability of facilities as an appropriate learning context and a manageable learning context. The proper learning atmosphere, as well as the appropriate context of the learner, can assist to learn effectively by means of conceptually, methodologically, and pedagogically however, there are different perspectives of learning mathematics (Panthi & Belbase, 2017). In the same way, factors such as teacher variables, existing curricula, diverse social and cultural context, and lack of useful

resources for classroom practice can also hinder especially for mathematically weak students (Belbase, 2016). Students construct their mathematical concepts of what they learn through active cognitive and adaptive processes (von Glasersfeld, 1995). This perspective also suggests that different teaching aids, tools, and materials are needed to make them engage in learning, sharing ideas, and participating actively in knowledge construction (von Glasersfeld, 2001). It also suggests the proper learnable classroom environment so that it could be easy to tackle the different issues such as gender, language, social justice, equity and access, use of technology and affordance, pedagogical choice, and achievement-related issues (Panthi & Belbase, 2017).

However, the present context is different; several school-level mathematics learners are beyond access to such a well-equipped classroom learning environment, especially in developing and underdeveloped countries. Thus, in this situation, most institutions from the developing country are trying to manage the convenient learning context for learning mathematics. It is the obligatory condition for creating such classroom conditions due to the poor management aspects and unavailability of different resources. In such a context, the issue related to learning mathematics for dyslexic children is more challenging.

Identification of Dyslexic Learner

Identification of the dyslexic learner is a challenging issue in the manageable classroom context through analyzing their learning attributes. It can be diagnosed clinically by a clinician or doctor by using brain imaging techniques like MRI and MEF (Rice & Gilson, 2022). The school-based identification of dyslexia as a specific learning disability is generally used to diagnose by the trained school teacher/educationist. A clinical diagnosis of dyslexia is not necessarily required for a school student to address the problem regarding dyslexic learners (Snowling, 2013). However, it is necessary to screen the students having at-risk and no-risk groups for the need for attention and provide proper intervention from the beginning stage (Coskun & Mitrani, 2020). It is the foremost step while designing the instructional program. The need assessment of the learner or the gap between the student's actual status and the desired status would be the first step to be analyzed before planning an instructional program. Thus, the overall learner's perspective such as prior knowledge, skills, attitude, motivation level, preferences in learning, level of education, etc. should be considered before identifying dyslexic learners (Rice & Gilson, 2022). Similarly, the context where the learner or the target population takes place should also be analyzed (Dick et al., 2005) before planning and implementing an effective instructional design. In this concern, we can follow the four levels of the sequential model to identify the dyslexic learner.

Identification of Dyslexic Learner

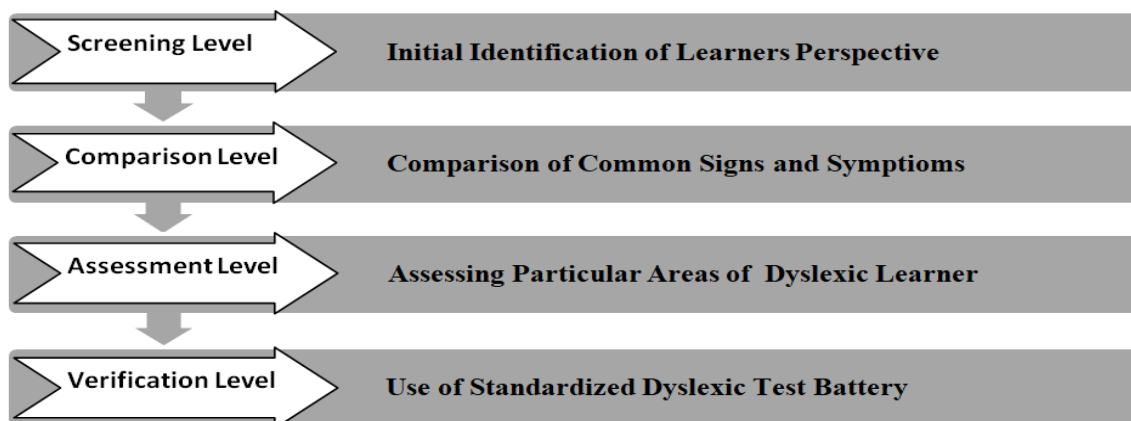


Figure 1. Identification of dyslexic learners.



Initial Identification of Learners' Perspective

It is the observation or screening level of the learner. At this level, it is necessary to go beyond the context of the learner. The main purpose of this level is to make the group of students according to their inherited personal characteristics and the learning context. Such different perspectives of the learner such as prior knowledge, skills and attitude about the topic, motivation level for instruction, general learning preferences, ability and level of education, range of achievement, etc. should be observed and screened comprehensively by collecting the information through interviews, observations, and testing. The prior or prerequisite knowledge, skill, or ability that possesses in the learner helps them to learn any subject matter or task. Such abilities of the learner enhance their motivational state, goal determination, and readiness for performing any task. As a result, the learners' prior knowledge impacts the whole teaching-learning process.

The prior knowledge of the topic area includes especially the cognitive domain of Bloom's taxonomy (Bloom, 1956). This includes different skills, information, and abilities in the related context and subject matter so that they can take advantage while recognizing, using, and defining specific facts to grasp knowledge, skills, and new information. In the same way, attitudes refer to an overall evaluation of a stimulus object or evaluation of people, places, and object in the social world and also impact both the way we perceive the world and how we behave. The learners' positive attitudes toward learning new content or skill enhance and also ensure more faster and effective learning and vice-versa (Lindstrom, 2019).

Motivation level for instruction is the major part of learning because only motivated students can focus on developing and mastering the skills. They can pay more attention, be active, enthusiastic, and optimistic about their better academic achievements. The motivated students always engage actively and exert intense effort in the learning process and thus develop knowledge, skills, and understanding at a faster rate (Lindstrom, 2019). This also helps to make effective classroom delivery or content delivery to the learner. The use of a proper amount of time and effective teaching materials can foster the motivation level and thus enhance meaningful learning.

Learning preference refers to the choices of the learner to take part in learning more comfortably and effectively. People can learn differently depending on their personal preferences such as visual, auditory, reading, or kinesthetic. When the learners get their preferred learning style or learning preferences then the level of retention and understanding may increase. The specific learning preference of the learner directs the teacher to adapt the preferable teaching styles for their students. Similarly, different skills and the ability of the learner also depend on their level of education. However, dyslexic students can exhibit low self-esteem, frustration, low motivation to take part in learning, attention difficulties in the classroom, etc. (Lindstrom, 2019). The achievement level or the range of achievement of the learner is the aggregate result of the learner's ability, skills, and attitude towards the subject, learning activity, or participation in learning which also shows some possibility of dyslexia (Falzon, 2020). Thus, can be observed comprehensively the initial characteristics of the learner concerning dyslexic children.

The main reason to screen the learner at the initial phase is to identify the problematic learner and their specific area of difficulty. Then we observe the learner and classify on basis of specific learning difficulties concerning difficulties with reading, spelling, and math. It is very difficult to identify dyslexic learners just by observing some common signs and symptoms, their ability, and performance fluctuation because such signs, symptoms, and behaviors may have appeared due to other causes. Many non-dyslexic children may have the same sign and symptoms as dyslexic children in the early stages of learning especially in reading such children can be diagnosed through a multi-level diagnosing approach. Sometimes dyslexic students can be diagnosed by investigating the family history that either any one member of their family have dyslexic or not because dyslexia also depends on a hereditary condition.



Comparison of Common Signs and Symptoms

It is the comparison level of different common signs and symptoms of dyslexic learners. At this level, different characteristics of the learner such as prior knowledge, skills, and attitude, motivation level, classroom activity (oral language skills, word recognition, decoding), performance related to oral reading fluency, reading comprehension, spelling, math fluency, math calculation skills, mathematical problem-solving skills, processing speed, general information, ability to recall, learning preferences, achievement level, vocabulary level, self-esteem, etc. obtain by the students from the group of the dyslexic learner is compared with the other non-dyslexic group of students. While comparing such activities and characteristics of the learner, their errors, inconsistency mistakes, difficulty with spelling, and troublesome condition of writing letters and spelling the words are noted down. The phonological awareness, reading, writing, and spelling discomfort, and frequent errors are also compared to the non-dyslexic learner. In this way, the overall common signs and symptoms are compared to the activities, performance, and characteristics of the dyslexic learner.

Assessing the Particular Areas of Dyslexic Learner

The third level of identifying dyslexic learners is to assess the common signs and symptoms of dyslexic learners. In this level, particular areas of the suspected learner such as letter sound and word decoding (identifying individual letters and producing sounds of the single letters); reading fluency (read silently the sentences and reading a passage quickly); spelling/encoding (writing single letters and spell words that are dictated); reading comprehension (read a passage silently and answering the questions) are assessed and make sure that the group of students is dyslexic or not. Similarly, naming common objects, symbols, letters, colors, and/or digits fluently, ability to recall sounds, words, symbols, and formulas; understanding the letter, and symbols about their specific sounds and their relationship to speech sounds; ability to encode words accurately; fluent recall of factual information related to a different subject, accuracy, and automaticity in basic computational processes, ability to recall quickly the basic mathematical facts and ability to mathematics reasoning and solving word problems are also assessed to confirm the learner either dyslexic or not. Most learners with dyslexia struggle to recall different language-based information such as multiplication tables and mathematical language that hamper solving math word problems.

This level is generally the last stage of identification of dyslexic learners based on their learning attributes in school-level education to provide support and intervention. The process of collecting the information regarding dyslexia can be done by any trained teacher or other trained personnel in the related field however the identification process is very difficult due to the common characteristics of dyslexic and non-dyslexic learners. Therefore, the teacher or the professional involved in gathering the information and assessing the particular areas of the dyslexic learner should be well familiar with dyslexia, the development of literacy skills, and their impact on other areas of learning (Snowling, 2013). Several screening tools have been developed to identify the problem related to early language, literacy, and communication skills concerning dyslexia and also are the potential to identify the learner who is at risk zone however, no such screening tools are perfect (Snowling, 2013).

On the other hand, such screening tools measure the human attributes and behaviors objectively in a predefined frame that cannot incorporate all the developmental characteristics of the learner. Therefore, it is better to use the response to intervention (RTI) approach for screening dyslexic learners to maintain the subjectivity of the context and the attributes of the learner while identifying their learning difficulties (Gresham, 2002).

Use of Standardized Dyslexia Test Battery

The last level of diagnosing dyslexic students is the use of diagnostic tests battery or standardized dyslexic test battery that is specially designed to test the ability to manipulate sounds, decoding and processing skills, and productive ability of the learner. So, to verify or to confirm the learner is either dyslexic or not the standardized dyslexic test battery is used at the final stage however a single assessment sometimes may not be appropriate to provide a holistic assessment to identify dyslexic

learners. It is the most comprehensive diagnostic evaluation process. Basically, it is not necessary to use the diagnostic test battery for school-based identification of dyslexia because the main reason for the identification of the dyslexic learner is to provide the proper intervention and support in time. The standardized dyslexic test battery is used for more severe cases or referral cases when the document is needed to be eligible for admission or join in specially designed instruction. This level of diagnosis is generally administered by a special team of professionals or a dyslexia specialist, psychologist, neuropsychologist or educational psychologist, or education teacher for assessment.

Intervention and Support for Dyslexic Learners

The reading deficit not only impacts language learning but also hinders learning the subjects like mathematics and science. The problems related to the dyslexic learner at the beginning stage can consider simple problems but when it takes a time span it becomes more problematic to catch up on the problems. The lack and gaps of the learner to learn correctly the basic knowledge, skills, and information that serve as background knowledge for learning new knowledge that also creates more difficulties in their further learning. As a result, gradually, frustration, a sense of negativity, and the sense of poor self-esteem and self-concept can be developed in the learner (Rice & Gilson, 2022). Therefore it is essential to identify or screen the dyslexic learners who are at the primary stage to develop a tentative road map for intervention. The timely diagnosis of the dyslexic learner can help to design and implement specialized instruction focusing on the learners' needs. It helps the students to address to meet their specific skills, and gaps and identified specific weaknesses. The specialized instruction can prevent some problems related to reading and helps to reduce the impact of more serious reading difficulties (Mather & Wendling, 2012). There are different approaches for the effective intervention of the dyslexic learner however two most effective methods of effective intervention have been discussed below.

Response to Intervention (RTI) Method

The RTI method can be used for both interventions and support the dyslexic learner (Fletcher et al., 2007). It is also used to provide proper intervention that consists of a continuous monitoring system to the learners' activities and progress that help to improve their learners' difficulties (Snowling, 2013; Fuchs et al., 2008). This approach is not only useful to identify the dyslexic learner but also helps teachers and schools better target, and support both students and their skill deficits (Gresham, 2002). It is a well-integrated approach for instruction and intervention for the learner that provides intervention at increasing levels of intensity to accelerate their rate of learning (Kovaleski et al., 2013). RTI is a multi-level model that consists of 'primary intervention' referring to special inclusive classroom instruction; 'secondary intervention' that involves more intensive intervention in a small group; and 'tertiary intervention' that denotes more intensive care for special education (Singh & Anshu, 2013; Elliott & Grigorenko, 2014; Fletcher & Vaughn, 2009). The three-tier/step model describes a variety of programs and provides different services for students with their learning difficulties. The brief process of the three-tiered model is discussed.

Stage 1: High-level Classroom Instruction, Screening, Group Interventions, and Support. All the students receive high-quality instruction and behavioral support. The screening process runs continuously within a certain period and measures the literacy skills, intellectual ability, and behavior of the learner to identify the struggling learners or learners at risk who need additional support (Fletcher et al., 2007). Thus identified learner receives added instruction regularly for about two months. During this time, the teacher uses a variety of appropriate teaching strategies and approaches on the basis of their performance and monitors the students' progress continuously (Christo et al., 2014). At last, the students who achieve significant progress are returned to the regular class, and who do not attain adequate progress are shifted to Stage 2.

Stage 2: Targeted Interventions. The students not attaining adequate progress in Stage 1 and shifted in Stage 2 are the targeted learner and treated in Stage 2 providing intensive instruction according to their capability, needs, and levels of performance. The intensive intervention is provided to these



targeted learners in a small group up to the level of intensity besides the instruction of the general curriculum (Fletcher et al., 2007). Generally, interventions are typically based on the areas of reading and mathematics. The time for intervention and support to the targeted learner depends on the case however it should not exceed normally a whole year. The students whose progress lag behind the expected level or attain very poor are then shifted for more individualized intensive interventions to Stage 3 (Christo et al., 2014).

Stage 3: Individualized Interventions and Comprehensive Evaluation. In this stage, the individualized, intensive interventions are provided and referred for a comprehensive evaluation of the student's skill and ability deficits to the targeted learner who does not attain the preferred level of improvement in Stage 2. In this stage, a comprehensive evaluation process is carried out by a multidisciplinary team to find out the eligibility for special education and other related services. Similarly, parents are informed about the comprehensive evaluation and its due process to determine whether the student is eligible for special education and related services or not (Fletcher et al., 2007). Thus, in this stage, the individualized intensive intervention is implemented, and also held a comprehensive evaluation of the learner (Christo et al., 2014). This approach always seeks to support academic success by utilizing universal screening, early intervention, frequent mentoring, and implementing individualized intensive interventions for the learner who is at risk of underperforming and continually facing difficulty (Fletcher & Vaughn, 2009).

Orton-Gillingham Method

The Orton-Gillingham method was developed by the American physician Samuel Orton and his associate, psychologist, Anna Gillingham from the meantime of 1930s to 1940s. It is a highly structured, systematic, sequential, and multisensory method to teach individuals suffering from dyslexia. In this method, explicit instruction regarding phonology and phonological awareness, correspondence of sound-symbol, syllables, semantics, morphology, and syntax is provided (Rief & Stern, 2010). It is a diagnostic method specially designed to teach reading, spelling, and writing to struggling students (Laney, 2011). The main feature of this method is multisensory, visual, auditory, kinesthetic, and tactile learning. It is based on individualized instruction and is provided incrementally and cumulatively to get the mastery level.

A brief of the key components that exist in the Orton-Gillingham method based on reading programs is stated below.

Multisensory Learning. The learning is designed so as to learn through multisensory input and activities for each individual so that they can learn best by using multiple sense organs. A multisensory learning method involves the mood of visual, auditory, kinesthetic, and tactile learning. The use of a multisensory mood of learning at a time helps the learner to grasp the knowledge and skills in a variety of ways. It is more interactive and also helps to make the learner more active by involving in reading, listening, touching, viewing, sometimes moving around the space and gesturing, etc.

Individualized Instruction. The intervention is completely personalized or individualized to get the needs of the learner and to move forward. The process of intervention began from the existing level of the learner and gradually moves forward as the learner improves their weakness and the teacher monitors each activity of the learner regularly. Each learning program is designed so as to fulfill the individual needs of the learner.

Sequential, Systematic, and Structured. The learning frame is so designed that the instruction starts from a simple concept and gradually moves toward more complex. Similarly, the learner moves from simple known to unknown or more complex. Systematic teaching denotes the skills and concepts that are taught in a planned, logically progressive sequence. The information which the teacher presents in a systematic, as well as an ordered way, signifies the relationship between the content taught and previous material. The contents of the curriculum are so structured linguistically as well as logically that facilitate student learning and progress.

Incremental, and Cumulative. The instruction and learning always start from one step to the next after mastering each level of language skills. The students are introduced in a certain order of words or letters based on logical steps that build on one another. While teaching the lesson, the linkage of each lesson is carefully linked with the previous. The learning of each component is so designed that the previously taught skills and material consistently helped to the mastery of the next component.

Flexible Implementation. The instruction of the teacher depends on the need and background of the students. In this method, when the teacher gets training about the teaching strategy for dyslexic learners they can implement their knowledge and skills in various ways in different groups depending upon the need of the student. Thus, it is flexible to implement the teacher's skills and approaches into any curriculum or classroom with students of all ages. It can be adapted over time to endorse continuous learning and problem-solving in each classroom.

Language-Based. It is completely language-based instruction and teaches the fundamental language structure that begins with sound/symbol relationships and moves ahead to more complex concepts such as higher-level spelling rules and other Greek and Latin Bases. It is also related to sound and symbols.

Support for Dyslexic Learners

As already discussed, dyslexia affects the memory and processing speed of the child which impacts working memory, literacy development, mathematics, sequencing, and organization of skills to varying degrees. It also affects the skills related to accurate and fluent reading and spelling. It can occur at any level of intellectual development however it mainly affects up to the age of adolescence. A large number of students are still suffering from problems related to dyslexia and its byproduct effect. Hence, it is necessary to provide support to them from the primary stage to assist with their language learning difficulties and cognitive weakness that can affect learning mathematics. According to Chin & Ashcroft (2017), most dyslexic children have short-term memory difficulties than non-dyslexia learners' impact arithmetical problems such as number sequence, reverse number, remembering basic number facts, formula, and times table facts. So, to minimize the challenges of dyslexic learners, it is necessary to support them in their teaching and learning by creating a proper learning environment, creating a sense of belongingness, encouragement, motivation, and self-esteem (Miller & Katz 2002). The ways of providing support for dyslexic learners are discussed briefly.

Developing an Inclusive and Supportive Learning Environment

An inclusive classroom refers to a learning environment where all students feel supported, feeling respected, feel a level of supportive energy and also feel a sense of belonging in the classroom regardless of any biasness (Ellery, 2020). In such a learning environment the teacher and student work together with support, coordination, respect, and mutual understanding for the success of the entire learner. As stated by Kaplan and Miller (2007), most students can be more likely to do well academically in the collaborative modes of learning that allow students' personal experiences. The development of such an inclusive and supportive learning environment can enhance the learner equally in each classroom setting and also create a culture of helping hands. It can also develop a collaborative culture that focuses on the establishment of sharing ideas, and supportive relationships and makes it easier and more confident for the struggling learners in the classroom. Such a learning environment can benefit all learners.

Creating Proper Learning Condition by the Use of Support Tools and Resources

Teaching and learning can be made effective by utilizing various tools and the necessary resources according to the age, interest, level of class, and size of the students. The student learning condition can be made through the students' active participation, proper classroom arrangement, praising the students positively, use of technology, and the use of different supportive tools. Similarly, the use of accessible resources in teaching such as interactive whiteboards, smart boards, computers, different software, etc. also can make teaching-learning more interesting.



Use of Multisensory Teaching-Learning Approaches

Multi-sensory teaching-learning approaches refer to the process used in teaching and learning that can be used to deliver education effectively in various ways. The main purpose of using the multisensory approach is to provide information or input the knowledge and activities to the learner in more than one way to make connections and learn the concepts. In this approach, learners can use more than one sense organ at the same time and their brain is stimulated in multiple ways so that the learning could be more effective. While using a multisensory approach, the dyslexic learner can also grasp information, activities, or skills through different forms such as listening, viewing, moving physically around the space, touching an object, or using gestures. Thus, instead of only listening, the learners can make images of the events through visual and auditory which makes learning easier, more effective, and long-lasting, and also increases the routes of memory and strengthens the information (Kormos, 2017).

Establishing Strong Relationships among Students, Teachers, and Parents

A good relationship between the student, teacher, and parent encourages the students to continue their learning effectively. The strong relationship among them also helps them to communicate with each other so that up-to-date information regarding the student's interests, work, and study habits can be obtained regularly (Allen et al., 2021). Such a relationship also helps to encourage the learner in their learning and also helps to make them aware of the social, emotional, and behavioral difficulties of the children for timely support. Therefore, the strong relationship of the student, teacher, and parent not only helps to support their needs but also makes it easier for earlier intervention that also assists the teacher and parent to pay sincere attention and play a supporting role in the children (Allen et al., 2021).

Developing Pupil's Confidence, Motivation, and Self-esteem

Student self-confidence is a sense of belief about any qualities, judgment, and abilities. It is the base for motivation and success in further education and also the enhancement of self-esteem. Motivation encourages the person for the best performance. A positive motivation always enables the learner to engage in their action and increases their performance and vice-versa (Hanich & Laurie, 2011). Thus, self-esteem is the product of the overall factors of an individual or sense of well-being and value of a person. The dyslexic learner mostly has full of fear and anxiety about their weakness. So, primarily, it is necessary to bust them positively and increase self-confidence, motivation, and self-esteem towards their learning before supporting them or solving their difficulty regarding dyslexia.

Providing Continuous Support, Encouragement, and Feedback

The dyslexic learners have poor or difficulty in reading, spelling, comprehension, confusion in a sequence of letters and symbols, and problems in the arithmetical calculation. Due to these weaknesses, they also have some sort of frustration and retention problems so they need continuous support in their respective areas. Similarly, they need encouragement and feedback to make them engage in the task. In some difficult areas regarding language learning, they need repetition and drill. Thus, a dyslexic learner needs a series of support that can only address their learning problem. Dyslexic learner requires a supportive and collaborative classroom so that they can get the chance of encouraging each other individually and also feel comfortable. The praise for every good activity and encouragement help them to empower and overcome their learning difficulty as well as emotional suffering.

Provide Sufficient Time for Revision and Overlearning

As mentioned earlier, dyslexic learners have language processing difficulties, poor reading comprehension, developmental delay, poor fluency, difficulty in remembering and recalling, etc. So, it is essential to provide sufficient time to encourage and facilitate the dyslexic learner. On the other hand, revision and overlearning or practicing recently acquired skills beyond the point of initial mastery are also essential. Revision and overlearning or repeated practice help to further strengthen the memory and the performance of the learner. The repeated practices enhance the function of short-term



memory and help to overcome remembering and recalling difficulties. It is conventional learning frequently boring rote learning however it is an essential and effective method to conquer the difficulty of the dyslexic learner.

The Effects of Dyslexia in Learning Mathematics

Dyslexia is mainly concerned with the ability to read, spell and comprehend the written language or problem however it also affects the child's mathematics learning abilities. It is a specific learning difficulty having a neurobiological origin. It is related to the difficulty to read, master, or acquisition of different skills and acquire mathematical abilities. As stated by Chin and Ashcroft (2017), 60% of dyslexic people have some problems with mathematics 11% of dyslexic people can do mathematics well and the rest of the dyslexic people have no learning difficulties. The survey report shows that (2-4) % of people may have severe dyslexia (Yeo, 2008). Dyslexia is a specific learning difficulty concerning the acquisition of basic skills related to reading, spelling, and/or writing or in a broad sense literacy (Roitsch & Watson, 2019). Thus, the dyslexic learner struggles to learn basic math vocabulary, symbols, memorizing multiplication tables and telling time, and other common problems related to specific vocabulary and arithmetic calculation (Snowling, 2019). It is claimed that 60 percent of dyslexic learners could have difficulties in learning mathematics due to cognitive difficulties in phonological deficit, memory, and processing speed (Joffe, 1980). Dyslexic children face difficulties in some areas of mathematics such as language, short-term memory, visual, processing speed of work, sequencing, conceptual ability, anxiety, thinking style, understanding of place value, and notation (Almahrag, 2021). The major areas of difficulty to learn mathematics for dyslexic learners or the effect of dyslexia in learning mathematics are discussed below.

Reading and Comprehension

The consequences of the difficulty in reading and comprehending language for the dyslexic learner affect the language of mathematics too (Almahrag, 2021). In mathematics, there is a large number of new vocabularies associated with the different mathematical concepts. Each such word is interconnected and is used interchangeably so that it can create confusion in each mathematical operation as well as mathematical word problem (Almahrag, 2021). The student cannot confine the actual solution of the problem when they do not know what is asked to do or do not comprehend the meaning of the mathematical term used. Therefore, it is essential to be proficient in the language of maths for learners with dyslexia. The maths language problems create confusion while solving maths, feel difficulty with word problems, and also makes trouble reading information from tables, figures, and graphs (Snowling, 2019).

Working Memory and Processing

The dyslexic learners have working memory deficits. Working memory refers to the ability of the brain to hold and manipulate different information over short periods of time. It has a vital role in mathematical fluency. Dyslexic learners have poor working memory (Roitsch & Watson, 2019). Similarly, the processing speed denotes the measure of time required to respond to and/or process the information in a specific situation. A dyslexic learner takes 50 % more time to complete a task than a non-dyslexic learner (Chinn & Ashcroft, 2017). They feel difficulty in learning and recalling number facts, new vocabulary, and formulae and suffer from rote memorization. Similarly, the dyslexic learner feels trouble remembering the multiple steps with processes. They feel difficult while solving word problems which require multiple steps such as reading the information, understanding the problem, retrieving the necessary math facts, and performing calculations to get the answer. Multiple steps are also necessary for substitution large numbers with borrowing, division, sequencing, etc. Dyslexic people usually are slower in maths, with many factors such as slow recall of basic facts, processes, and calculations due to poor short-term and working memory (Almahrag, 2021). Thus, the dyslexic learner is always focused on providing conceptual understanding rather than a procedure to support them. Similarly, enough time is given to dyslexic learners to learn, work and solve the problem.

Maths Anxiety and Self-esteem

The dyslexic student having weak in certain areas of mathematics also makes them anxious about mathematics. It is a negative emotional reaction toward learning mathematics and that also hampers the learner with the manipulation of numbers and the solving the mathematical problems (Chinn, 2008). Poor performance in mathematics leads to increase mathematics anxiety and vice versa (Ma, 1999; Ashcraft & Moore, 2009). Mathematics anxiety can have a significant impact on learners who are facing difficulties to learn. A large number of students can have anxiety with mathematics (Henderson, 2013) which hinder the learner to tackle efficiently the mathematical problems (Kunwar, 2020). Self-esteem is the overall state of satisfaction and comfort of a person. It consists of several factors such as self-confidence, security, self-respect, competence feeling and a sense of belonging. So, self-esteem is the overall well-being of the learner and impacts the learners' motivation, positivity, and level of inspiration to learn mathematics and also increases the level of confidence and encourages the learner to enhance the performance.

Cognitive Competency

A large number of dyslexic learners have difficulty learning mathematics (Miles & Miles, 2004). Mathematics learning also involves many cognitive processes and competencies. In some dyslexic learners, the abilities regarding cognitive competency do hinder recalling oral math facts, and specific words, and delay in developing essential counting, symbols, and multiplication tables (Almahrag, 2021). Similarly, they face problems in counting number sequences than other non-dyslexic learners (Chin & Ashcroft, 2017). They have also difficulty understanding the concept of time, sequence, and order. Dyslexic learner have often the problem of confusing math symbols and reverse numbers that look similar which lead to errors while performing the simple arithmetic calculation. Cognitive competency or having a quick sense of how these concepts, facts, and relations work and helps the learner to establish and solve the problem is the major part of learning mathematics. Thus, more repetition and practice are employed for the dyslexic learner to develop cognitive competence.

Conclusion

The problem of dyslexia in school education, especially in teaching and learning language and mathematics, is a crucial condition. Most developed countries have already developed the mechanisms for special teacher training, classroom management, and the utilization of various effective technologies in teaching. However, the scenario of an underdeveloped country is different. The term "dyslexia" is still a new term, and no teachers have been given special training about how to teach dyslexic children, nor do the teachers have enough knowledge about it. In this regard, this article provides a short overview of dyslexia, general characteristics of dyslexic children, dyslexia and mathematics, ways of intervention for dyslexic learners, and provides necessary support to the learner. It also makes the teacher as well as parents aware of why their children do not concentrate or give priority to learning math and why they are becoming poor in mathematics. This also elucidates the reasons for anxiety and frustration in mathematics and helps to identify the dyslexic person's means of intervention and support to overcome.

Ethics and Conflict of Interest

I declare and confirm that we have acted in accordance with ethical rules throughout the entire research and that there is no conflict of interest between authors.

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THE OPINIONS OF MOTHER, TEACHER AND CARER ON THE ROLE OF CAREGIVERS IN THE EDUCATION OF STUDENTS WITH SPECIAL NEEDS

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Abstract

This research aims to determine the views of mothers, teachers, and caregivers about the role of caregivers working in special education schools in the education of children with special needs. In line with this purpose, in the 2020-2021 academic year, five state and five private special education centers with school caregivers in Nicosia, Famagusta, and Kyrenia affiliated to the TRNC Ministry of National Education, in a total of 10 institutions (working teachers, caregivers and those with special needs). In addition, data were collected from mothers with children. In this context, the present research was conducted with the voluntary participation of 45 teachers, 17 mothers, and seven caregivers. The majority of mothers and teachers stated that at the beginning of their expectations from caregivers, they should support children in their daily needs and treat children well, support their self-care needs and ensure the socialization of children. While most mothers and teachers see caregivers as inadequate in their child's education, caregivers see themselves as sufficient. Findings indicate that caregivers should receive in-service training to be more efficient in children's education.

Keywords: Students with special needs, the role of caregivers regarding education, family, special education teacher, caregiver.

INTRODUCTION

The problems individuals with special needs suffer according to the type of disability or certain lines, and limits in their lives do not affect them only. At the same time, his mother, father, briefly all family members are infected. While the success or failure of the individual with special needs affects his family, these individuals are also affected by the attitudes and behaviors of their families towards the individual with special needs (Aydın, 2002). According to Dinç Kahraman (2010), one of the most important concepts for individuals who need special education is care. Care; can be defined as the services provided to individuals carefully and respectfully to meet their basic needs, develop and maintain their skills, and survive or organize their own lives by functioning at a minimum level (Dinç Kahraman, 2010). However, for individuals with special needs, the need for care is of great importance along with care. In this context, the need for care is defined as the situation where a person cannot do the daily activities needed to do alone for a long time or permanently without the help of others. A person in need of care is a person who cannot live



on her/his own due to illness, disability, old age, etc., and who needs the help and care of others (Seyyar, 2004).

It is an inevitable result that individuals with special needs suffer more problems than individuals with normal development. In this context, it is often both difficult and impossible for these individuals to learn the correct and necessary information from their peers and other sources. At the same time, it is not easy for them to learn by observing the behavior of the individuals around them. From this very point of view, it is seen that the families, teachers, and caregivers of individuals with special needs greatly need help and guidance (Kempton, 1975).

Characteristics (Due to the physical, mental, vision, hearing, etc.) of individuals with special needs differ both among themselves and from individuals with normal development. These features can also lead to differences in learning and behavior. These characteristics also affect the participation of individuals with special needs in educational activities. Therefore, some individuals can benefit from education and training services like individuals with normal development, while others can only benefit partially or very little (Altinkurt, 2008; Yaralı, 2015). It is observed that the families of children with special needs encounter some problems both in their communication with the teachers and in the meanings they attribute to the teachers. In this context, it is stated that families have high expectations from teachers, see teachers as caregivers of their children, and often have difficulties communicating with teachers. When teachers evaluate the same situation, they argue that families do not fulfill their responsibilities at home, do the homework instead of their child, cannot cooperate, and misjudge their children about education. It is seen that the families of children with special needs face some problems both in their communication with the teachers and in the meanings they attribute to the teachers. In this context, it is stated that families have high expectations from teachers, see teachers as caregivers of their children, and often have difficulties communicating with teachers. When teachers evaluate the same situation, they argue that families do not fulfill their responsibilities at home, do their homework, cannot cooperate, and misjudge their children about education.

Regarding all information given so far, caregivers, who can be described as a bridge between teachers and family, appear as an element of balance. It is seen that they have a key role for both parties, but they have reduced the burdens on them. It is assumed that caregivers can play a major role in ensuring cooperation with the teacher and the family to achieve the most efficient way to communicate. In addition, they are of great importance in terms of education and meeting the needs of children with special needs both in and out of school (Işık, 2014).

Children with special needs suffer from many problems in society. These problems can affect their quality of life. If a way is found to eliminate or reduce the problems children face with special needs, this may ensure their adaptation to the community in an easier way. Families and teachers of children with special needs can help children be more successful in life by working together on academic, social, and psychological issues. Apart from this, caregivers are hired in cases where working families cannot keep up. This study aims to investigate the role of caregivers in the education of children with special needs. When the existing studies in the literature are examined, there are very few studies have a mentioned on effects of caregivers involved in the education of children with special needs on educational practices at school (Altinkurt, 2008; Demirkan Baytar, 2014; Dolunay, 2016; Işık, 2014; Kaya & Yıkmiş, 2011; Küçük, 2009; Safiye, 2016).

In order for children with special needs and who also need caregiver support to participate more effectively in schools' education and training practices, the number of caregivers working in these schools should be increased both in quality and quantity. However, it would be beneficial to determine the role of caregivers working in special education schools in the education of children educated in these schools and who need



caregiver support. Therefore, it is important to design studies on the roles of caregivers working in special education schools. In this context, the problem of this research is to determine the opinions and suggestions of mothers, teachers, and caregivers about the role of caregivers working in special education schools in the education of children with special needs. Therefore, it was aimed to determine the views of mothers, teachers, and caregivers about the role of caregivers working in special education schools in the education of children with special needs. In line with this general purpose, answers to the following questions were sought:

1. What are mothers' views on the role of caregivers in special education schools in the education of children with special needs?
2. What are teachers' views on the role of caregivers in special education schools in the education of children with special needs?
3. What are their views on their role as caregivers in special education schools in the education of children with special needs?

METHOD

This section includes the research model, participants, data collection tools, data collection process, and data analysis.

Research model

This study used an inductive analysis model based on interviews, one of the qualitative research methods. The views of mothers, teachers, and caregivers regarding the role of caregivers in the education of individuals with special needs were determined. In the study, a qualitative research method was preferred to explain the roles of caregivers in the education of individuals with special needs, both realistically and holistically. In this study, a qualitative research method was preferred to explain the roles of caregivers in the education of individuals with special needs, both realistically and holistically.

Determining the research participants and their characteristics

In order to determine the participants of the research, primarily public and private special education institutions, which are affiliated to the TRNC Ministry of National Education and Culture, where children with special needs attend, were determined. Then, interviews were conducted with teachers and caregivers working in these institutions and families with children in these institutions. Fathers from families were also interviewed, but only mothers agreed to participate in the study. The caregivers included in the research actively work in a private education institution. In this context, 45 teachers, 17 mothers, and seven caregivers who volunteered from 10 private education institutions were included in the study.

Of the 45 teachers who participated in the study, 32 were female, and 13 were male. Twenty-eight of the teachers are between the ages of 20-30, 10 of them 31-40, and 7 of them 41-50 years old. Of the teachers, 26 are married, 19 are single, 14 have graduate degrees, and 31 have undergraduate degrees. In addition, 15 teachers serve in schools for one year, 11 teachers for two years, nine teachers for three years, and ten teachers for four years or more.

Two of the mothers participating in the study are between the ages of 20-30, 7 are between 31-40, and 8 are between 41-50. All of the mothers are still married. Two of the mothers are undergraduate, 7 are high school graduates, 3 are secondary school graduates, and 5 are primary school graduates. While 7 of the mothers have a job, ten mothers are housewives. Five mothers have one child, six mothers have two children, five mothers have three children, and a mother has five children.



Of the seven caregivers participating in the study, six are female, and one is male. It is seen that 1 of the caregivers is between the ages of 20-30, 4 of them between the ages of 31-40, and 2 of them between the ages of 41-50. Five of the caregivers are married, and 2 of them are single. Five of the caregivers, 5 of whom are high school graduates and 2 of whom are primary school graduates, serve in a state-affiliated special education center. In contrast, two serve in a private special education center. The length of service in the schools where the caregivers work was 1 for 3, 2 for 1, 3 for 1, and 4 years or more for 2 of them.

Data collection

Data by the first researcher; was collected with a form prepared to obtain information about the social-demographic characteristics of mothers, caregivers, and teachers, and an interview form consisting of semi-structured questions to obtain more detailed information about the views of the study group. After the literature review by the researchers, eight open-ended questions for mothers, eight for teachers, and twelve for caregivers were determined, and these were included in the semi-structured interview form. In addition, in the first part of the interview questions, a demographic information form was prepared to obtain general information about mothers, teachers, and caregivers. Afterward, to determine the clarity of the questions, a preliminary interview was conducted with two people with similar characteristics to the teachers, mothers, and caregivers in the research group.

The first researcher went to school according to the availability of the curriculum by contacting special education teachers via phone. The teachers were interviewed one-on-one and informed about the subject of the research, its purpose, and how it would be carried out. In addition, it was stated that the interviews would be held at a time convenient for them and that participation in the research was not compulsory. Afterward, meeting days were determined according to the availability of teachers in the curriculum. In addition, the families of students with special needs included in the research were invited to the school on the planned day and time, and interviews were held. In addition, the volunteers among the caregivers in the school were interviewed by determining the period they were available.

All of the interviews were conducted by the first researcher. The researcher's voluntary consent forms were given to the individuals before each interview. Interviews were conducted after the volunteer consent forms were read and signed. In the interview process, directive responses were avoided other than asking questions and giving hints to make the questions explanatory. After asking the interviewees and receiving satisfactory answers, another related question was started. A voice recorder was used in order not to lose researcher information. In addition, he used the time in the best way during the interview process and prevented the dispersion of the subject. Interviews with teachers, caregivers, and mothers of individuals with special needs lasted for at least four and ten minutes. Fifty-two pages were obtained from interviews with teachers, caregivers, and mothers of children with special needs. Interviews with the participants were held between 14 January and 27 February 2020.

Data analysis

The transcript of the interviews with mothers, teachers, and caregivers consists of 52 pages. The audio recordings obtained from the interviews with the participants were first transcribed in the computer environment. Then, the information obtained from the audio recordings was transcribed without any changes and recorded by giving code names. The participants' answers taken from the computer with the voice recording were compared and checked. As a result of the control, it was determined that the documents were consistent with the audio recordings.

After the final checks of the documents were made, the data obtained were analyzed in four stages. In line with the answers given by the participants, codes were created by giving names to significant parts such as common words, sentences, or paragraphs. Themes were determined in line with the coded data, codes and themes were arranged, and finally, the findings were defined and interpreted. Three themes and 28 sub-titles



were determined, and themes and sub-titles were analyzed and organized. During the coding, the same codes were tried to be given to the sections that had the same meaning and were equivalent to each other, and it was important not to give different codes. During the analysis period, the speeches on the voice recorder were translated into written documents without making any changes. The mothers participating in the research were given the code "A," the teachers "O," and the caregivers "B," and numerical codes from 1 to 69 were given according to the order of the interview. The content analysis method was used to analyse the obtained data.

Study of validity and credibility

In this research, the transferability (external validity) of the research was ensured by presenting examples of the sentences in which teachers, mothers, and caregivers expressed their opinions, that is, by making "direct quotations." to ensure internal validity in the research, expert opinions were taken concerning questions in the interview form, research data, and comments. In addition, to ensure internal validity, participant confirmation was provided by showing the results and comments made after the data analysis in 25% of the participants. An expert was asked to perform a consistency review to ensure internal credibility. As a result of the examination, it was determined that the analysis approaches and the relations established between the results and the data were consistent. In order to ensure external credibility, the raw data obtained in the research and the conclusions and comments made in line with these data were presented to the field expert for confirmation, and the confirmation was obtained.

FINDINGS

In this section, the findings obtained in line with the opinions of the teachers, mothers, and caregivers, who are the participants of the research, are included. Since the views of all participants will cover much space in terms of page boundaries, a limited number of opinions that allow a good understanding of the subject is included.

Mothers' views on the role of caregivers in the education of children with special needs

This section includes the findings obtained from the semi-structured interview questions created for families according to the research purposes. In the presentation of the findings, the order of the questions in the interview form was taken as a basis.

What are your expectations from your child's caregiver? From the answers given by the mothers to the question, it is understood that the most expectation of mothers from caregivers is to provide support to their children in their daily needs and to treat their child well. A1 coded mother, one of the interviewed mothers, expressed this situation as follows;

"I have expectations such as interfering with the child's self-care skills and behaviors correctly, helping the teacher at school when appropriate, and treating my child as the same parents during recess."

The second characteristic that mothers expect most from caregivers is that they treat their children well. Mother coded A9 stated this situation as follows:

"I want him/her to look after my child as good as possible. I do not want him/her to behave badly. S/he cannot give lessons like a special education teacher. S/he cannot give one-on-one training. The caregiver can be difficult. However, I want him/her to approach it like his own child. S/he should approach my child in the same way s/he treats his/her child. I want my child's caregiver to add positive things to my child in this way."

Does your child's caregiver benefit your child? If so, what benefits does it have? When the answers given by the mothers to the question were examined, it was understood that the mothers stated that the caregivers at school are most beneficial in supporting their children's self-care needs and providing socialization. A14



coded mother from families who stated that the benefit of caregivers for their children is to support their child's self-care needs expressed this situation as follows;

Does your child's caregiver benefit your child? If so, what benefits does it have? When the answers given by the mothers to the question were examined, it was understood that the mothers stated that the caregivers at school were most beneficial in supporting their children's self-care needs and providing socialization. A14 coded mother from families who stated that the benefit of caregivers for their children is to support their child's self-care needs expressed this situation as follows;

"The most benefit is at school environments. S/he meets the needs of toilet and cleaning..."

According to mothers, the second rank among the benefits of caregivers towards their children is the socialization with their children. The mother with code A16 expressed this situation as follows;

"...S/he accompanies him at the school. As my son has autism, he can socialize with the caregiver to some extent."

What benefits does your child's caregiver provide to you? When the answers given by the mothers to the question are examined, it is understood that the mothers stated that the caregivers provided the most convenience to spare time for themselves. The mother with code A5, one of the interviewed mothers, stated that the caregivers made it easier for them to "spend more time" for themselves as follows;

"...I can spend more time to myself. In the past, as long as my son was at school, I was always with him. Now I have more time. I know that the caregiver is with him when I cook, clean, etc., at home. I feel at ease, and I have more time."

What do you think about the competence of your child's caregiver regarding your child's education? When the answers given by the mothers to the question are examined, it is understood that the majority of the mothers stated that the caregivers are not sufficient in the education of their children. A1 coded mother, who stated that the caregivers were not well-equipped for the education of her child, expressed this situation as follows;

"...We cannot say that s/he is very useful in education because s/he is not like a teacher. Also, our caregiver does not have much experience, so it is not enough."

Another mother, A7, who stated that the caregivers were insufficient, expressed this situation: *"It is not enough. His/her knowledge and experience cannot be compared with those of the teacher. The caregiver does feed, give medicine, care, and play."*

What should be done for your child's caregiver to be more efficient in your child's education? When the answers given by the mothers to the question are examined, it is understood that the mothers expressed that the caregivers mostly need to receive in-service training on how to increase the efficiency of their children's education. A4 coded mother expressed this situation as follows;

"...They need to get different pieces of training in special education field..."

What is your level of communication with your child's caregiver? Do you have trouble communicating with the caregiver? If so, what are these problems? What suggestions would you give to overcome the problems you have with your child's caregiver? When the answers given by the mothers to the question were examined, it was understood that the majority of the mothers expressed that they did not have any problems communicating with their caregivers. A1 coded mother, who stated that she did not have such problems, expressed this situation as follows;

"We communicate quite well. S/he was aware of his/her responsibilities. S/he even had done other duties that are not his/her responsibility. I had no problems..."



Do you cooperate with your child's caregiver? If so, how do you cooperate? When the answers given by the mothers to the question (daily life, self-care, transportation, education, etc.) A5 coded mother, who stated that she cooperated with the caregiver in transportation, expressed this situation as follows;

"...I drove my child to school, but in case of illness or if I will be late due to job, s/he drives him/her back home...."

As mothers expressed, the area of less cooperation with caregivers is education. Mother M9, expressed this situation as follows;

"Sure, we cooperate. When required, we sit together like two friends and special research education. For instance, I say, 'You can study this subject with my daughter.'

How often do you meet with your child's caregiver and evaluate your child? When the mother responds to this question, it is understood that most mothers meet with the caregiver almost every day and evaluate the situation of their children. One of the interviewed mothers, the mother coded A1 stated that they evaluate the situation of the caregiver and the child every day. A1 coded mother expressed this situation as follows;

"We make a post-school evaluation. When they left school, what did he do today, and what behaviors he represented, good or bad, I ask them..."

Opinions of special education teachers on the role of caregivers in the education of children with special needs

In this section, the findings obtained from the semi-structured interview questions created for special education teachers in line with the purposes of the research are included. In the presentation of the findings, the order of the questions in the interview form was taken as a basis.

What are your expectations from the caregivers of students at your school? When the answers given by the teachers to the question are examined, it is understood that the teachers mostly expect the caregivers to meet the needs of the students. Teacher coded Ö43 expressed this situation as follows;

"To pay necessary attention to students' deficiencies and meet their needs."

The teachers stated that the least among their expectations from the caregiver is to make the student independent and ensure the student's safety. Teacher coded S12 expressed this situation as follows;

"They do the skills that kids can do right before the kids do. We aim to liberate them. Let him/her give the child the opportunity first. S/he can show and do it where s/he cannot. Special children and families from caregivers expect to give the child an opportunity first. The caregiver should not be the one who meets all. First of all, the child should be given the opportunity."

The teacher with the code S17 stated that his expectation from the caregiver is to ensure the student's safety as follows.

"S/he will always keep an eye on the child. S/he will take responsibility because it is not clear what these special children will do at any moment. Maybe s/he has an ailment. It may fall. Maybe s/he cannot walk well. S/he could hit his head. These are important to us. I would like him/her to approach the child with a protective approach."

Do the caregivers of students at your school benefits students? If so, what benefits do they have? When the answers given by the teachers to the question are examined, it is understood that the teachers stated that the benefits of the caregivers to the child are mostly self-care and meeting the toilet needs of the child. The teacher with the code S10 expressed this situation as follows;



“Exactly, they do help. The child, especially those who cannot perform their basic self-care skills, needs a caregiver. This process works well when the caregiver coordinates with the teacher.”

Secondary help caregivers provide, as stated by the teacher, is to meet students' toilet needs. Teacher Ö3, expressed this situation as follows;

“Of course, this help. I have four students in class, and student A has a caregiver as his/her deficiency is more serious. When student A wet himself, I cannot leave the class to change his/her pants. Because I had other students in class, for this reason, I called the caregiver for it. S/he comes and changes his/her pants. Also takes care of his/her toilet need...”

Do the caregivers of students at your school benefits students? If so, what benefits do they have? When the answers given by the teachers to the question are examined, it is understood that the teachers stated that one of the benefits the caregivers provide for them is to save time. One of the teachers with the code Ö4 who participated in this study expressed this situation as follows;

“Their help to us is greater than thought. We can reach the caregiver easily when one of such students represents problematic behaviors. It saves us time...”

Do the caregivers of students at your school benefits students? If so, what benefits do they have? When the answers given by the teachers to the question are examined, it is understood that the teachers stated that the benefits of the caregivers to the child are mostly self-care and meeting the toilet needs of the child. The teacher with the code Ö10 expressed how caregivers help them in self-care skills as follows;

“They do us great help in self-care skills. Self-care is the most dreadful topic for us among other skills...”

What do you think about the sufficiency of the caregivers concerning the education of the students? When the answers given by the teachers to the question are examined, it is understood that most teachers think caregivers are insufficient in the education of students. The teacher Ö3, who thinks caregivers are insufficient for the education of students, expressed this situation as follows;

“Unfortunately, they are not sufficient in education. They do not exactly know how to approach students as they have limited area and literature knowledge. For instance, they do not show sufficient skill or represent right approach in the recording when a child needs a toilet, how can one record this, or determine how they feel a need for toilet per day with regular periods.”

What do you suggest for caregivers to be more productive concerning the education of students? (Probe: Teaching support, generalization studies, class management) When the teachers give the answers to the question are examined, it is understood that they suggest caregivers get more in-service training in order to become more equipped regarding education. One of the teachers, Ö11, stated that caregivers should take in-service training in order to be more sufficient in education:

“There could be training organized. A good result could be achieved if training programs or seminars were held on how to care for a child with special needs, what can be taught, how can they approach such children, how they help us in the school, and how they can help the family at home.”

What is the level of communication of students with caregivers in your school? Is there any problem concerning communication with caregivers? If there is, what are those problems? What is your suggestion to overcome the communication problems of the students in your school with the caregivers? When the answers given by the teachers to the questions are examined, it is understood that most of the teachers think students have no problem communicating with caregivers. One of the teachers interviewed with code Ö1 defined this situation as follows:



“We have not experienced such a problem so far. S/he is a good caregiver. There were even times we called him/her 4-5 times in a day, and still, I never heard him/her complain. If we face a problem, we prefer to give him/her our advice and help. As s/he has no such knowledge and is unsure what to do, s/he can also confuse. So we guide him/her on what to do.”

Do you cooperate with the caregivers of the students in your school? If so, how do you cooperate? When the answers given by the teachers to the question are examined, it is understood that the areas in which teachers cooperate with caregivers are mostly generalization studies and coping with problem behaviors. One of the teachers included in the research with the code Ö19 expressed this situation as follows;

“This is how I get into cooperation: We cooperate to ensure the generalization of applications we use in the classroom in other exterior environments when we are not around. We try to describe our methods and align with the same strategy.”

Teachers expressed that the other area they are more in cooperation after generalization studies is dealing with problematic behaviors. Teacher with Ö11 code expressed this situation as follows:

“...When I see a problematic behavior, I ask the caregiver's reason. I try to correct this behavior if I can.”

How often do you meet with the caregivers of the students at your school and evaluate the students? When the teachers gave the answers to this question, it was observed that the majority of the teachers stated that they meet almost every day to evaluate the situation of the caregiver and the child together. One of the teachers interviewed with the code Ö1 expressed this situation as follows;

“We take the child from the caregiver every morning. When we deliver the child back to the caregiver, we summarize our activities that day. In addition, we inform the caregiver from an academic aspect about instructive plays and such activities we did during the day.”

Views of caregivers on their roles in the education of children with special needs

In this section, the findings obtained from the semi-structured interview questions created for caregivers for the research are included. In the presentation of the findings, the order of the questions in the interview form was taken as a basis.

How do you spend a day with the child? What do you do when you are with the child? When the caregivers answer this question, it is understood that self-care is the most applied activity from the caregivers with the child during the day. B2 coded caregiver expressed this situation with the following words;

“Usually, I try to fix the child's self-care, s/he already has a toilet problem. If I take it to the toilet, it does it by itself, and if I do not, it soils the bottom. I am trying to mend these problems.”

How do you contribute to the child's education? When the answers given by the caregivers to the question (Probe: Educational, Self-care, Daily life skills support, Social skills support) are examined, it is understood that the caregivers state that they contribute to the child's education mostly in the field of social skills teaching. B3 coded caregiver expressed this situation as follows;

“I got him/her used to talk, play, not to hit his/her friends. S/he used just to want to eat and sit. S/he hit anyone passing by his/her side. We reduced these behaviors with education.”

What do you think about your proficiency in working with a child with special needs? When the answers given by the caregivers to this question were examined, four of the caregivers did not find themselves sufficient in the education of the child, while three caregivers did. The caregiver coded B2, one of the caregivers within the scope of the research, expressed her opinion of not finding herself sufficient as follows;



“I do not find myself sufficient; I said this clearly when I started working with the family. Suppose you ask why I have not received any training on this subject. Before, I have been a nurse, but I have not worked with such children. So, I cannot say I am good enough. I did not receive any education anywhere, but I act with my sense of motherhood and try to do my best.”

Another caregiver with B3 Code who founds him/herself sufficient in the education of the child expressed this situation as below:

“As I worked in a school in the UK, I am quite experienced on how to act and to help the child. I instructed in that school in the UK in the same class as these children. That experience made so much contribution to me. That is why we came a long way with my student.”

Do you have problems communicating with the child? If so, what are the problems you encounter in communicating with the child? When the answers given by the caregivers to this question are examined, it is understood that the majority of the caregivers state that they do not have any problems communicating with the child. One of the caregivers who stated that s/he did not have any problems in communicating with the child, the caregiver coded B2 stated this situation as follows;

“I have no problem. S/he listens to me very well. In the first three months, in particular, I had many problems. After that, we attended training together. This program helped me about how to communicate and act. So, I came over with this problem in time.”

Do you help feed the child? If so, how do you help? When the answers given by the caregivers to the question are examined, it is understood that the majority of the caregivers state that they contribute to the nutrition of the children by feeding them themselves. The caregiver coded B2, one of the caregivers who stated that they contribute to the nutrition of children by feeding the child themselves, stated this situation as follows;

“I take care of his/her feeding myself in every way. ... I help him/her when using a spoon when eating foods like soup.”

Do you help the child perform self-care and daily living skills? If you are helping, what is the nature of this help? When the answers given by the caregivers to the question were examined, three of the caregivers stated that they contributed to the toilet skills of the children by contributing to their daily life skills. In contrast, two caregivers stated that they helped with brushing teeth, one in the dressing and one in the bathing. The caregiver coded B4, who stated that s/he helped the child with toilet skills, which is one of the self-care and daily life skills, expressed this situation as follows;

“I help the child for using the toilet in particular. S/he can only use the toilet in the right way if I guide him/her.”

Do you help the child to go to school and other relevant institutions? If you are helping with transportation, how do you help? When the answers given by the caregivers to the question are examined, it is understood that four caregivers stated that they provided the transportation of the children to school and other relevant institutions. Three caregivers stated that they did not, but the child's parents did. The caregiver coded B4, who stated that s/he provided the transportation of the child to school and other institutions, expresses this situation as follows;

“I accompany him/her to the school every morning, and I accompany the child while transporting to another special education institution afterward.”

Do you help the child organize his/her free time? If so, what are you doing about it? When the answers given by the caregivers to the question are examined, it is understood that the caregivers state that they contribute to organizing the child's free time mostly by "playing together." The caregiver coded B2, who



stated that s/he contributed to organizing the child's free time by playing games, expressed this situation with the following words;

"... The child gets bored and stressed after school. We are playing games to keep him/her occupied."

Do you encounter problems solving the child's daily life problems in your care? If yes, what kind of problems do you encounter? When the answers given by the caregivers to the question are examined, it is understood that three caregivers state that the problem they encounter with the child in daily life is mostly that the child has nervous breakdowns. In comparison, two caregivers express the child's lack of communication. Two caregivers stated that they did not have any problems with the child. The B2 coded caregiver stated that the most common problem encountered by the child in daily life is nervous breakdowns;

"I encounter many problems. I constantly try to communicate and express that his/her behavior is bad, though s/he listens, s/he still does whatever s/he wants to do." There are times of insistence. S/he becomes angry and starts throwing things when something s/he wants does not happen. S/he behaves exactly in a manner you do not want him/her to just out of spite.

Are there any subjects related to the child's education (which will support the areas in which he is inadequate) that you would like to receive an education in? If so, what are they? When the answers given by the caregivers to the question are examined, it is seen that gaining toilet skills and social skills comes at the beginning on subjects the caregivers desire to receive education (which will support the areas where s/he is inadequate). The caregiver coded B2, who stated that s/he wanted to receive training to help children gain toilet skills, expressed this situation as follows;

"The toilet issue is the only problem we are nervous about. I am not sure how to act. We neither have a solution at the school nor home. I want to get an education on this subject. I have been working with this child for four years now and have no progress yet. The family expects me to fix this, so they know that their child will not need someone in the future."

Are you having problems with the child's family? If yes, what are those problems? When the caregivers' response to the question is examined, it is understood that all of the caregivers did not have any problems with the child's mother. The B4 coded caregiver stated that she did not have any problems with the child's mother: *"No, I have never had any problems; we get along very well."*

Are you having trouble with your child's teacher? If yes, what kind of problems are you experiencing? When the answers given by the caregivers to the question are examined, it is understood that all of the caregivers did not have any problems with the teachers. The B4 coded caregiver stated that the child did not have any problems with the teacher: *"No, I have never had any problems with their teachers. His teachers were also very understanding."*

DISCUSSION

In this section, the findings obtained from the participating mothers, teachers, and caregivers in line with the general and sub-objectives of the research were discussed by comparing them with each other and with the literature.

When the findings related to the views of mothers and teachers of children regarding the role of caregivers working in special education schools in the education of children with special needs are examined, it is observed that the views of both mothers and teachers are parallel to each other. It was concluded that most of the mothers participating in the study had expectations from their children's caregivers to support their children in their daily needs. Likewise, it was determined that special education teachers expect caregivers to meet the needs of the students. This finding is similar to some studies on this subject in the literature. In one of these studies, Kaytez et al.'s study conducted in 2015, it was determined that mothers think caregivers



who work in an institution where children with special needs must have more knowledge about meeting the needs of the children. It is found that similar results were obtained in the study conducted by Sağıroğlu (2006). In this research, families expect the institution's employees to whom they send their children to be experts in their children's education. In this context, it can be considered an inevitable result that their expectations from caregivers are high in terms of education. The fact that caregivers are better equipped for children with special needs will positively affect children's education and meet the expectations of teachers and mothers in a more efficient way.

When the findings are compared with the literature, it is seen that similar results are obtained. In one of these studies conducted by Ünüsan (2004), it was found that the students at the preschool education level there are positive effects was observed on the self-care skills of the children who went to the preschool special education center and attended the systematic education and who had the opportunity to repeat the behaviors related to their self-care skills with routine activities during the day. In this context, it is seen that the relevant studies have similar results to the study we have carried out. While the mothers stated that the caregivers at school were most beneficial for their children in terms of supporting their children's self-care needs and ensuring their socialization, another finding reached in line with the sub-objective mentioned above was that the teachers expressed the opinion of the caregivers in parallel with the child's self-care and meeting the toilet needs. Based on the opinions of mothers and special education teachers that caregivers benefit from helping the child with special needs take care of themselves, it can be said that families and teachers need caregiver support in the daily life and self-care matters of children with special needs in a school environment. In this context, when these expectations of mothers and teachers are fulfilled, teachers will be more motivated for the child's education. As a result, the teacher will be able to create a more productive educational environment.

Another finding of the study is that both mothers and teachers expressed that they save time thanks to caregivers. When this finding is compared with the literature, it is seen that similar results are obtained. In the study conducted by Chang et al. with mothers in 2016, mothers stated that the caregiver relieved them both physically and mentally due to the multitude of responsibilities related to caring for the child with special needs. In line with the data obtained from the research, mothers state that they spare more time for themselves and can work a job thanks to the caregiver. This finding supports previous findings. Special education teachers save time when caregivers meet the child's needs and their self-care, and mothers find time to spare for themselves.

In the study conducted by Borbasi et al. (2009), it is seen that there are findings similar to this study. While the mothers and teachers expressed an opinion that the caregivers working at the school were not sufficient in the children's education, the caregivers expressed that they did not find themselves sufficient, too. It was concluded that caregivers do not have enough knowledge about care services for individuals with special needs. An incorrect intervention by caregivers can significantly reduce the quality of life of such individuals. In this context, the caregiver's education can negatively affect students' adaptation process and educational development. Therefore, caregivers must be adequately equipped to meet the needs of individuals with special needs. It is thought that these children will contribute directly or indirectly to the education and training activities at school, with the knowledge and equipment of the caregivers about the individuals in need of special education, and this contribution will positively reflect on the development of the children.

Another finding of the research is that mothers and teachers stated that caregivers at school should receive in-service training to be more productive in children's education. This finding is similar to a study on this subject in the literature. In the study conducted by Khargi (2018), it was concluded that caregivers tend to feel more empowered to provide care services to children with special needs when relevant information is provided, or in-service training is provided to the caregivers of individuals with special needs. In line with



these results, if the caregivers are informed about the characteristics of children with special needs and in-service training on the methods and techniques used in the education of these children are provided, an environment will be provided for the caregivers to increase their knowledge, know where and what to do, and have a more efficient caregiver-student process.

Another finding regarding the data obtained in the research is the opinions of mothers and special education teachers that they do not have any problems with caregivers at school. Despite this finding, some mothers and teachers stated that they had communication problems with foreign national caregivers. When some of the studies in the literature were examined in line with the findings, it was stated that, unlike in this study, family members experienced communication problems with both health professionals, teachers, and caregivers both during the diagnosis and evaluation process of the child and after (Graungaard & Skov, 2006; Hyassat, 2012; Kisler & McConachie, 2010). These problems, which may occur between the family and other stakeholders, may negatively affect the child's development. It is important to solve these problems, which may occur among the family, teachers, and caregivers in the child's life, as soon as possible. If this process is prolonged, the development and education of the child may be interrupted. In addition, training can be given to both the child and the caregiver to eliminate communication problems with foreign national caregivers.

In the study, it was found that mothers and teachers cooperated with caregivers. While the mothers expressed that they cooperated with the caregivers at school on the transportation of the child, the special education teachers also stated that they cooperated in generalization studies and problem behavior situations. When the findings are compared with the literature, it is seen that similar results are obtained. It is seen that individuals with special needs both have less physical negative reactions and are more emotionally courageous and assertive as a result of the cooperation between their families and the people around them. Thus, it was concluded that negative emotions and feelings towards individuals with special needs became positive in terms of families, teachers, and caregivers (Carpenter, 2005; Heiman, 2002; Russ et al., 2004). This information shows how important communication and cooperation between caregivers, teachers, and mothers is in children's education. In case of cooperation between the mother, special education teacher, and caregiver, it is thought that the education that the child with special needs will receive at school will be more qualified. As a result, positive reflections will appear on the child's development.

When the findings regarding the role of caregivers working in special education schools in the education of children with special needs are examined, it is understood that caregivers contribute to the child's social skills teaching the most. This finding is similar to some studies in the literature. For example, in a study conducted by Küçük (2009), it was determined that children cared for by caregivers were better in social relations, and the said difference was higher, especially for girls. Similar results in question are also obtained in our study. In this context, caregivers are expected to establish good communication with the child with special needs and contribute to their social development by playing games to develop their social skills. In addition, the caregiver can enable the child to participate in social environments within the scope of certain social activities during school hours. If they provide childcare services outside of school, it is believed that they will contribute to the child's social development by including normally developing peers in the same activity.

Another finding obtained from the caregivers within the scope of the research is that they stated that they did not have problems communicating with the child. However, a small part of the caregivers stated that the child with special needs could not tell to go to the toilet and did not do it as instructed. When the findings are compared with the literature, it is seen that similar results are obtained. In Stange's study (2018), it was found that caregivers provide care to children with special needs for more than seven hours every day. No



problems were encountered in their communication with family members and children in this context. These results show that caregivers can communicate correctly with the child with special needs.

Another finding obtained from caregivers in line with the scope of the research is that they help children more with toilet skills. Similar results to this finding were found in the literature in the study conducted by Ceylan (2019). In this study, mothers' opinions were sought. Mothers stated that kindergarten children made significant progress in meeting their own needs, especially after starting nursery school. Apart from this finding obtained from these studies, another very interesting finding was reached in this study. Caregivers stated that they mostly wanted to be trained in toilet skills. These results show that caregivers do not have enough information about gaining toilet skills, which is the most helpful area. Suppose caregivers are provided with in-service training on this subject, and the correct methods and approaches are presented. In that case, caregivers will not only provide children with toilet skills but will also contribute to gaining this skill. Thus, these children may gain toilet skills faster, and the burden on mothers may be reduced.

The last finding of caregivers in the study is caregivers' opinion that children spend their free time playing games. When this finding is compared with the literature, studies on the importance of games rather than playing games in free time are discussed. According to the results obtained in some studies (Wood & Attfield, 2005; Clevenger, 2016), parents have expressed that games provide "learning while having fun." The authors in the literature support this view and the game presented by the trainer; they state that they create special and extraordinary opportunities for children such as learning, gaining knowledge, and meaning development (Wood & Attfield, 2005). In the same way, Clevenger (2016) found that children with special needs have fun and learn more through play in the research they conducted with teachers and revealed how important games are in the education of these children. In this context, taking into account the benefits of the game, giving information to the caregivers about the games, and training them in this regard may lead to a greater contribution to the development of the children. The following recommendations can be made for practice and further research in line with these results.

1. Awareness and information seminars on care services at school can be organized for families with children with special needs.
2. Relevant people can be trained to strengthen the communication between caregivers and children with special needs, families, and teachers.
3. Caregivers can be trained on how to provide support and training for children with special needs to gain self-care skills and cope with problem behaviors.
4. Research can be designed in which qualitative and quantitative data will be collected to determine the opinions and suggestions of mothers, teachers, and caregivers regarding the role of caregivers working in special education schools in the education of children with special needs.
5. Research can be planned in which the opinions of students with special needs and school administrators about the role of caregivers working in special education schools in the education of children with special needs.

Ethics and Conflict of Interest

This study was adapted from the first author's Master's thesis. We declare and confirm that we have acted in accordance with ethical rules throughout the entire research. No potential conflict of interest was reported by the authors.



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SOCIAL NETWORKING USAGE AND ACADEMIC PERFORMANCE OF SCHOOL-GOING ADOLESCENTS IN OYO CITY, NIGERIA

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Abstract

Students' involvement in social network activities has been a topical issue in the academics sphere. This could have enormous influence on their education. This study thus examined the relationship between social network usage and academic performance of secondary school students in Oyo City, Oyo State, Nigeria. Correlational design method was adopted for the study. The 180 students in the study were selected using simple random sampling technique from four Local Government Areas in the City. A researcher's designed instrument entitled "Social Network Sites Usage Questionnaire (SNSUQ)", with a test re-test reliability index of .81 was used to collect data for the study. On the other hand, the students' academic performance was measured using their overall grade in their third term English and Mathematics examination results. Pearson's (r) statistic was used to test the null hypotheses at 0.05 alpha level. The study revealed that social network sites usage (Facebook, Whatsapp, Instagram and Internet search) has negative relationship with the students' academic performance. It is recommended in this regard that education stakeholders; parents and school should work together in monitoring students' activities on social network and design a programme to encourage them towards using social networking channels to improve their academic achievement.

Keywords: Social network usage, academic performance, secondary school students, Oyo City.

INTRODUCTION

Advancement in technology has the globe into a digital world. Human interactions and exchange of ideas has become so flexible without any bound or limit. Distance and physical barriers had been eliminated that people of different age group and social class can communicate through varieties of social networking sites. This is why Daluba and Maxwell (2013) described social network as a means of interactions among people of different ages; where messages, information or ideas are created and shared in virtual communities. Social network sites are highly interactive platforms and new forms of media that relies heavily on the participation of users to provide value (Neese, 2016). Some of the popular social network sites and interactive applications include but not limited to Facebook, Instagram, Twitter, Pinterest, LinkedIn, Vive, Snapchat, Whats-App, We-Chat, YouTube and Google+. They all have similar features of immediate feedback, interconnectivity, virtuality, interactivity, multimedia file exchange, and instantaneous delivery.

This modern has ushered in a number of activities of the social network sites which have become sources of distraction to many young Nigerian; youth involvement in all forms of delinquencies have prevented them from paying due attention to their education and personal development. Many young adults have become phone addicts as a result of visiting the social networking sites at the expense of valuable things they could have used these platforms for. Valkenburg and Piotrowski (2017) noted that the current smart-phone world have breed a generation of youth who are "phono sapiens"; that is, they are addicted to phone use and social network sites is the main contents and applications on mobile phones that glue their attention.

The above does not imply that social network sites are bad or disadvantageous; but how and for what an individual uses them are essential as they are embedded with enormous benefits that can dramatically change someone's educational, social and emotional life. However, many Nigerian youngsters are using the sites for frivolities. Brown (2017) highlighted some negative effects of social media on the youth; which include increased violence, addiction and reduced productivity. Similarly, Pino (2017) noted that the negative consequences of social network sites are more than positive ones among the young generation; Pino stated that sleep deprivation, isolation, depression and obesity are some of the effects that the social networking sites could have on the users.

It is no doubt that youth are the massive users of the social network sites and on a daily basis, they spend much of their time and money to remain on the sites. This includes hours spent chatting with friends via WhatsApp, Snapchat, Facebook, Instagram and surfing the internet. Valkenburg and Piotrowski (2017) reported that the time youth spend on social network sites is more than three hours a day, which is more than the amount of time they spend on television and gaming; while they spend like 35 minutes reading their books or to attend to other educational tasks or activities.

In this study, the focus is on the Facebook, WhatsApp, Instagram and Internet search usage and some previous studies have revealed mixed findings on their relationship with students' academic performance. For example, While Lambic (2016); Wang and Mark (2018) found that Facebook use to be correlated positively with academic achievement of students, Feng, Wong, Wong and Hossain (2019); Junco (2012) revealed a negative impact of Facebook on students' academic performance. Munkaila and Iddrisu (2015); Al-Hassan, Abdul-Karim, Christian and Idriss (2017); Daramola and Umar (2021) reported a positive effect of WhatsApp on students' academic performance, while Tuurosang and Faisal (2014); Sarker (2015) revealed a negative relationship between WhatsApp and academic performance of students.

Perifanou, Tzafilkou and Economides (2021) showed no impact of Instagram use on students' digital skills; Ahmed, Rony, Ashhab and Ahmed (2020) showed no correlation between Instagram usage and students' CGPA, but Alatawi (2016) indicated that the impact of Instagram use leads to a negative impact on students' academic performance. Feng, Wong, Wong and Hossain (2019) established a significant negative relationship between internet search and students' academic performance.

Statement of the Problem

The development of different social network sites has enormously benefitted and is benefitting the world. Students, particularly, can use them to improve their communication skills, interpersonal relationships and educational tasks. Students can use the platforms profitably to improve their reading and learning skills, sharing vital educational information, enhance their communication and problem-solving skills, facilitate effective brainstorming and decision makings, engaging in virtual classroom discussion, expressing their feelings and grievances to teachers and school authorities, among other uses of social network sites. The reverse is the case however, among many secondary school students invest much of their time on the platforms involving in unethical activities, sharing of useless information and posting images that are injurious to national dignity and foreign relationship of the country (Shabir, Mahmood, Hameed, & Safdar, 2014).

Students have lost sight of their goals in life and the purpose for which their parents send them to school to achieve. Many have become so engrossed with their phones that they chat and interact on Instagram, Facebook, WhatsApp while on the street and at the expense of academic hours. Their frivolous engagement results in poor time management, lack of commitment to study and consequently, poor academic performance. Osharive (2015) observed that even in classrooms, students are often seen busy chatting, twitting, whattapping or Facebooking, while lectures are ongoing.

In addition, few studies had been able to establish the relationship that exists between social network sites and students' academic performance, especially, among secondary school students and in the locale of this study. Many of the available studies were not conducted in Oyo Town and they mainly focused on the students of tertiary institutions. For instance, the study by Mohammed and Abdullahi



(2020) examined the influence of social media on students' academic performance in College of Education (Technical), Lafiagi Kwara State. Osharive (2015) examined the influence of Social Media on academic performance of students in University of Lagos. Celestine and Nonyelum (2015) assessed the impact of social media sites on student academic performance in Samuel Adegboyega University. Apuke (2016) examined the influence of social media on academic performance of undergraduate students of Taraba state University, Jalingo, Nigeria. This current study thus deem it imperative to examine the relationship between social network sites (Facebook, Whatsapp, Instagram and Internet search) and academic performance of secondary school students in Oyo Town, Oyo State, Nigeria.

Research Hypotheses

The following research hypotheses were formulated and tested in the study:

1. There is no significant relationship between students' face-book usage and their academic performance.
2. There is no significant relationship between students' whatsapp usage and their academic performance.
3. There is no significant relationship between students' Instagram usage and their academic performance.
4. There is no significant relationship between students' Internet search usage and their academic performance.

METHOD

The research design adopted for this study was correlational design since the study measured the relationship that exists between the independent variable (social network sites usage) and dependent variable (academic performance) of students in the study locale. The population for the study comprised all secondary school students in Oyo town. The target population comprised all students from 12 secondary schools in four Local Government Areas in Oyo town, Oyo state; this was estimated at 1,256 students. Simple random technique was used to select 3 secondary schools from the 4 LGAs that constitute Oyo Town. Simple random technique was also used to select 15 students from each of the 12 selected secondary schools; amounting 180 respondents that participated in this study. Simple random technique was considered for this study because it accorded each respondent equal opportunity to participate in the study.

The main instrument used for this study was a self-designed questionnaire" entitled "Social Network Sites Usage Questionnaire" (SNSUQ). The academic performance on the other hand, was measured using the students' English and Mathematics third term examination results. The questionnaire consisted of two (2) sections, A and B. Section A focused on the demographic data of the respondents such as gender and religion; while section B contained twenty (20) items on social network usage. The respondents were asked to respond to the items using the four point Likert-type rating scales format of: Strongly Agree = 4 points; Agree = 3 points; Disagree = 2 points; and Strongly Disagree = 1 point. Experts in ICT and measurement and evaluation experts validated the instrument; the reliability of the instrument was ascertained using the test re-test reliability method and a coefficient of 0.81 adjudged the instrument reliable for the study.

The data obtained was analyzed using both descriptive and inferential statistics. The descriptive statistics include frequency and percentage for the demographic data section; while the Pearson (r) inferential statistics was used to analyse the hypotheses formulated at .05 level of significance.

RESULTS

Demographic Attributes of Respondents

The respondents' demographic variables are presented using frequency and percentage:



Table 1. Percentage distribution of respondents based on gender

| Gender | Frequency | Percentage (%) |
|--------------|------------|----------------|
| Male | 81 | 45.0 |
| Female | 99 | 55.0 |
| Total | 180 | 100.0 |

Table 1 shows that out of the 180 students who participated in the study, 81 (45.0%) were males; while 99 (55.0%) were females. Thus, there were more females in the study than their male counterparts.

Table 2. Percentage distribution of respondents based on religion

| Religion | Frequency | Percentage (%) |
|------------------------------|------------|----------------|
| Christianity | 84 | 46.6 |
| Islam | 93 | 51.6 |
| African Traditional Religion | 3 | 1.8 |
| Total | 180 | 100.0 |

Table 2 shows that, 84 (46.6%) of the respondents were Christians, 92 (51.6%) were Muslims; while 3 representing 5.6% were African Traditional Religion adherents. Hence, there were more Muslims in the study than other religious affiliates.

H₀₁: There is no significant relationship between students’ face-book usage and their academic performance.

Table 3. Pearson’s (r) statistic on relationship between students’ face-book usage and their academic performance

| Variables | n | Mean | Std.Dev. | df | Cal. r | p-value |
|----------------------|-----|-------|----------|-----|--------|---------|
| Face-Book usage | 180 | 20.16 | 8.11 | 178 | -.22* | .003* |
| Academic performance | 180 | 22.12 | 9.01 | | | |

*Sig. at p<.05

Table 3 shows that the calculated r-value of -.22 is statistically significant (at p = .003 < .05); thus, the hypothesis, which stated that there is no significant relationship between students’ face-book usage and their academic performance is rejected. Therefore, there is a negative relationship between students’ face-book usage and their academic performance.

H₀₂: There is no significant relationship between students’ whatsapp usage and their academic performance.

Table 4. Pearson’s (r) statistic on relationship between students’ whatsapp usage and their academic performance

| Variables | n | Mean | Std.Dev. | df | Cal. r | p-value |
|----------------------|-----|-------|----------|-----|--------|---------|
| Whatsapp usage | 180 | 20.66 | 7.96 | 178 | -.19* | .010* |
| Academic performance | 180 | 22.12 | 9.01 | | | |

* Sig. at p < .05

Table 4 shows that the calculated r-value of -.19 is statistically significant (at p = .010 < .05); thus, the hypothesis, which stated that there is no significant relationship between students’ whatsapp usage and their academic performance is rejected. Therefore, there is a negative relationship between students’ whatsapp usage and their academic performance.



H03: There is no significant relationship between students’ Instagram usage and their academic performance.

Table 5. Pearson’s (r) statistic on relationship between students’ instagram usage and their academic performance

| Variables | n | Mean | Std.Dev. | df | Cal. r | p-value |
|----------------------|-----|-------|----------|-----|--------|---------|
| Instagram usage | 180 | 21.03 | 6.99 | 178 | -.20* | .007* |
| Academic performance | 180 | 22.12 | 9.01 | | | |

* Sig. at $p < .05$

Table 5 shows that the calculated r-value of -.20 is statistically significant (at $p = .007 < .05$); thus, the hypothesis, which stated that there is no significant relationship between students’ Instagram usage and their academic performance is rejected. Therefore, there is a negative relationship between students’ Instagram usage and their academic performance.

H04: There is no significant relationship between students’ Internet search and their academic performance.

Table 6: Pearson’s (r) statistic on relationship between students’ internet search and their academic performance

| Variables | n | Mean | Std.Dev. | df | Cal. r | p-value |
|----------------------|-----|-------|----------|-----|--------|---------|
| Internet search | 180 | 22.10 | 9.11 | 178 | -.16* | .031* |
| Academic performance | 180 | 22.12 | 9.01 | | | |

* Sig. at $p < .05$

Table 6 shows that the calculated r-value of -.16 is statistically significant (at $p = .031 < .05$); thus, the hypothesis, which stated that there is no significant relationship between students’ Internet search and their academic performance is rejected. Therefore, there is a negative relationship between students’ Internet search and their academic performance.

DISCUSSION

The finding of this study revealed that there is a significant negative relationship between students’ face-book usage and their academic performance. This means that the higher the usage of face-book among the students, the lower the level of their academic performance and vice-versa. This does not implies that the usage of face-book is the cause of their poor academic performance but perhaps their wrong usage of the social network platform could translate to lower level of academic performance for them. This follows that students’ academic performance depends on whether or not they make use of face-book for better their academic lots or involve in frivolities on the platform. The finding of this study is in tandem with the finding of Feng, Wong, Wong and Hossain (2019) which revealed that a negative relationship occurred in the students’ face-book usage and their academic performance. According to Feng et al. (2019) finding, students with a high-frequency usage of Facebook per day tend to be more distracted in the course of academic tasks. The findings of this current study and the previous research are related perhaps, because they were both conducted among secondary school students whose majority were adolescents with similar behavioural attributes.

The Pearson (r) result also indicated that there is a significant negative relationship between students’ whatsapp usage and their academic performance. This means that an increase in students’ whatsapp usage is associated with lower level of academic performance and vice-versa. Whatsapp usage does not in itself linked to lower academic performance but whether it is positively or negatively utilised. This finding is in contrast with the findings of Al-Hassan, Abdul-Karim, Christian and Iddriss (2017) which revealed that whatsapp usage has significant positive relationship with students’ academic performance. The departure of the finding of this study and the previous study perhaps, is due to difference in locale of the studies and the categories of respondents that participated in the studies.



There is also a significant negative relationship between students' Instagram usage and their academic performance. This implies that an increase in the usage of Instagram social network is associated with a decrease in the students' level of academic performance. On the other hand, the lower the involvement of students in the usage of Instagram, the higher their level of academic performance. This suggests that perhaps, either positive or negative usage of social network can be a determinant of their level of academic performance among the students. This finding disagrees with the finding of Ahmed, Rony, Ashhab and Ahmed (2020) which revealed that Instagram usage has no correlation with the students' academic performance. Factors such as different locale, variation in respondents' attributes and methodologies adopted could have been responsible for the disagreement of this current finding with the previous research.

It was revealed that there is a significant negative relationship between students' Internet search and their academic performance. This means that the higher the students' involvement in Internet search, the lower their academic performance and vice-versa. This suggests that perhaps, the students are not using the Internet browsing to improve their academic prowess but rather browse internet to watch pons and things that will not add to their educational development. The finding of this study concurs with the finding of Feng, Wong, Wong and Hossain (2019) which showed that a significant negative relationship between students' internet search and academic performance. It was stated that the overuse of the Internet social activities has a negative influence on students' academic achievement. Agreement of this finding with the previous study perhaps results from the fact that the respondents that participated in the study were in the same age range.

Conclusion

Based on the findings of this study, it was concluded that social network (Facebook, whatsapp, Instagram and Internet search) usage are statistically significantly and negatively related to academic performance of secondary school students. Thus, students' level of academic performance could possibly be linked to their level of involvement in the usage of social network.

Recommendations

In line with the findings of this study, it was recommended that:

1. Education stakeholders such as parents, school authority, counsellors, government among others, collaborate in monitoring and regulating students' level of involvement in social network usage so that they can use it positively to enhance their academic performance.
2. Ministry of education, the school and counsellors should design programmes (such as time management and social skills training) that will on regular basis orientate students on positive use of social network to ease their educational tasks and improve their academic performance.

Ethics

I declare that I collected data in accordance with ethical rules during the research process and acted in accordance with all ethical rules.

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THE RELATIONSHIP BETWEEN SELF LEADERSHIP AND TEACHERS' PSYCHOLOGICAL WELL-BEING

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Abstract

The aim of the study is to examine the relationship between self-leadership and teachers' psychological well-being. Relational screening model was used in the study. The universe of the research is 2465 teachers working at all levels of public schools in Beykoz district of Istanbul. The sample of the study consists of 337 teachers selected from schools in all levels in Beykoz district of Istanbul, using the simple random method. Within the framework of this research model, according to teachers' perceptions; the relationship between teachers' self-leadership characteristics and their psychological well-being was investigated. Data results of "Self Leadership Scale" and "Psychological Well-Being Scale" were analyzed in IBM SPSS 22.0 program. It was found that the teachers showed the most results in the sub-dimension of "self-observation" and the least in the "self-talk" sub-dimension. In addition, a significant and positive effect was determined according to the results of the regression analysis in the sub-dimensions of goal setting, self-observation, and imagining successful performance. It was determined that there was a significant negative effect in the self-punishment sub-dimension.

Keywords: Leadership, self-leadership, psychological well-being.

INTRODUCTION

There have been various influences that have mobilized human societies throughout history (Kılıç Özkaynar, 2017). Many influences such as religion, culture, leader, geographical conditions, meteorological conditions, ecological conditions (Diamond, 2016) have had an impact on human societies and have caused them to progress and sometimes to disappear (Akay Ertürk, 2010). Although it changes according to the conditions, the human factor has always come to the fore. For these reasons, it would be a correct point of view to think that the most important influence is the leaders who will lead the groups and enable them to take action (Sözen & Şar, 2015).

Leaders have also differentiated from each other in terms of management styles. Among the reasons for this differentiation are the industrial revolution, the Second World War, and the prominence of human rights in our recent history (Demiryumruk Dikici, 2020). Today, it is accepted that human rights are prioritized and every human being is valuable. With this research, "Self-Leadership", which is accepted as one of the contemporary leadership types in the literature, will be discussed.

Self-leadership was developed in 1991 by Manz and Sims Jr. brought to the literature. The idea they came up with; that leadership should come mainly from within the person, not from outside. In the case that this does not occur, the external leadership ignites a spark and each person supports this spark within him and has the will to govern himself (Manz & Sims Jr., 1991). This is an action that shows that the leader's leadership characteristics are developed.



The mental world of each leader is different. There are many different elements that feed this mental world. As mentioned before, religion, culture, geographical conditions, meteorological conditions, ecological conditions and even genetic factors are among these factors. With the blending of all these, the psychological state of the leader emerges. If we need to define psychology here, we can express it as “analyzing the parts that make up the consciousness (Bakırtaş, 2020).” Leaders who have different worlds of consciousness and whose management styles are different from each other will result in different results due to the management approach they adopt.

The concept of psychological well-being was first used in the literature by Ryff (1989a). Ryff states that it is not enough to explain psychological well-being with a single concept. There are six sub-dimensions of psychological well-being. These are expressed as maintaining a meaningful life purpose, controlling the environment, establishing positive relationships with individuals, living autonomously, ensuring Personal Growth and self-acceptance (Keyes, Shmotkin, & Ryff, 2002). In life purpose, a person searches for the meaning of life challenges and efforts. Also, being productive, creative and emotional helps to feel that life is important and meaningful. The ability to shape one's environment according to one's needs and wishes is expressed as environmental control. Developing reliable and warm relationships with individuals is considered as positive relations with individuals. The ability to maintain one's individuality within the wider social environment is explained as autonomy. Efforts to develop one's ability and capacity are expressed as Personal Growth. Self-acceptance refers to positive evaluations and good feelings about oneself (Ryff, 1989a, 1989b).

From a general point of view, a person has a potential and it is accepted that if the person reveals that potential, his/her soul will be good. It is emphasized that the person will be happy in this way. Self-leadership also talks about the inner potentials of individuals. The emergence of this potential will cause teachers to be happy and increase their psychological well-being (Yılmaz, 2016). This research was chosen because of the common perspective of the concepts of self-leadership and psychological well-being.

Purpose of the Research

The aim of this study; The aim of this study is to investigate the relationship between the self-leadership levels and psychological well-being levels of teachers working in kindergarten, primary, secondary and secondary education levels according to their perceptions. In the study, self-leadership characteristics and psychological well-being according to teacher perceptions; examining whether it changes in terms of gender, age, education, type of school and duty is also included in the research, and it is also aimed to reveal the results and suggestions with the data obtained from the research.

METHOD

In this study, which examines the relationship between self-leadership behaviors and psychological well-being according to the perceptions of teachers working in the public sector at pre-school, primary (primary and secondary school) and high school levels, the relational survey model, one of the quantitative research designs, was preferred. The relational screening model is one of the research models that aims to find the state or level of coexistence between two or more variables in which the research is conducted (Karasar, 2020). The independent variable of the research is "teachers' self-leadership behaviors" and the dependent variable is "teachers' psychological well-being".

Universe and Sample

The universe of the study includes all teachers working in public schools in the Beykoz district of Istanbul in the 2020-2021 academic year. According to the information obtained from the Beykoz Directorate of National Education, the number of teachers is 2465 (Beykoz MEM, 2022).

The sample of the study was determined by the random sample selection method. The sample was formed from teachers working in 99 public schools in Beykoz district and reached by random sample selection. In this context, people were reached online and 337 people returned. The sample consists of 337 people.

**Table 1.** Number of public schools in Beykoz district

| Sequence No. | Institution Type | Number of Schools (Universe) |
|--------------|---------------------------|------------------------------|
| 1 | Pre-school | 5 |
| 2 | Primary school | 38 |
| 3 | Middle School | 35 |
| 4 | High school | 16 |
| 5 | Special Education Schools | 5 |
| | Total | 99 |

Data Collection and Analysis

Data were collected online. Google form service was used. The created form was shared in the communication groups of each school. In cases where the school administration could not be reached, it was directly communicated to the teachers. In this way, a total of 337 responses were received. It is stated on the form that the confidentiality of the data will be protected and it is based on volunteerism.

The results collected in the online environment within the scope of the study were transferred to the Microsoft Excel Program, after the necessary controls were made, numerical transformations were carried out and transferred to the IBM SPSS 22.0 version. All statistical analyzes in the study were carried out with SPSS 22.0.

In the research findings section, the demographic and descriptive findings of the participants are included in the first part. In the second part, there are frequency distributions, means and standard deviation results of the scale questions. In the third part, there are descriptive statistics and normal distribution test statistics for the variable values obtained from the mean of the items belonging to the scale and dimensions, after reversing the reverse questions from the scale and dimension items. According to the normal distribution test statistics of the variables, although it was seen that the variables were not normally distributed, it was seen that the skewness coefficients of the variables were not excessively skewed from the normal ($|S| < 1.5$), since it was known that the normal distribution assumption was not faulty, the variables were assumed to be normally distributed (Hair, 2013). In the fourth part of the findings section, parametric hypothesis tests are applied for the research problems that need to be answered by means of hypothesis tests with variables that are distributed close to normal.

Regression analyzes were used to examine the relationships between scale and dimension values, which are continuous variables. During the regression analysis, the relationships between the explanatory variables were examined by correlation analysis, and the problem of nearly complete multicollinearity that could arise if the variables with high degree of correlation were defined as explanatory variables in the same regression model were avoided.

The independent sample t-test was used for the research problems that required testing the differences between two groups in terms of scale and dimension values, and the ANOVA Test was used to examine the differences between more than two groups.

The independent sample t-test was used to test the hypothesis (differences by gender) based on the detection of the difference between the two groups. The null and alternative hypotheses for the independent sample t-test are as follows.

H0: $\mu_1 = \mu_2$ (There is no statistically significant difference between the means of the two groups)

H1: $\mu_1 \neq \mu_2$ (There is a statistical difference between the means of the two groups)

First of all, it is necessary to determine the variance homogeneity of the test. For this purpose, Levene F variance homogeneity test is performed for the independent sample t-test and it will be decided which test statistic will be taken into account according to the results. According to the Levene F test results, if the significance value is $\text{sig.} > .05$, the t-test statistic calculated for the homogeneity of the variance,



and the variance in the opposite case. The t-test results calculated for the heterogeneity condition will be used.

When the t-test statistic found for cases where the variance is homogeneous (t) is significant (Sig.) is compared with the chosen significance status (5%), H0 hypothesis is rejected and H1 hypothesis is accepted when Sig. > .05, whereas H0 hypothesis is accepted in the opposite case. is done. In cases where a statistically significant difference is detected as a result of the analysis, it is decided which group has the higher level as a result of the comparison of the group averages (Karagöz, 2016, p.383-391)

Variance (ANOVA) tests were used during the analysis of the hypothesis based on the difference between two or more groups (differences by grade level). The null and alternative hypotheses for the ANOVA test are presented below.

H0: $\mu_1 = \mu_2 = \mu_3 = \mu_m$ (There is no statistically significant difference between m group averages.)

H1: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_m$ (at least one of the m group averages is statistically significantly different from the others.)

When compared with the chosen significance level (5%) with significance value (Sig.) in the ANOVA test statistic (F) calculated in a similar way with the independent sample t-test, in cases where Sig. > .05, the H0 hypothesis is rejected, the H1 hypothesis is accepted, otherwise the H0 hypothesis is accepted. (Karagöz, 2016, p.419)

In case of ANOVA test, the number of members of the groups to be compared should be higher than 30. For this reason, it was aimed to keep test reliability high by examining the number of members of all groups (Kalaycı, 2006, p.133).

RESULTS

The sub-problem of the research is "According to the teachers' views, is there a significant relationship between teachers' self-leadership characteristics and their psychological well-being?" specified as. In the solution of this sub-problem, the correlation between the self-leadership scale and psychological well-being scale scores was calculated.

Calculation is between self-leadership sub-dimensions and psychological well-being sub-dimensions.

Table 2. Correlation between goal setting sub-dimension and psychological well-being sub-dimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|--------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Goal Setting | .343** | .391** | .255** | .262** | .261** | .250** |
| | .000 | .000 | .000 | .000 | .000 | .000 |

** (1%), * (5%) denotes statistical significance at the level of significance.

.343 (p<.01) between the goal setting dimension score and the self-acceptance dimension score, .391 (p<.01) between the goal setting dimension score and the Personal Growth dimension score, .255 (p<.01) between the goal setting dimension score and the Purpose in Life dimension score, .262 (p<.01) between goal setting dimension score and positive relationships with others dimension score, .261 (p<.01) between goal setting dimension score and environmental dominance dimension score .250 between goal setting dimension score and autonomy dimension score (p<.01) correlations were calculated. When examined on the basis of all dimensions, positive correlations are observed between the goal setting dimension and the dimensions of the psychological well-being scale.



Table 3. Correlation between self-reward sub-dimension and psychological well-being sub-dimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|-------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Self-Reward | .119** | .256** | .036 | .072 | .099 | .096 |
| | .000 | .000 | .515 | .188 | .069 | .080 |

** (1%), *(5%) denotes statistical significance at the level of significance.

Correlation coefficient of .119 ($p < .01$) between the self-reward dimension score and the self-acceptance dimension score and .256 ($p < .01$) between the Personal Growth dimension score was calculated. Other calculated correlation coefficients are meaningless at 5% significance level ($p > .05$). When the correlation coefficients are examined together, it is seen that there is a positive correlation between the self-reward dimension and only the Personal Growth dimension.

Table 2. Correlation between self punishment and psychological well-being subdimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|-----------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Self-Punishment | -.107 | .022 | .060 | -.062 | -.154* | -.085 |
| | .059 | .691 | .273 | .257 | .005 | .120 |

** (1%), *(5%) denotes statistical significance at the level of significance.

Correlation coefficient of -.154 ($p < .01$) was calculated between the self-punishment dimension score and the Environmental Mastery dimension score. Other calculated correlation coefficients are meaningless at 5% significance level. ($p > .05$). When the correlation coefficients are examined together, it is seen that there is a negative correlation between the self-punishment dimension and only the environmental dominance dimension.

Table 5. Correlation between self-observation sub-dimension and psychological well-being sub-dimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|------------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Self-Observation | .177** | .200** | .242** | .081 | .031 | .139* |
| | .000 | .000 | .000 | .135 | .574 | .011 |

** (1%), *(5%) denotes statistical significance at the level of significance.

.177 ($p < .01$) between the self-observation dimension score and the self-acceptance dimension score, .200 ($p < .01$) between the self-observation dimension score and the Personal Growth dimension score, .242 ($p < .01$) between the self-observation dimension score and the Purpose in Life dimension score, .139 ($p < .05$) correlations were calculated between the self-observation dimension score and the autonomy dimension score. When examined on the basis of all dimensions, positive correlations are observed between the self-observation dimension and the psychological well-being scale, positive relations with others, and other dimensions except environmental dominance.

Table 3. Correlation between reminders identifying sub-dimension and psychological well-being sub-dimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|-------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Self-cueing | .183** | .133* | .056 | .094 | .052 | .071 |
| | .001 | .014 | .305 | .086 | .338 | .192 |

** (1%), *(5%) denotes statistical significance at the level of significance.



Correlation of .83 ($p < .01$) between the Self-cueing dimension score and the self-acceptance dimension score, and .133 ($p < .05$) between the reminders setting dimension score and the Personal Growth dimension score was calculated. It is seen that the other calculated correlation coefficients are statistically insignificant.

Table 7. Correlation between focusing reflection on natural rewards and psychological well-being subdimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|-------------------------------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Focusing thought on natural rewards | .087 | .079 | -.011 | .078 | .176** | .120* |
| | .152 | .145 | .837 | .153 | .001 | .028 |

** (1%), * (5%) denotes statistical significance at the level of significance.

Correlation of .176 ($p < .01$) between focusing thoughts on natural rewards and environmental dominance dimension score, and .120 ($p < .05$) between focusing thoughts on natural rewards and autonomy dimension score was calculated. It is seen that the other calculated correlation coefficients are statistically insignificant.

Table 8. Correlation between imagination of successful performance and psychological well-being subdimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|------------------------------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Visualizing successful performance | .229** | .234** | .091 | .210** | .215* | .230** |
| | .000 | .000 | .096 | .000 | .000 | .000 |

** (1%), * (5%) denotes statistical significance at the level of significance.

Correlations were calculated .229 ($p < .01$) between the imagining successful performance dimension score and the self-acceptance dimension score, .234 ($p < .01$) between the imagining successful performance dimension score and the Personal Growth dimension score, the imagining successful performance dimension score and the positive relations with others dimension score between .210 ($p < .01$) and between imagining successful performance and environmental dominance dimension .215 ($p < .05$) and .230 ($p < .01$) between imagining successful performance and autonomy dimension score. When examined on the basis of all dimensions, positive correlations are observed between all dimensions except for the dimension of dreaming of successful performance and the dimension of the psychological well-being scale, the Purpose in Life.

Table 9. Correlation between self-talk and psychological well-being subdimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|-----------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------|
| Self-Talk | .013 | .146** | .040 | -.025 | -.044 | -.040 |
| | .806 | .007 | .462 | .641 | .422 | .940 |

** (1%), * (5%) denotes statistical significance at the level of significance.

Correlation coefficient of .146 ($p < .01$) was calculated between the self-talk dimension score and the Personal Growth dimension score. All of the other calculated correlation coefficients are not statistically significant.



Table 10. Correlation between evaluation of thoughts/ideas and psychological well-being subdimensions

| | Self-Acceptance | Personal Growth | Purpose in Life | Positive Relationships with Others | Environmental Mastery | Autonomy |
|------------------------------------|-----------------|-----------------|-----------------|------------------------------------|-----------------------|----------------|
| Evaluating beliefs and assumptions | .217** .000 | .173** .001 | .112* .041 | .153** .005 | .119* .029 | .194** .000 |

** (1%), * (5%) denotes statistical significance at the level of significance.

The Evaluation of Thoughts/Ideas subscale score is .217 (p<.01) for self-acceptance, .173 (p<.01) for Personal Growth, .112 (p<.05) for purpose in life, .153 for positive relationships with others. (p<.01), a correlation coefficient of .119 (p<.05) with the environmental dominance dimension score and .194 (p<.001) with the autonomy dimension score were calculated.

Table 11. Regression analysis between teachers' self-leadership variable and psychological well-being

| Variable | B | SH | B | t | p | Double R | partial R |
|------------|---------|----------|--------|--------|------|----------|-----------|
| Constant | 2,672 | .203 | | 13,135 | .000 | | |
| Well Being | .270 | .054 | .264 | 5,000 | .000 | .264 | .264 |
| R=0.264 | R2=.069 | F=25.004 | P=.000 | | | | |

It is seen that the psychological well-being scale can explain about 6.9% of the variance of the self-leadership scale. When the coefficients are examined, it is seen that the psychological well-being scale has a significant predictor on the self-leadership scale at the 5% significance level.

Correlation table, which was created to determine the correlation relations between the variables before the regression analysis, in which the psychological well-being scale was defined as the dependent (explained) variable and the self-leadership scale sub-dimensions as the independent (explanatory) variable, is as in tables 12, 13 and 14. The regression analysis findings, in which the Behavior-Oriented Strategies dimensions were defined as the dependent variable of the explanatory psychological well-being scale, are given in Table 12.

Table 12. Regression Model 1 Prediction Results

| Variable | not standardized | | standardized | t | Sig. | VIF |
|-----------------|------------------|------------------|--------------|---------|------|-------|
| | β | SH ^{NW} | β | | | |
| Constant Term | 2.297 | .197 | | 12,253* | .000 | |
| Goal setting | .335 | .051 | .426 | 6.552* | .000 | 1,586 |
| Self-reward | .022 | .022 | .057 | 1,030 | .304 | 1,179 |
| Self-punishment | -.191 | .034 | -.344 | -5.552* | .000 | 1.683 |
| Self-monitoring | .194 | .049 | .246 | 3,947* | .000 | 1.998 |
| Self-cueing | -.010 | .023 | -.027 | -.447 | .655 | 1,287 |

Diagnostic Statistics

| | | | | |
|------------------------------------|----------------------------|--------------------------------|-----------|-----------------------|
| F Test | | F _(5, 331) =26,912* | | Sig. =.000 |
| Determination | | R ² = .289 | | DR ² =.278 |
| Breusch Pagan Variance Test | | F _(5, 331) =2.376* | | Sig. =.039 |
| Durbin Watson Autocorrelation Test | | DW=1.867 | | |
| Error Terms | $\bar{\epsilon} \approx 0$ | KS ₍₃₃₇₎ =.050 | Sig.=.307 | S=-.138 K=-.133 |

*(%5) signifies the rejection of the indifference hypothesis (β=0), H0 at significance level, SH: Standard error, NW: Robust Standard Error, F: F Test Statistic, (Includes Test Freedoms in Brackets (SD1, SD2))

When the diagnostic statistics are examined in the Table 12, it is observed that there is a statistically significant problem of varying variance at the 5% significance level in the model according to the Breusch Pagan Test of Variance (F_(5, 331)=2.376, Sig. < .05). In this case, the model needs to be estimated with the variable variance resistant (Robust) standard errors. On the other hand, it is seen that the Durbin Watson test statistic is close to the value of 2. Therefore, it can be said that there is no autocorrelation



problem in the model. It is seen that the error terms are distributed close to normal with a mean close to zero ($\bar{\epsilon} \approx 0$, $KS_{(337)}=.050$, Sig. $> .05$) It was observed that all variance inflation factor values were smaller than 10. In this case, it can be stated that there is no problem of multicollinearity in the model ($VIF < 10$)

Looking at the results of the model F test estimated with the resistant standard errors, it is seen that the model is a significant model with 5% significance level ($F_{(5, 331)}=26.912$ Sig. $< .05$) On the other hand, it was observed that the dependent variables could explain approximately 27.6% of the changes in the dependent variable ($DR^2=.276$).

When the coefficients estimated in the model are examined;

It was observed that the goal setting variable had a positive and significant effect on psychological well-being at the 5% significance level ($\beta=.426$, Sig. $< .05$) In other words, it can be said that increasing the level of goal setting of teachers causes an increase in psychological well-being levels.

It was observed that the variable of self-reward did not have a significant effect on psychological well-being at the 5% significance level ($\beta=.057$, Sig. $> .05$)

It was found that the variable of self-punishment had a negative and significant effect on psychological well-being at the 5% significance level ($\beta=-.344$ Sig. $< .05$) In other words, it can be said that increasing the level of self-punishment of teachers causes a decrease in psychological well-being levels.

It was observed that the variable of self-observation had a positive and significant effect on psychological well-being at the 5% significance level ($\beta=.246$, Sig. $< .05$) In other words, it can be said that the increase in teachers' self-observation level causes an increase in their psychological well-being.

It is seen that the variable of Self-cueing does not have a significant effect on psychological well-being at the 5% significance level ($\beta=-.016$, Sig. $> .05$)

The results of the regression analysis, in which the Natural Reward Strategies variable was defined as the dependent variable of the explanatory psychological well-being scale, are as in Table 13.

Table 4. Regression Model 2 Estimation Findings

| Variable | not standardized | | standardized | t | Sig. |
|------------------------------------|----------------------------|--------------------|--------------|------------|----------------|
| | β | SH | β | | |
| Constant Term | 3,484 | .180 | | 19.310*** | .000 |
| Natural Reward Strategies | .101 | .041 | .133 | 2,463* | .014 |
| Diagnostic Statistics | | | | | |
| F Test | $F_{(1, 335)}=6.065^*$ | | | | Sig .=.014 |
| Determination | $R^2 = .018$ | | | | DR2 = .015 |
| Breusch Pagan Test of Variance | $F_{(1, 335)}=.091$ | | | | Sig .=.763 |
| Durbin Watson Autocorrelation Test | DW=1.948 | | | | |
| Error Terms | $\bar{\epsilon} \approx 0$ | $KS_{(337)}=0.054$ | | Sig .=.120 | S=-.207 K=.519 |

*(%5) at significance level, H0 denotes the rejection of the indifference hypothesis ($\beta=0$), SH: Standard error, F: F Test Statistic, (Includes Test Freedoms in Parentheses (SD1, SD2))

When the table was analyzed, it was observed that there was no problem of varying variance in the model according to the Breusch Pagan Test of Variance ($F_{(1, 335)}=.091$, Sig. $> .05$) and there was no problem of autocorrelation in the model according to the Durbin Watson Autocorrelation Test . Error terms are distributed close to normal with a mean of zero ($\bar{\epsilon} \approx 0$, $KS_{(337)}=.054$, Sig. $> .05$).

When the estimation model was analyzed, it was seen that the model was a significant model at the 5% significance level ($F_{(1, 335)}=6.065$, Sig. $> .05$). It was observed that the variable of natural reward strategies had a positive and significant effect on psychological well-being at the 5% significance level ($\beta=.113$, Sig. $< .05$)



The results of the regression analysis, in which the independent psychological well-being variable of the Constructive Thinking Model Strategies dimensions was defined as the dependent variable, is as given in Table 14.

Table 5. Regression Model 3 Estimation Findings

| Variable | not standardized | | standardized | t | Sig. | VIF |
|------------------------------------|--------------------------------|---------------------------|--------------|-----------------------|--------|-------|
| | β | SH | β | | | |
| Constant Term | 2,672 | .171 | | 15,581* | .000 | |
| Visualizing successful performance | .171 | .035 | .274 | 4,927* | .000 | 1,183 |
| Self-Talk | -.037 | .022 | -.092 | -1.688 | .092 | 1.130 |
| Evaluating beliefs and assumptions | .140 | .043 | .182 | 3.230* | .001 | 1,215 |
| Diagnostic Statistics | | | | | | |
| F Test | F _(3, 333) =16.557* | | | Sig. =.000 | | |
| Determination | R ² = .130 | | | DR ² =.122 | | |
| Breusch Pagan Test of Variance | F _(3, 333) =.551 | | | Sig.=.647 | | |
| Durbin Watson Autocorrelation Test | DW=1.925 | | | | | |
| Error Terms | $\bar{\epsilon} \approx 0$ | KS ₍₃₃₇₎ =.052 | Sig.=.259 | S=-.220 | K=.262 | |

*(%5) signifies the rejection of the indifference hypothesis ($\beta=0$), H0 at significance level, SH: Standard error, NW: Robust Standard Error, F: F Test Statistic, (Includes Test Freedoms in Brackets (SD1, SD2)

When the diagnostic statistics are examined in the table, it is seen that there is no statistically significant problem of varying variance in the model at the 5% significance level, according to the Breusch Pagan Test of Variance (F_(3, 333)=.551, Sig. >.05). It is seen that Durbin Watson test statistic is close to the value of 2. Therefore, it can be said that there is no autocorrelation problem in the model. It is seen that the error terms are distributed close to normal with an average close to zero ($\bar{\epsilon} \approx 0$, KS₍₃₃₇₎=.052, Sig. >.05) It is seen that all variance inflation factor values are less than 10. In this case, the problem of all-in-one multicollinearity was not observed in the model. (VIF<10)

When the results of the F test are analyzed, it is seen that the model is a significant model with 5% significance level (F_(3, 333)=16.557, Sig. <.05) The model determination coefficient shows that the dependent variables can explain approximately 12% of the changes in the dependent variable (DR²=.122).

When the coefficients estimated in the model are examined;

It is seen that the variable of imagining successful performance has a significant and positive effect on psychological well-being at the 5% significance level. (β =.274 Sig. <.05) In other words, it can be said that the increase in teachers' imagination of successful performance leads to an increase in psychological well-being levels.

It is seen that the self-talk variable does not have a significant effect on psychological well-being at the 5% significance level (β =-.092, Sig. >.05)

Evaluating Thoughts and Ideas has a significant and positive effect on psychological well-being at the 5% significance level (β =.182, Sig. <.05) In other words, it can be said that the increase in the teachers' level of Evaluation of Thoughts/Ideas causes an increase in their psychological well-being.

DISCUSSION

In line with the answers given by the teachers who participated in the research, teachers' self-leadership characteristics are at a high level. According to the results of the self-leadership scale, it can be said that the teachers' self-leadership characteristics show the most goal setting and the least self-rewarding feature.

In Uğurluoğlu's (2010) study titled "Self-Leadership Strategy", it was seen that behavior-oriented strategies were used at a high level as \bar{x} = 3.89, natural reward strategies \bar{x} = 4.22, and constructive thinking model strategies as \bar{x} = 3.88. This study was carried out with the participation of 145 people.



In the master's thesis prepared by Akkuş (2018) with the participation of 309 teachers, there are findings that teachers' self-leadership perceptions are high, the task type factor does not make a significant difference, and there is a significant difference between the first and last periods of the professional seniority variable. These findings are consistent with this study. In the study titled "The Role of Positive Psychological Capital on Self-Leadership Skills" conducted by Sarı (2021) with 336 participants, in all sub-dimensions according to gender in the self-leadership scale; speaking according to age, rewarding, punishing, observing sub-dimensions; in the sub-dimensions of reminder, natural reward, reward, speaking; significant difference in successful performance sub-dimension according to income status has found. There are points of overlap and divergence with this study.

As a result of the psychological well-being scale of the teachers participating in the research, it can be said that in line with the answers they gave, they showed the feature of "individual development" the most and the feature of "autonomy" the least. Studies on psychological well-being are increasing day by day. In this context, Cemaloğlu and Çoban (2018) stated that there are more relationships with leadership behaviors in other dimensions (individual development, environmental dominance, positive relations with others, purpose of life, self-acceptance) except autonomy.

At the point of comparing the results of the psychological well-being scale with other studies, there was a significant difference in this study according to the variables of gender, education level, professional seniority and school type, while Parvazi (2021) stated that there was a significant difference according to the age variable in the master's thesis study conducted with 328 students. In addition, Bayraktar (2021) found a significant difference in the variables of gender and education level in the master's thesis with 500 teachers. Education level shows similar results in this study. In the study titled "Examination of the Relationship between University Students' Time Perspectives and Psychological Well-Being and Self-efficacy" conducted by Türkdoğan (2021), with the participation of 421 university students, a significant difference was observed in psychological well-being scores only according to the variables of gender and school type.

In this study, a significant difference was found according to the school type variable. In the thesis study conducted by Kepenek (2021) with 497 young adults, while psychological well-being levels differed significantly according to educational status, income status, employment status and marital status, no significant difference was found according to gender. The fact that the gender variable did not show a significant difference in other dimensions except for one dimension and the education level variable showed a significant difference showed similar results with this study. In Erözyürek's (2019) study, it was seen that the psychological well-being level of female teachers was higher than male teachers, and there were no significant differences in terms of marital status, professional seniority, educational status and school type variables. In addition, the psychological well-being of employees of 6 years or more was significantly different. According to these results, while there is no significant difference according to the psychological well-being level of teachers, age and job type variables; A significant difference was observed according to gender, education level, professional seniority and school type variables.

Conclusion and Recommendations

- A positive and low level correlation was obtained between the goal setting sub-dimension of self-leadership and all sub-dimensions of psychological well-being.
- Self-reward and self-acceptance and self-reward and Personal Growth were positively and low-correlated in the sub-dimensions.
- A negative and low level correlation was obtained in the sub-dimensions of self-punishment and environmental dominance.
- A positive and low level correlation was found between the sub-dimension of self-observation and the sub-dimensions of self-acceptance, Personal Growth, purpose in life and autonomy.
- Correlation was found between the sub-dimension of Self-cueing and the sub-dimensions of self-acceptance and Personal Growth.



- A positive and weak correlation was found between the sub-dimension of focusing thought on natural rewards and the sub-dimension of environmental dominance.
- Correlation was found in all sub-dimensions except for the sub-dimension of imagining successful performance and the Purpose in Life.
- A positive and weak correlation was found between the self-talk sub-dimension and the Personal Growth sub-dimension.
- A positive and weak correlation was found between Evaluation of Thoughts/Ideas and all sub-dimensions of psychological well-being.

Self-leadership has a common aspect at the level of .289 between the title of behavior-oriented strategies and psychological well-being. In this case, it can be stated that 28.9% of the total variance regarding behavior-focused strategies is explained by behavior-focused strategies. There is a common aspect of self-leadership at the level of .018 between the title of natural reward strategies and psychological well-being. In this case, it can be stated that 1.8% of the total variance regarding natural reward strategies is explained by natural reward strategies. There is a .13 level commonality between self-leadership's constructive thinking model strategies and psychological well-being. In this case, it can be stated that 13% of the total variance regarding the constructive thinking model strategies is explained.

Since the psychological well-being levels of postgraduate teachers are found to be higher, other teachers should also be encouraged to postgraduate education.

Ethics and Conflict of Interest

I declare and confirm that we have acted in accordance with ethical rules throughout the entire research and that there is no conflict of interest between authors.

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POSITIVE PSYCHOTHERAPY PERSPECTIVE ON SUICIDE: INVESTIGATING SUICIDAL THOUGHTS AND SUICIDE PROBABILITY

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Abstract

This study aims to investigate Positive Psychotherapy (PPT) perspective on Suicide. Are there significant differences between PPT's core structures of adults with or without suicidal thoughts? Are there significant relationships between suicidal probability and PPT structures of adults with suicidal thoughts? 253 volunteers participated in the study. WIPPF inventory and Suicide Probability Scale were used. We conducted Independent T test and linear multiple regression analysis on SPSS. Results showed PPT structures and suicide ideation, and probability are related on various levels and sub dimensions. These core structures differ between adults with or without suicidal thoughts. PPT structures predicted suicide probability for adults with suicidal thoughts. We elaborated on results based on literature and provided some suggestions.

Keywords: Suicide, positive psychotherapy, suicidal thoughts, suicide probability.

INTRODUCTION

Suicide is a concern all around the globe. Nearly 800.000 people die due to suicide around the world, every year (WHO, 2018). It is the second most common cause of death among ages of 15 to 29 (WHO, 2016). Authorities points out that the number of people who attempted to suicide might be 20 times more than the people who died because of the act (WHO, 2016). While there are studies and projects of prevention of suicide ideation and attempts in literature, the topic continues to be a severe problem. This points out to the fact that innovative studies are needed on the subject. Therefore, this study aims to investigate a new approach on suicidal ideation: Positive Psychotherapy perspective on suicide.

While looking into suicide, there are two definitions to run across: Suicide attempt and suicidal thoughts (or ideation). Suicide attempt is injuring oneself in a deadly way with or without the result of the death. As stated above it's much more common to attempt suicide than realizing it. According to a meta-analysis study, people who has previous suicide attempts are up to 40 times more likely to commit suicide than those who don't (Harris & Barraclough, 1997). This makes people with previous suicide attempts a risk group compared to the general population. On the other hand, suicidal thoughts are even more often seen than attempts. The number of adolescents who have suicidal thoughts from time to time is 6-7 times more than ones with attempts (Beautrais, 2001). Also, very recent data from Omary's (2021) research shows that not only those with psychopathology (major depression episodes) are in danger of suicidal ideation and attempts. Suicide prevention interventions should be on general population scale, helping all individuals independent from the presence of psychological disorders.

With the concern of suicide in society above being said, there are many studies on preventing suicide in academic literature. Mann et al (2005) searched through it to investigate the different ways used in studies to prevent suicide between 1996 and 2005 and found about 17. There is usage of antidepressants (Cheung et al., 2006; Isacsson et al., 1994; Wohlfarth et al., 2006), screening in primary care (LeFevre, 2014; O'connor et al., 2013a; 2013b), follow-up care (Luxton et al., 2013), curriculum programs (Aseltine & DeMartino, 2004; Spirito et al., 1988), public education programs (May et al., 2005) and more. And nevertheless, psychotherapy is another way.

Psychotherapy has various approaches to help people to maintain their mental health. Many approaches have their own treatment models, programs, and techniques about suicidal attempts/thoughts. Cognitive Behavioral Therapy is one of them which has a 10-session treatment model for preventing repeating suicide attempt in adults (Brown et al., 2005), a 10-session cognitive intervention for suicidal adolescents and young adults (Henriques et al., 2003) another 12 session model for adolescents (Stanley et al., 2009). Some other approaches for suicide are Interpersonal Psychotherapy (Heisel et al., 2015), counseling (Paulson and Worth, 2002) and Positive Psychotherapy (PPT).

Positive Psychotherapy

Positive Psychotherapy (PPT) is a humanistic and transcultural psychodynamic therapy (Peseschkian, 1997; Peseschkian & Tritt, 1998). It has multiple subjects such as well-being, subjective well-being, depression, hope, forgiveness, happiness, capacity development and more (Eryilmaz, 2017; Peseschkian, 1997). To outline the core structures of PPT and understand how it approaches different dimensions of one's mental health, four fundamental concepts can be put under scope. These concepts are primary capabilities, secondary capabilities, balance model and model dimensions (Eryilmaz, 2020).

The primary-secondary capabilities are PPT structures which are based on the two basic capacities of human beings: Love and perception/know (Peseschkian, 2014). All individuals considered to be born with the capacities of love and perception/know. Capacities of love and perception/know form primary and secondary capabilities. These capabilities consist of one's cognitive, emotional, and behavioral patterns (Eryilmaz, 2020). Primary capabilities are love, patience, time, sexuality, contact, hope, trust, and faith. All of them emerged from the capacity of love. Secondary capabilities are orderliness, cleanliness, punctuality, honesty, courtesy, achievement, reliability, obedience, loyalty, thrift, and justice. All of them emerged from the capacity of perception/know. These capabilities become a part of the personality and they are regarded as linked with each other. According to PPT, the lack or extreme usage of capabilities is the cause of losing the balance of one's physical and mental health. (Eryilmaz, 2020; Peseschkian, 1997; Peseschkian & Walker, 1987).

Balance model is another core concept in PPT. As other theories and models discourse on optimal functioning and the basic needs of human's and how they satisfy them; PPT also puts emphasis on these matter with its balance model concept (Eryilmaz, 2020; Peseschkian & Tritt, 1998). Balance model consists of 4 domains: body, achievement, fantasy/spirituality, and contact. The concept is that every person experiences some level of conflicts in their daily lives. When a conflict occurs, people make preferences for a solution to deal with the conflict. The solutions are linked with the 4 domains stated above (Dobiala & Winkler, 2016; Eryilmaz, 2020; Peseschkian & Tritt, 1998). When body domain is used for conflict solving, the relationship between psychology and psychosomatic perception and their body image should be investigated. Why does one react with their stomach or heart when facing conflict? When the achievement/mind domain is used, people try to solve the conflict via focusing on working or running away from studying. When using contact, people might isolate themselves from their environment or try to get support from people around them. Finally, with the usage of fantasy/spirituality domain people try to solve the conflict by using their imagination, fantasies, dreams, or intuitions (Cope, 2016; Eryilmaz, 2020; Peseschkian, 2014). While facing a conflict some may prefer to choose a solution of body, or some may prefer fantasy more than other



domains. By doing so people try to satisfy their needs and achieve to the level of an optimal functioning (Eryılmaz, 2020). PPT emphasizes on balance between these dimensions and investigates the extreme usage of domains during therapy process for mental disorders (Cope, 2014; Eryılmaz, 2020).

Moving on to another core concept of PPT, model dimensions are important for developing an individual's basic capacity of love. Model dimensions consists of the relationships emerged from the individual, their parents, parents' social environment and parents' religion (Dobiala & Winkler, 2016). When people are born into their families, the primary source of information and behavior is their parents. Parents teach their children how to live in the world and society, also they become their role models. Therefore, an individual's perceptions about themselves, relationships between couples, relationships with others (society) and future/religion/meaning of life are influenced by their parents. PPT take these matters in hand with four model dimensions: I (relationships between individual, their parents, and siblings), you (relationships between parents/husband-wife), we (relationships between parents and environment) and origin we (relationships between parents and religion/philosophy of life) (Dobiala & Winkler, 2016; Eryılmaz, 2020; Peseschkian, 2014;).

Current Study

Positive Psychotherapy (PPT) as a way of leading individuals on the pathway of self-help, can be a valid and affective therapy intervention for adults with suicidal thoughts. PPT is applied to treatment for many disorders such as, mood, stress-related, neurotic, and behavioral disorders (Cagande et al., 2020). In literature, PPT perception used with clients of PTSD (Sinici et al., 2014; Sarı & Eryılmaz, 2020), depression (Eryılmaz, 2016), narcissistic disorder (Kılıç & Eryılmaz, 2019), treatment-resistant obsessive-compulsive disorder (Sinici et al., 2018), addiction (Karaaziz & Çakıcı, 2019), anxiety disorder (Kök Eren & Eryılmaz, 2019), and offenders (Eryılmaz, 2018). PPT can be effective for the treatment of suicide ideation and attempt. Hence, the aim of this study is to investigate Positive Psychotherapy perspective on suicide.

METHOD

The aim of the study is to investigate Positive Psychotherapy perspective on suicide by investigating suicidal thoughts and suicide probability. Research questions of this study are:

- (1) Do mean scores of primary capabilities significantly differ between groups of adults with and without suicidal thoughts?
- (2) Do mean scores of secondary capabilities significantly differ between groups of adults with and without suicidal thoughts?
- (3) Do mean scores of balance model significantly differ between groups of adults with and without suicidal thoughts?
- (4) Do mean scores of model dimensions significantly differ between groups of adults with and without suicidal thoughts?
- (5) Is there a significant relationship between suicide probability and primary capabilities of adults with suicidal thoughts?
- (6) Is there a significant relationship between suicide probability and secondary capabilities of adults with suicidal thoughts?
- (7) Is there a significant relationship between suicide probability and balance model dimensions of adults with suicidal thoughts?
- (8) Is there a significant relationship between suicide probability and model dimensions of adults with suicidal thoughts?



Participants

Participants were 156 (61.7%) females and 97 (38.3%) males, 253 in total. Participants were enrolled university students; 188 of them (74.3%) were studying in Faculty of Education, 53 (20.9%) of them were studying in Faculty of Electric and Electronics, the rest (4.8%) 12 were enrolled in some other faculties, such as engineering, medicine, and letters etc. Distribution of age was as follows; 23 of 18 years old (9.1%), 28 of 19 years old (11.1%), 45 of 20 years old (17.8%), 55 of 21 years old (21.7%), 54 of 22 years old (21.3%), 31 of 23 years old (12.3%), and the rest 17 (6.7%) volunteers' age were from 24 to 35.

We limited study group as adults without psychopathology. There were 19 participants who had suicide attempts in the past. We conducted a Mann-Whitney U test to see if people with suicide attempts differed from people without attempts considering suicide probability. The results showed, there were no significant differences between these two groups ($p > 0.05$) for suicide probability. So, we included 19 participants with past suicide attempts in our analysis. We asked participants about their suicidal thoughts; 145 participants marked that they don't have suicidal thoughts. The rest 108 participants marked that they have suicidal thoughts (from rarely to always).

Data Collection

Data collecting procedure was during the spring of 2019. The data was collected via Google Forms and participants were informed about the study subject and the measures. Participants confirmed that they volunteered to participate. Authors were present while participants answered the form. Their additional questions were also answered. It took approximately 25 minutes for a volunteer to finish the form.

Measures

To investigate suicidal thoughts which might exist in study group, we asked "How often do you have suicidal thoughts?" in our form and group answered in 5 Likert type between 1 (=none) and 5 (=always). Turkish versions of Wiesbaden Inventory of Positive Psychotherapy and Family Therapy (WIPPF) and Suicide Probability Scale were used.

Wiesbaden Inventory of Positive Psychotherapy and Family Therapy (WIPPF) is a scale which measures Positive Psychotherapy's structures. Inventory has 88 questions, developed by Peseschkian and Deidenbach (1988) and it is a 4-point Likert type instrument. The Turkish adaptation of the WIPPF is made by Sarı et al (2010). The values of inventory's dimension of primary and secondary capabilities found as; Chi-square value = 398.49, degree of freedom (df) = 151 and value of RMSEA = 0.074. The values of inventory's dimension of balance model found as; Chi-square value = 2.52, degree of freedom (df) = 2 and value of RMSEA = .029. The values of inventory's model dimensions found as; Chi-square value = .02, degree of freedom (df) = 2 and value of RMSEA = .00. The Cronbach Alpha reliability of the primary capabilities is .75 and for the secondary capabilities it is .77 (Sarı et al., 2010).

Suicide Probability Scale (SCS) is a 4-point scale with a total of 36 questions. It is developed by Cull and Gill (1988) to measure probability of suicide in adolescents and adults. The minimum score is 36 while the maximum score is 144. The Turkish adaptation of the scale has been made for four times by different academics. In this study, the most recent reliability study's been taken as source, which is the study by Batıgün and Şahin in 2018. SCS has 4 dimensions, and their Cronbach Alpha reliabilities are hopelessness = .73, suicide ideation = .75, negative self-evaluation = .81 and hostility = .71. Based on the advice of authors, questions numbered 5 and 19 are not included in the evaluation of the total score, hence they have been found negatively factored in the study mentioned above.

Data Analysis

An Independent T Test was conducted to compare Positive Psychotherapy structures in groups of adults with and without suicidal thoughts. Later several multiple linear multiple regression analyses



were conducted between structures of Positive Psychotherapy and Suicide Probability scores of adults with suicidal thoughts. We used SPSS 26.0 to analyze the data.

RESULTS

Based on the results of the independent t test, there were significant differences between some of the sub dimensions as following: Contact, $t(251) = 2.60, p < .01$; trust, $t_{(195,41)} = 2.65, p < .01$; hope, $t_{(251)} = 4.06, p < .001$ and love, $t_{(186,09)} = 3.79, p < .001$ in primary capabilities (**Table 1**). Punctuality, $t_{(251)} = -2.24, p < .05$; and reliability $t_{(251)} = 2.10, p < .05$ in secondary capabilities (**Table 2**). Body, $t_{(251)} = 3.41, p < .01$ and fantasy, $t_{(251)} = -3.67, p < .001$ in the dimension of balance model (**Table 3**). All model sub-dimensions differed; I, $t_{(251)} = 3.69, p < .001$; you, $t_{(251)} = 2.31, p < .05$; we, $t_{(251)} = 2.04, p < .05$ and real us, $t_{(251)} = 2.46, p < .05$ (**Table 4**). Except punctuality, body and fantasy, all other sub dimensions mentioned above had higher means in people without suicidal thoughts than people with.

Table 1. Descriptive statistics and independent t test results of primary capabilities

| | Adults Without Suicidal Thoughts | | Adults With Suicidal Thoughts | | df | tp |
|-----------------------------|----------------------------------|------|-------------------------------|------|--------|---------|
| | Mean (n = 145) | SD | Mean (n = 108) | SD | | |
| Primary Capabilities | | | | | | |
| Patience | 7.95 | 1.83 | 7.87 | 2.04 | 251 | .33 |
| Time | 8.70 | 1.66 | 8.33 | 1.87 | 251 | 1.63 |
| Contact | 8.90 | 1.67 | 8.32 | 1.93 | 251 | 2.60** |
| Trust | 9.64 | 1.21 | 9.16 | 1.56 | 195.41 | 2.65** |
| Hope | 10.21 | 1.53 | 9.39 | 1.73 | 251 | 4.06*** |
| Sexuality | 8.14 | 1.62 | 8.34 | 1.73 | 251 | -0.97 |
| Love | 9.84 | 1.28 | 9.08 | 1.76 | 186.09 | 3.79*** |
| Faith | 9.54 | 1.71 | 9.42 | 1.89 | 251 | .53 |

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Descriptive statistics and independent t test results of secondary capabilities

| | Adults Without Suicidal Thoughts | | Adults With Suicidal Thoughts | | df | tp |
|-------------------------------|----------------------------------|------|-------------------------------|------|--------|--------|
| | Mean (n = 145) | SD | Mean (n = 108) | SD | | |
| Secondary Capabilities | | | | | | |
| Orderliness | 8.35 | 1.78 | 8.28 | 1.82 | 251 | .29 |
| Cleanliness | 6.95 | 1.88 | 6.68 | 1.88 | 251 | 1.15 |
| Punctuality | 8.75 | 2.09 | 9.34 | 2.03 | 251 | -2.24* |
| Courtesy | 9.64 | 1.61 | 9.70 | 1.28 | 249.89 | -.34 |
| Honesty | 9.09 | 1.48 | 9.37 | 1.77 | 205.60 | -1.34 |
| Achievement | 8.21 | 1.92 | 8.60 | 2.06 | 251 | -1.57 |



| | | | | | | |
|-------------|-------|------|-------|------|-----|-------|
| Reliability | 10.11 | 1.26 | 9.77 | 1.30 | 251 | 2.10* |
| Thrift | 6.28 | 1.78 | 6.38 | 1.85 | 251 | -.45 |
| Obedience | 8.67 | 1.42 | 8.47 | 1.53 | 251 | 1.06 |
| Justice | 9.57 | 1.47 | 9.29 | 1.69 | 251 | 1.43 |
| Loyalty | 10.37 | 1.11 | 10.26 | 1.20 | 251 | .79 |

*p<.05, **p<.01, ***p<.001

Table 3. Descriptive statistics and independent t test results of balance model

| | Adults Without Suicidal Thoughts | | Adults With Suicidal Thoughts | | df | tp |
|----------------------|----------------------------------|------|-------------------------------|------|--------|----------|
| | Mean (n = 145) | SD | Mean (n = 108) | SD | | |
| Balance Model | | | | | | |
| Body | 7.75 | 1.73 | 8.52 | 1.85 | 251 | 3.41** |
| Achievement | 7.97 | 1.88 | 8.35 | 2.03 | 251 | -1.56 |
| Social Contact | 7.65 | 1.69 | 7.42 | 2.21 | 193.88 | 0.95 |
| Fantasy | 9.15 | 1.83 | 9.98 | 1.70 | 251 | -3.67*** |

*p<.05, **p<.01, ***p<.001

Table 4. Descriptive statistics and independent t test results of model dimensions

| | Adults Without Suicidal Thoughts | | Adults With Suicidal Thoughts | | df | tp |
|-------------------------|----------------------------------|------|-------------------------------|------|-----|---------|
| | Mean (n = 145) | SD | Mean (n = 108) | SD | | |
| Model Dimensions | | | | | | |
| I | 23.71 | 4.17 | 21.78 | 4.02 | 251 | 3.69*** |
| You | 8.17 | 2.57 | 7.42 | 2.52 | 251 | 2.31* |
| We | 8.67 | 1.75 | 8.13 | 2.06 | 251 | 2.04* |
| Real Us | 8.12 | 2.36 | 7.37 | 2.43 | 251 | 2.46* |

*p<.05, **p<.01, ***p<.001

We conducted 4 regression analyses to investigate if PPT's 4 structure can predict suicide probability in adults with suicidal thoughts. Primary capabilities of PPT predicted ($r = .712$, $r^2 = .507$, $F = 12.709$, $p < .001$) 51% percent of the total variant of suicide probability on negative direction (**Table 5**). Also, among eight primary capabilities, hope ($\beta = -.351$, $p < .001$) and love ($\beta = -.414$, $p < .001$) were significant.

Table 5. Regression analysis for primary capabilities

| | B | SE B | β | t | p |
|-----------------|---------|-------|---------|--------|---------|
| Constant | 131.346 | 7.523 | | 17.460 | .000*** |
| Patience | -.590 | 7.523 | -.092 | -1.654 | .251 |
| Time | -.884 | .511 | -.127 | -1.329 | .187 |
| Relationship | .166 | .665 | .025 | .270 | .788 |



| | | | | | |
|-----------|--------|------|-------|--------|---------|
| Trust | .554 | .712 | .066 | .778 | .438 |
| Hope | -2.766 | .685 | -.351 | -4.040 | .000*** |
| Sexuality | 1.134 | .596 | .150 | 1.904 | .060 |
| Love | -3.062 | .606 | -.414 | -5.051 | .000*** |
| Faith | -.638 | .579 | -.092 | -1.102 | .273 |

*** $p < .001$, ($r = .712$, $r^2 = .507$, $p < .001$)

Secondly, 11 sub-dimensions of secondary capabilities analyzed for predicting suicide probability and it found significant ($r = .427$, $r^2 = .182$, $F = 1.942$, $p < .05$). In total, secondary capabilities predicted 18% of suicide probability. Among secondary capabilities, orderliness ($\beta = -.233$, $p < .05$), honesty ($\beta = -.251$, $p < .05$) and reliability ($\beta = -.295$, $p < .01$) can significantly predict suicide probability on negative direction (**Table 6**).

Table 6. Regression analysis for secondary capabilities

| | B | SE B | β | t | p |
|-------------|---------|--------|---------|--------|---------|
| Constant | 108.422 | 15.746 | | 6.886 | .000*** |
| Orderliness | -1.669 | .813 | -.233 | -2.053 | .043* |
| Cleanliness | .913 | .715 | .132 | 1.277 | .205 |
| Punctuality | 1.205 | .734 | .188 | 1.641 | .104 |
| Courtesy | -.351 | 1.029 | -.034 | -.341 | .734 |
| Honesty | -1.851 | .816 | -.251 | -2.268 | .026* |
| Achievement | .853 | .678 | .135 | 1.258 | .211 |
| Reliability | -2.958 | 1.070 | -.295 | -2.766 | .007** |
| Thrift | .204 | .682 | .029 | .300 | .765 |
| Obedience | -.363 | .937 | -.042 | -.387 | .699 |
| Justice | .113 | .755 | .015 | .150 | .881 |
| Loyalty | .638 | 1.243 | .058 | .514 | .609 |

* $p < .05$, ** $p < .01$, *** $p < .001$ ($r = .427$, $r^2 = .182$, $p < .05$)

Regression on balance model showed that body ($\beta = .267$, $p < .05$) predicted suicide probability on positive direction. In total, balance model significantly predicted ($r = .332$, $r^2 = .110$, $F = 3.186$, $p < .05$) 11% of suicide probability (**Table 7**). Finally model dimensions predicted 15% suicide probability ($r = .386$, $r^2 = .149$, $F = 4.515$, $p < .01$). Based on the analysis, real us ($\beta = -.291$, $p < .05$) sub dimension significantly predicted suicide probability on negative directions (**Table 8**).

Table 7. Regression analysis for balance model

| | B | SE B | β | t | p |
|----------------|---------|-------|---------|--------|---------|
| Constant | 66.131 | 8.972 | | 7.371 | .000*** |
| Body | 1.883 | .747 | .267 | 2.522 | .013* |
| Achievement | -1.1147 | .608 | -.179 | -1.885 | .062 |
| Social Contact | .036 | .575 | -.006 | -.063 | .950 |



| | | | | | |
|---------|------|------|------|------|------|
| Fantasy | .261 | .833 | .034 | .314 | .754 |
|---------|------|------|------|------|------|

*p<.05, **p<.01, ***p<.001 (r = .332, r2 =.110, p<.05)

Table 8. Regression analysis for model dimensions

| | B | SE B | β | t | p |
|-----------------|--------|-------|-------|--------|--------|
| Constant | 96.096 | 7.274 | | 13.212 | 000*** |
| I | -.236 | .382 | -.073 | -.617 | .539 |
| You | -.260 | .673 | -.050 | -.386 | .701 |
| We | -.253 | .707 | -.039 | -.358 | .721 |
| Real Us | -1.560 | .613 | -.291 | -2.543 | .012* |

*p<.05, **p<.01, ***p<.001 (r = .386, r2 =.149, p<.01)

DISCUSSION and CONCLUSIONS

The results show that all of four structures of Positive Psychotherapy have differentiations depending on having suicidal thoughts, and they can predict suicide probability as well. Adults without suicidal thoughts have significantly higher scores of trust, contact, hope and love capabilities than adults with suicidal thoughts. There are direct connections between these capacities and psychopathology. For example, the low usage of capability of contact blocks people to have rewarding relationships with others and can make them experience social punishments. This can lead to depression and anxiety (Burt et al., 2008; Eryılmaz, 2020). The low usage of capability of trust can mean distrust towards others in relationships or towards self-confidence. It can be seen throughout many personality disorders such as paranoid, antisocial, avoidant, and dependent (APA, 2013; Eryılmaz, 2020). This study’s results indicate that these capabilities are also particularly important when considering suicide.

Primary capabilities can predict up to 51% of suicide probability; especially hope and love capabilities are significant. In literature, hope and suicide risk found related in many studies and research emphasize the importance of hope in people with suicide risk and they see it as a warning sign of suicide (Beck et al., 2006; Davidson et al., 2010; Rudd, 2008). Cognitive Therapy uses hope to intervene the suicidal behavior in suicide attempters (Henriques et al., 2003). Likewise, in Integrated Motivational-Volitional Model of Suicidal Behavior, hope was found as a negative predictor for suicide ideation (Tucker et al., 2016). In PPT, hope is considered as a primary capability that emerged from the capacity of love. Additionally, hope is an important principle in PPT therapy process (Eryılmaz, 2020). Hopeless people tend to have negative perspective about their goals in life and therefore they are more likely to stop trying to achieve their goals in life. By getting increasingly hopeless, individuals can give up on life in total and build suicidal thoughts. Maybe even attempt suicide. Some results in literature show that hopelessness is a stronger predictor of suicide than depression (Beck et. Al., 1985; Snyder, 2001). In PPT the capacity of hope means that person believes that there is a way out of pain/stress, they and their family can have a nice future. This equals to having life goals and a sense of direction in one’s life (Peseschkian, 2014). Hence, when approaching the treatment/prevention of suicidal ideation and probability the element of hope can be a game changer.

Along with hope, capability of love plays a key role for suicide probability. Motives of love seen in suicide notes regardless of sex and age (Canetto & Lester, 2002). Intense senses of love are associated with suicide attempts (Yaseen et al., 2012). We can also explain the relationship through Social Analysis of Structural Behavior (SASB) Model (Benjamin, 1993). SASB model tests the transactions (tissues) in interpersonal and intrapersonal relationships. Benjamin (1993) suggests that with using four keys (love, hate, differentiation, and enmeshment) psyche such as fears, wishes and patterns can be easily described. Just like in PPT’s balance principle, SASB also considers the unbalance between



dimensions are the cause of psychopathology (Benjamin, 1993; Eryılmaz, 2020). In PPT, mental disorders are the results of efforts made by the individual, who was simply trying to restore balance. Therefore, these remarks about the associations between love, balance and psychopathology can be used to understand suicide; how it emerges and how to treat or prevent it. Working on achieving a balance on capability of love can help treatment or wellbeing interventions for those who have suicidal thoughts.

Continuing with secondary capabilities, results show significant differences between adults with or without suicidal thoughts. Secondary capabilities emerge from the capacity of perception/know. People learn different things every day. They shape their perceptions about the outside world and themselves. These capabilities are the reflections of their perceptions about themselves and others (Peseschkian, 2014). Thus, they use them actively during daily life. In the results of independent t test, reliability and punctuality scores significantly differed but in opposite ways. People with suicidal thoughts had higher levels of punctuality capability. This means that people with suicidal thoughts have problems with time pressure. And they are trying to control time's pressure in their daily lives, more than people without suicidal thoughts. On the other hand, being trusted by others, having a sense of order and responsibility, also being honest with yourself can decrease suicide probability.

Our results indicate that being too punctual and dealing with time pressure might be unhealthy. In fact, suicide is an act of killing oneself in a scheduled time decided by oneself. Therefore, the pressure of time must be a valid variance in the topic of suicide. A study made by Fawcett et al. (1990) about time-related predictors of suicide supports our discussion. During depression, the concept of time becomes so definite that a person would feel constant feeling of guilt about time; stuck between past and future (Fuchs, 2013). There can be a similar relationship between time pressure and suicide. Trying to control time too much including the "when" about one's own end... On the contrary, people who use the reliability capability more than who don't; will act to gain trust from others and for them to maintain this, they will take responsibilities in their relationships. Roen et al. (2008) also consider emotional responsibility to others as a preventative factor for suicide. Therefore, we can say that reliability is another capability effective for suicide treatment. Similarly, being honest with yourself can help decrease suicide probability. When someone uses their honesty capability, they can be authentic. By being authentic, people can be honest with themselves. They can acknowledge their own thoughts, feelings, behaviors, desires, choices, beliefs, and reactions (Harter, 2002). With increasing honesty capability, people can understand and accept their desires, thoughts, etc. and choose to work on them; instead of giving up and choosing to commit suicide. Another affective capability for suicide probability is orderliness. Having a sense of order in one's home/study or workplace can help feeling control over one's life. Additionally, to maintain order people would have to take responsibility at home or workplace. This might lead to actively coping with daily pressures and conflicts. Hence it can provide a feeling of control against the feeling of desperation, which is the common case for many suicidal people.

In our results, people with suicidal thoughts focus more on their bodies and fantasies. They significantly use their body and fantasy to cope with conflicts they have in daily life. Moreover, body was a significant predictor of suicide probability. Orbach et al. (2001) found that the wishes of death are strongly related to hateful relationships with body. In another study suicidal people showed different attitudes toward their bodies (Orbach, 2003). Friedman et al. (1972) speak of acts of conscious self-harm toward body among suicidal adolescents. Additionally, Winnicott (1960, as cited in Kaslow et al., 1998) involved fantasy in the definition of suicide, which is the fantasy of destroying bad aspects of oneself in case of threat. Based on that, it is completely normal for a suicidal person to fantasize more than others. Death fantasies are touched on when treating suicidal people (Hendin, 1975, 1981; Movahedi, 2004). Guided or positive fantasy techniques can be used in therapy sessions (Fowler, 2003; Marroquín et al., 2013). Therefore, the amount and content of the fantasy might be the key; reframing deathly fantasies to positive may help for coping of suicidal people.



Results point out healing pathway through real us dimension for suicidal probability in people with suicidal thoughts. Model dimensions play a role on developing capacity of love, which predicted 51% of suicidal probability (see table 5). I dimension shows the relationships of individual's thoughts of themselves and how they satisfy their needs and wants/desires. Also, I dimension is related with body on coping with conflicts (Peseschkian, 2014). A healthy structure on I dimension would regulate body coping. This can prevent extreme usage of body which might decrease suicidal thoughts. Real Us dimension represents person's thoughts on future, religion, and philosophy of life (Peseschkian, 2014). Peseschkian (2014) takes religion and philosophical opinion as the most important effect on personal experiences. Because people use their opinions to make sense of their life. People also explains themselves "Why are they living?" "What would happen if they died?" "What will happen when they die?" through these opinions they created (Argyle, 2001). Studies show that religious thoughts about suicide protect from suicide attempts (Lawrence et al., 2016). Based on these remarks, building, or developing healthy opinions on life and death can help decreasing suicidal probability upon treatment for suicidal adults.

Conclusions and Suggestions

This study's results show that PPT structures and suicide ideation and probability are related on various levels and sub dimensions. These core elements differ between adults with or without suicidal thoughts. PPT structures predicted suicide probability for adults with suicidal thoughts. These results point out to some key points for treatment or wellbeing increasing interventions for preventing suicidal thoughts or probability through PPT: (1) Love and hope might play a key role preventing suicide. (2) Reliability, honesty, and orderliness capabilities can be improved for daily life connections. (3) Too much usage of punctuality might increase time pressure and desperateness, hence it's worth looking into. (4) Too much and deathly fantasy can have a negative effect. The amount and content of fantasies during the day can be regulated for better mental state. (5) Disarranging the focus on body can help decrease suicidal thoughts and probability. Coping and conflict solving strategies can be used for achieving/improving balance. (6) Looking into the client's self-image, thoughts on themselves and their religious/philosophical opinions can be important to understand the meaning of themselves and life they have in their head. This can point out clues for coping ways for conflicts which would benefit the client's mental health.

Limitations

This study's participant group is limited to adults without psychopathology. Also participating adults are relatively young adults.

Authors Contributions

Gaye Birni: Research design, data collection, data analysis, data interpretation, drafting the manuscript, manuscript subscription.

Ali Eryılmaz: Research design, data collection, data analysis, data interpretation, revising the manuscript.

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Authors report there are no competing interests to declare.

Ethical Statement

This study was conducted according to ethical and research standards. All participants participated to study were volunteers. Information about study subject, aim and researchers were given to the participants. Informed consent has obtained.

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TIJSEG



INDUSTRIAL NOISE EXPOSURE AND WORK-RELATED STRESS AS PREDICTORS OF AUDITORY PERFORMANCE AND PSYCHOLOGICAL WELL-BEING OF INDUSTRIAL WORKERS IN IBADAN, OYO STATE, NIGERIA

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Abstract

Noise is a health-threatening phenomenon, which often affects health, safety, and efficiency of people at workplace, home, and socio-educational gatherings. Therefore, exposure to this noise and work-related stress has been observed to have deleterious effect on the auditory performance and psychological wellbeing of industrial workers. The study investigated the influence of industrial noise and work-related stress on the auditory performance and psychological well-being of factory workers in Ibadan. The study adopted a survey research design, and purposively sampled 304 industrial workers through the use of a self-developed questionnaire titled 'Influence of Industrial Noise Exposure and Work-Related Scale', with a reliability coefficient of 0.76. Afterwards, all the participants were audiologically examined via Pure-Tone Audiometric Assessment (PTA). Data generated were analysed using frequency counts, percentage, mean and Pearson's Product Moment Correlation (PPMC). 206 (67.8%) participants who were audiologically tested presented with different types and patterns of hearing loss, as 130 (47.0%) of the participants had high frequency hearing loss in the right ear, while 150(54.6%) had same in the left ear. Also, 90 (33.0%) of the participants had mild hearing loss in the right ear, while 80 (29.0%) had same in the left ear. 188 (61.8%) of the participants reported difficulty in hearing when someone speaks in a whisper or at a very low voice. 216 (71.1%) of the participants claimed that they frequently change their phone from one ear to another when receiving calls via mobile phone. 181 (59.5%) of the participants admitted that they hear better in one ear than the other. Further findings revealed that 179 (58.9%) of the participants do have difficulty hearing as well as understanding their fellow co-workers, clients or customers whenever engaging in conversation. 163 (53.6%) of the participants agreed that they always tune up to high volume when using mobile phone, TV or Radio. Consequently, reduced auditory performance and poor psychological wellbeing have been found to be associated with industrial noise exposure and work-related stress among industrial workers in Ibadan. Therefore, the study recommends periodic audiological evaluation, appropriate use of hearing protective devices, regular public awareness on effects of work-related stress on quality of life as well as the psychological well-being. Government should ensure that industrial firms adhere strictly to health and safety policies, hearing conservation protocols, and regular medical check-ups. Working hours at various industrial firms should be reduced to allow for adequate rest and off-duty relaxation as well as physical exercise to prevent unnecessary fatigue, reduced auditory performance and poor psychological well-being.

Keywords: Auditory performance, factory workers, hearing loss and conservation, industrial noise exposure, psychological well-being, work-related stress.



INTRODUCTION

Hearing is the ability to hear; the main ability to recognize, perceive, understand and discriminate sounds accurately. Hearing is one of the five senses of human beings, which helps by attaching meaning to sounds for better speech understanding and discrimination. Hearing makes human beings stay alert in case of impending danger or for recreational purposes, such as listening to music or localizing verbal information and messages around. Thus, hearing, which is the ability to hear is critical to understanding the world around us (ASHA, 2016; Marconi, 2016). Hearing plays an essential role in communication, speech and language development and learning. Hearing is the ability, through effective auditory organs, to detect vibrating elements within the environment and transmitting same via the auditory nerves to the brain for interpretation. To this end, hearing is described as the ability to perceive sounds by detecting vibrations through the sense of hearing, while at the same time giving the received vibrations proper interpretation towards establishing the required speech-sound understanding and discrimination needed for effective human communication and other related psycho-social functions (Osisanya, 2014).

Hearing is a complex, and multi-process sensory-auditory function and ultimately occurs when the brain receives and interprets sounds from the environment (Bagai, Thavendiranathan, & Deksky, 2006; Adesokan & Osisanya, 2019). This, however, necessitates adequate and accurate reception of sound signals as the auditory sense serves as a window to the world, allowing access to essential information that underpins daily functioning. Hearing is the key to communication, and a means for social interaction, because it is a main tool for the smooth and efficient communication among human beings. As one sensory domain, hearing is critical to an individual's ability to communicate, interact with others, perceive dangers and feel connected to the environment (Dalton, 2003; Kochkin & Rogin, 2000). Hearing accompanies human beings throughout life; it shapes and influences every part of humans' world. Hearing enables human beings to communicate with others, enjoy social interaction as well as to benefit maximally from the humans' world, even with the use of natural auditory processing system Osisanya, Adeniyi, and Florain (2017). Our hearing is used for the entire twenty-four hours that makes up a day, because the auditory system keeps functioning even when we fall asleep. Hearing is the ability to perceive sounds, and the human ear plays an important role in hearing, for it is the main sensory organ of the human ear, which performs the first processing of sounds, while at the same time houses all the sensory receptors required for hearing (Boundless, 2016). The human ear can be broken down into the outer ear, middle ear and inner ear. These three divisions have specialized functions that work together to allow humans to hear. The human ear is an extraordinary sound-detecting organ of all the organs of the body (Bakare, 2013). Human beings also have the ability to access and determine where sounds originate from, which is an auditory function commonly called sound localization. It is the ability of the auditory system to localize and process the received sound signal perfectly, and process starts with the determination of where a sound originates, although this is dependent on the hearing ability of each ear, and the exact quality of sound involved (Boundless, 2016).

Human ear is a very delicate and highly sophisticated structure, as such it is particularly susceptible to damage which can lead to hearing loss over time or immediately, depending on the nature of damage (Deaf Hear, 2016; Fada & Osisanya, 2017). Hearing loss occurs, for some reasons, when sound is not properly transmitted from the external ear through the middle ear and inner ear to the brain where it is expected to be interpreted towards establishing proper speech understanding and discrimination of the sound received. There are a number of causative or risk factors responsible for hearing loss in humans, ranging from presbycusis (Age-related hearing loss), exposure to noise, use of toxic drugs, and other prenatal, peri-natal and post-natal causes. Whence, any of this occurs there is possibility of having hearing loss in the affected ear. Consequently, the emergent hearing loss would lead to loss of ability to recognize or perceive, understand and discriminate sounds perfectly.



Hearing loss can be congenital or acquired as a result of excessive exposure to noise, ototoxic drugs such as certain types of chemotherapies and antibiotics, industrial chemicals, presbycusis which is related to ageing and nutritional deficiencies. Hearing loss has significant implications for an individual's ability to participate at work or other social activities as well as increasing the risk of an individual misinterpreting what is perceived. Put differently, hearing loss has negative impact on an individual's work-life, because it makes participation in the work environment challenging, especially if the work entails continuous verbal communication, using the phone or communicating with clients and other personnel (Boulton, 2013; Ross, 2011; Fada & Osisanya, 2017). Although, there are adaptations that can be made to facilitate continued work in such a situation, for example, such an individual might be redeployed or assisted via the recommendations of hearing conservation guidelines, and where this is not done, people with hearing loss will earn less than those without hearing loss and are more likely to be unemployed and experience work discrimination (Kochkin, 2010; Bowe, McMahon, Chang, & Louvi, 2005).

Hearing loss is classified as “conductive” or “sensorineural” and even mixed depending on the site of the problem. Conductive hearing loss occurs when there is a blockage in the outer or middle ear and can often be corrected surgically or through strict adherence to hearing conservation protocols, while sensorineural hearing loss describes a condition in which the problem lies in the cochlea (inner ear) or in the nerve pathways to the brain and this condition is always a permanent problem, as well required aural rehabilitation. Mixed hearing loss occurs when a person suffers from both conductive and sensorineural problems. Hearing loss can be of different degrees, ranging from mild to profound or total deafness. The categories are based on the results of audiological evaluations. Thus, Okuoyibo (2006) explained hearing loss as a generic condition that reduces the hearing acuity of an individual and makes it impossible for him to perceive and interpret auditory signals. While, IDEA (2004) expressed that hearing loss is an impairment in hearing, whether permanent or fluctuating that adversely affects a child's educational performance. According to Waleed, Al-Kandari and Hasan (2015), hearing loss is categorised as being mild, moderate, severe or profound loss, which includes deafness and hard of hearing. It is identified by the decibel (dB) loss; a mild loss is ranged between 25-40dB, moderate is 41-55dB, moderate-to-severe is 56-70dB, severe is 71-90dB, and profound is 91+dB. Thus, an individual with a mild hearing loss has difficulty hearing soft sounds that is a bit far away, while a moderate hearing loss can lead to misunderstanding of conversational speech if the speaker is more than 5 feet away to the recipient, especially in a noisy environment (or where there is a lot of people) such as a public place or classroom setting. For someone with a moderate-to-severe hearing loss, the speaker must be loud to be understood and any group discussion will be hard to understand. For the severe loss, the speaker should be no further than one foot away. A profound loss may result in absolute silence or only loud sounds may be heard, such as a chain saw or jet. With this level of loss, the person is dependent on visual clues and even cues.

Hearing loss generally occurs over a range of frequencies and may be described by the term(s) such as high frequency, low frequency loss or flat depending on the pattern of hearing loss recorded. However, apart from the three conventional types of hearing loss aforementioned, there are other classifications of hearing loss based on the causes of the loss such as the presbycusis; which is a kind of hearing loss caused by old age and is also referred to as a psychogenic hearing loss, caused by emotional and psychological factors. Other types include Noise-Induced Hearing Loss (henceforth, referred to as NIHL) which is caused by the exposure to noise (sound) particularly those exceeding 85dB. NIHL can be caused by a one-time exposure to an “impulse” sound, such as exposure to loud sounds over an extended period (National Institute on Deafness and Other Communication Disorders, 2014). It should be noted that most humans are prone to NIHL owing to exposure to noise from industrial firms, traffic, airplanes, recreation centres and concerts. Noise has been observed as an environmental pollutant ravaging the human environment due to improved human environment and activities, as well as technological advancement

(Osisanya, 1998; Osisanya, Oyewumi, & Sumonu, 2014). For instance, in Brazil, NIHL is one of the major health problems of workers, and it ranks second among the most frequent diseases of this present age. This occupational disease has been defined as a gradual decrease in hearing acuity resulting from continuous exposure to high sound pressure levels, causing injury to the middle ear and the inner hair cells of the organ of corti. NIHL is an important public health priority because as population lives longer and industrialization spreads, NIHL adds substantially to the global burden of disability. In many countries, excessive noise is the biggest occupational hazard as 16.0% of the disabling hearing loss in adults worldwide is attributed to occupational noise, ranging from 7 to 21.0% in various sub-regions (Subroto & Dhattrak, 2008).

However, it is quite unfortunate that industrial workers with NIHL may not benefit sufficiently from the information or communication experience in the factories or industries, in the sense that they lack the ability to correctly pick, comprehend and appropriately locate the source(s) of sounds. This might lead to frustration, accident, occupational health problems and psychological imbalances. Apart from these, hearing loss, especially NIHL is the most common complication associated with exposure to industrial noise. Noise pollution is one of the major health challenges, and it has deleterious effect on the auditory system and psychological well-being of industrial workers if necessary, safety guidelines and tips are not adhered to strictly. While examining the source of noise pollution in the industry to project the preventive strategies in order to determine the appropriate hearing conservation protocols that will suit the nature of industrial noise and noise pollution in such factories examined, Burns and Faukner (2002) identified sources of noise pollution as machines such as automobiles, trucks and aircraft, construction equipment, farm machines and industrial machines which are dangerously loud for the auditory systems. Similarly, Shukla (2003) identified engine ships, super tankers, offshore oil exploration and drilling as high producing noise sources. With the identification of the sources of noise pollution in the industry, it is pivotal to consider mechanism(s) to prevent occurrence of further NIHL among the industrial workers. Thus, preventing hearing loss among the factory workers who are at risk of NIHL and the attendant physiological as well as psychological problems (Szeszenia, Dabrowska, & Wilezynska, 2013) requires the assessment of the factory workers in a bid to determine the prevalence of hearing loss and the magnitude of work-related stress among the workers of the industrial firms, and also to determine the relationship between work-related stress and psychological well-being. Therefore, this study was undertaken to investigate the predictive influence of industrial noise exposure and work-related stress on auditory performance and psychological well-being of industrial workers in Ibadan, Oyo State, Nigeria.

Purpose of the Research

This study was conducted to:

1. investigate the influence of industrial noise and work-related stress on the auditory performance of the industrial workers.
2. investigate the influence of industrial noise and work-related stress on the psychological wellbeing of industrial workers.
3. determine the prevalence of hearing loss among the factory workers.
4. find out the relationship between industrial noise exposure and auditory performance.
5. find out the relationship between work-related stress and auditory performance.
6. find out the relationship between industrial noise exposure and psychological well-being
7. find out the relationship between work-related stress and psychological well-being.

Research Questions

1. What is the prevalence of hearing loss among the factory workers?



2. What is the prevalence of those who are present with hearing loss due to continuous exposure to industrial noise?

Hypothesis

H₀₁: There is no significant relationship between industrial noise and auditory performance among factory workers in Ibadan.

H₀₂: There is no significant relationship between work-related stress and auditory performance among factory workers in Ibadan.

H₀₃: There is no significant relationship between industrial noise and psychological well-being among factory workers in Ibadan.

H₀₄: There is no significant relationship between work-related stress and psychological wellbeing among factory workers in Ibadan.

METHOD

This study adopted the survey research design of correlational type to investigate the predictive influence of industrial noise exposure and work-related stress on auditory performance and psychological well-being of factory workers in Ibadan, Oyo State, Nigeria.

The population of the study comprised all industrial workers in Ibadan, Oyo State, Nigeria, while three hundred and four (304) industrial workers were purposively selected as participants in the study. The participants were selected from four (4) purposively selected industries within Ibadan Metropolis.

Instruments used for data collection were:

- A. Influence of Industrial Noise and Work-Related Stress Scale ($r=0.76$).
- B. Sound Level Meter - To determine the noise level in each of the industrial factories.
- C. Otoscope - To evaluate the status of the ear tissue.
- D. Audiogrammes - For recording of auditory performance.
- E. Audiometer: Maico ST 20 - To determine the participants' hearing threshold.

In an attempt to carry out this study in the selected factories, permission of the officers in-charge of Human Resources Unit of each of the factories was sought. In the commencement of the study, a digital sound level meter (Bentech: GM-13507) was employed by the researchers to measure the degree of noise the workers in each factory were exposed to. Thereafter, the researchers explained the purpose of the study to the intended participants, and each of them was given a questionnaire to fill. After filling the questionnaire, the participants were audiologically examined to determine their hearing threshold and patterns of hearing loss. Thus, they were subjected to otoscopic examination towards checking the nature of the ear canals down to the tympanic membrane. Afterwards, Pure-Tone Audiometric assessment (PTA) was conducted individually on them at the noise-free complex (healthcare centre). With the nature of PTA, Air conduction and Bone conduction tests were the only audiological evaluation conducted on them, having complied strictly with the rules of Pure-Tone Audiometric assessment. Maico ST20, which has been calibrated to British Standards, International Standards Organisation, American National Standards Institute specification and biologically evaluated for efficiency and reliable outcome was employed to conduct the Pure-Tone Audiometry. Data collected via the administration of the questionnaire were subjected to frequency counts, percentages, Pearson's Product Moment Correlation (PPMC), Multiple regression analysis (MRA); while the Pure-Tone Audiometric results were subjected to frequency counts and percentages.



Results Demographic analysis of the participants

Table 1. Frequency distribution of respondents by gender

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male | 185 | 60.9 |
| Female | 119 | 39.1 |
| Total | 304 | 100.0 |

The results in Table 1 show that the male participants were 185 (60.9%), while the female participants were 119(39.1%). This indicates that there were more male participants than female participants, meaning that there were more male factory workers than their female counterparts.

Table 2. Frequency distribution of respondents by age

| Age group | Frequency | Percentage (%) |
|--------------------|-----------|----------------|
| 21 to 25 years | 33 | 10.9 |
| 26 to 30 years | 86 | 28.3 |
| 31 to 35 years | 50 | 16.4 |
| 36 to 40 years | 47 | 15.5 |
| 41 to 45 years | 44 | 14.5 |
| 46 to 50 years | 19 | 6.3 |
| 50 years and above | 25 | 8.2 |
| Total | 304 | 100.0% |

The results in Table 2 reveal that the majority of the workers were in the age group of 26-30 years. In fact, the group accounted for 28.3% (86) of the participants, followed by those in the age group of 31-35 years with 16.4% (50) and closely followed by those in age groups of 36-40 years and 40-45 years, with 15.5% (47) and 14.5% (44) respectively. While those in age group of 21-25 years were 33 in number accounting for 10.9% of the participants, and those above 50 years of age were 25 (8.2%) in number as against 19 (6.3%) in the age group of 46-50 years, which is the least in the categories of the participants.

Answering the research questions

RQ₁: What is the prevalence of hearing loss among workers?

Table 3i. Prevalence of hearing loss among the factory workers

| Items | Number | Percentage |
|-----------------------------------|--------|------------|
| Participants without hearing loss | 98 | 32.2% |
| Participants with hearing loss | 206 | 67.8% |
| Total | 304 | 100 |

The result in Table 3i shows that 98 (32.2%) participants were found without any type of hearing loss, while 206 (67.8%) participants presented with hearing loss. This result reveals further that 206 of the sampled factory workers were with unidentified hearing loss. Thus, many of the factory workers have developed different types and nature of auditory disabling conditions, which would have negative impact on their daily interpersonal interaction, productivity at work and overall psychological well-being, if the reduced auditory sensitivity is not rehabilitated early.



Table 3ii. Different patterns of hearing loss of participants based on audiometric report

| Pattern of hearing loss | Right ear | | Left ear | |
|-----------------------------|-----------|--------------|-----------|--------------|
| | Frequency | % Percentage | Frequency | % Percentage |
| Normal | 55 | 20 | 45 | 16.4 |
| Mild | 90 | 33 | 80 | 29 |
| High Frequency hearing loss | 130 | 47 | 150 | 54.6 |
| Total | 275 | 100 | 275 | 100 |

Table 3ii shows the different patterns of hearing loss observed among the sampled factory workers based on the audiometric performance of each of the hearing systems of the factory workers. Therefore, out of 275 workers audiometrically tested only 55 participants had normal auditory acuity on their right ear, while 45 participants had normal hearing acuity at the left ear. 90 of the participants had mild hearing loss at the right ear as against 80 with left ear mild hearing loss. Also, 130 of the participants had high frequency hearing loss at their right ear, while 150 of the participants had high frequency at the left ear. The finding implies that 220 (80.0%) out of 275 right ears examined had different types of hearing loss, while 230 (83.6%) at 275 left ears examined had different forms of hearing loss. The finding also indicates that there is no significant difference in the auditory performance at both the right and left ears of the participants.

Table 3iii. Prevalence of hearing loss

| S/N | Item Description | Yes (%) | No (%) | Mean | Rank |
|-------------------|--|-----------|-----------|-------------|------|
| 1 | Do you have difficulty hearing when someone voice | 188(61.8) | 116(38.2) | 1.62 | 2 |
| 2 | I tune up to high volume when using mobile | 163(53.6) | 141(46.4) | 1.54 | 5 |
| 3 | When people talk to me, I require for repetition or clarification | 143(47.0) | 161(53.0) | 1.47 | 8 |
| 4 | I cannot hear people well when outside my place of work | 159(52.3) | 145(47.7) | 1.52 | 6 |
| 5 | Has anyone ever told you that you are speaking too loudly when talking to him/her at your place of work or elsewhere | 156(51.3) | 148(48.7) | 1.51 | 7 |
| 6 | Most times when receiving calls via mobile phone, I frequently change the phone from one ear to another | 216(71.1) | 88(28.9) | 1.71 | 1 |
| 7 | I hear better in one ear than other | 181(59.5) | 123(40.5) | 1.60 | 3 |
| 8 | Do you have difficulty hearing/ understanding co-workers, clients or customers | 179(58.9) | 125(41.1) | 1.59 | 4 |
| 9 | Does your hearing performance cause you to feel frustrated when talking to members of your family | 130(42.8) | 174(57.2) | 1.43 | 10 |
| 10 | Do your family members feel uncomfortable talking to you from a far distance or behind you | 135(44.4) | 169(55.6) | 1.44 | 9 |
| Grand mean | | | | 1.54 | |

The results in Table 3iii explain additional information about the prevalence of hearing loss among the sampled factory workers. Thus, the results show that 216; 71.1% of the participants expressed that they frequently change their phone from one ear to another most times when receiving calls. 188 (61.8%) of the participants agreed to the construct that they have difficulty hearing clearly whenever someone speaks in a whisper or at a very low voice, but 181(59.5%) claimed hearing better in one ear than the other one. On the other hand, 179 (58.9%) expressed that they have difficulty hearing or understanding their co-workers and customers whenever they are in a conversation. Also, 163 (53.5%) agreed that they always tune up to high volume whenever they are using mobile phone, as well as when viewing

television or listening to Radio set, while 14 (46.4%) of the participants disagreed with this construct based on the mean value of $\chi = 1.54$. 159 (52.3%) of the participants agreed that they cannot hear (understand clearly) people very well whenever they are outside of their places of work or at any other place apart from their places of work. Although, 148(48.7%) of the participants claimed that there is no one who has told them that they are speaking too high or loudly. On the other hand, 161(53.0%) of the participants disagree with the construct that they require clarification or do ask the speaker(s) to repeat whatever they are saying, but 143 (47.1%) agreed with the construct, based on the mean value of $\chi = 1.47$, that they require repetition and clarification whenever people are talking to them. With the mean value of $\chi = 1.44$, 135 (44.4%) claimed that their family members always find it difficult and uncomfortable taking with them from a distance or behind them, as against 174 (57.2%) of the participants who reported that their family member find it easy and convenient to communicate with them. In a nutshell, the findings in Table 3iii have shown that hidden (unidentified) hearing loss was common among the sampled factory workers in Ibadan, Oyo State, Nigeria, and there is urgent need to compel all the factories in the city of Ibadan, and Oyo State in general to adhere strictly to the hearing conservation protocols, and health and safety rules.

RQ₂: What is the prevalence of those who are presented with hearing loss due to continuous exposure to industrial noise?

Table 4. Hearing loss due to continuous exposure to industrial noise

| S/N | Item Description | SD (%) | D (%) | A (%) | SA (%) | Mean | Rank |
|-------------------|---|----------|-----------|-----------|----------|-------------|------|
| 1 | I get annoyed with high noise level at workplace | 43(14.1) | 80(26.3) | 112(36.8) | 69(22.7) | 2.68 | 3 |
| 2 | I do have a headache due to high level noise at workplace | 44(14.5) | 137(45.1) | 76(25.0) | 47(15.5) | 2.41 | 9 |
| 3 | Noise in the factory causes interference in speech for me | 41(13.5) | 55(18.1) | 141(46.4) | 67(22.0) | 2.77 | 1 |
| 4 | The hazardous effects of noise in the factory affect my productivity | 27(8.9) | 171(56.3) | 78(25.7) | 28(9.2) | 2.35 | 10 |
| 5 | Factory noise makes me have poor hearing | 15(4.9) | 114(37.5) | 124(40.8) | 51(16.8) | 2.69 | 2 |
| 6 | Factory noise is injurious to my health | 27(8.9) | 124(40.8) | 92(30.3) | 61(20.1) | 2.62 | 4 |
| 7 | I experience a headache due to exposure to high noise in the factory | 11(3.6) | 153(50.3) | 113(37.2) | 27(8.9) | 2.51 | 6 |
| 8 | Factory noise sometimes constitutes distractions to me at work | 18(5.9) | 154(50.7) | 116(38.2) | 16(5.3) | 2.43 | 7 |
| 9 | I find it difficult to interact with other employees at work due to high noise interference | 29(9.5) | 160(52.6) | 92(30.3) | 23(7.6) | 2.36 | 8 |
| 10 | I hardly comprehend instruction from my supervisor due to high noise exposure | 5(1.6) | 158(52.0) | 120(39.5) | 21(6.9) | 2.52 | 5 |
| Grand mean | | | | | | 2.53 | |

Table 4 presents results on the prevalence of those who are present with hearing loss due to continuous exposure to industrial noise, and the findings show the level of exposure to industrial noise. 208 (68.4%) agreed that noise in the factory causes interference in speech for them, while 96 (31.6%) disagreed and supported the findings based on the mean value of $\chi = 2.77$. 175 (57.6%) of participants agreed that factory noise makes them have poor hearing, while 129(42.4%) disagreed and this is supported with the mean value of $\chi = 2.69$. Also, 181(59.3%) of the participants agreed that they get annoyed with high noise level at work place, while 123(40.7%) disagreed and this is based on the mean value of $\chi = 2.68$. 153(50.4%) agreed that factory noise is injurious to their health, while 151(40.4%) disagreed totally that



factory noise is not in any way injurious to their health. On the other hand, 163(53.6%) of the participants disagreed with the construct that they hardly comprehend instructions from their supervisors due to high noise exposure, while 141(46.4%) of them agreed with the mean value of $\chi = 2.52$ that they hardly comprehend the instructions given to them by their supervisors. Furthermore, 164(53.9%) disagreed that they experience a headache due to exposure to industrial noise in their workplaces, while 140(46.1%) of them agreed with mean value of $\chi = 2.51$ that they always experience headache due to the pressure of noise in their places of work. 172(56.6%) of the participants disagreed that factory noise sometimes constitutes distractions to them at work, while 132 (43.4%) agreed and supported with mean value of $\chi = 2.43$. 189(62.1%) disagreed that they find it difficult to interact with other employees at work due to high level of noise interference, while 115 (37.9%) agreed that they find it difficult to interact while at work due to noise interference. Although, 198(65.2%) of the participants disagreed that hazardous effect of noise in the factory always affects their productivity at work, while 106 (34.8%) agreed with the construct and this is based on the mean value of $\chi = 2.35$. This implies that there is evidence of hearing loss due to continuous exposure to industrial noise among the factory workers sampled. The findings are indicative of negative effect of continuous exposure to industrial noise on the auditory performance and psychological well-being of the factory workers sampled.

Testing the Hypotheses

Ho₁: There is no significant relationship between industrial noise and auditory performance among factory workers in Ibadan.

Table 5. Showing the significant relationship between industrial noise and auditory performance among factory workers

| Variable | Mean | Std. Dev. | N | r | P | Remark |
|----------------------|-------|-----------|-----|--------|------|--------|
| Industrial noise | 25.34 | 5.87 | 304 | .377** | .005 | Sig. |
| Auditory performance | 15.42 | 3..36 | | | | |

*Sig. at .05 level

The results in Table 5 show that there was a positive significant relationship between industrial noise and auditory performance ($r = .377^{**}$, $N= 304$, $p=.005<.05$) among factory workers in Ibadan. This means that there was a significant difference in the mean value of industrial noise and auditory performance, and that continuous exposure to industrial noise brings about negative changes in the auditory performance of these workers who were constantly exposed to the industrial noise. Thus, the null hypothesis is rejected on the ground that there was a significant relationship between exposure to industrial noise and the auditory performance of the factory workers.

Ho₂: There is no significant relationship between work-related stress and auditory performance among factory workers in Ibadan.

Table 6. Showing the significant relationship between work-related stress and auditory performance among factory workers

| Variable | Mean | Std. Dev. | N | r | P | Remark |
|----------------------|-------|-----------|-----|--------|------|--------|
| Work-related stress | 73.39 | 10.19 | 304 | .510** | .003 | Sig. |
| Auditory performance | 15.42 | 3.36 | | | | |

*Sig. at .05 level

Table 6 shows that there was a positive significant relationship between work-related stress and auditory performance ($r = .510^{**}$, $N= 304$, $p=0.003 < .05$) among factory workers in Ibadan. There is a significant relationship between work-related stress and auditory performance among factory workers in Ibadan. The

findings in table 6 have shown the significant relationship between work-related stress and auditory performance on the ground that there was significant difference between the mean score of work-related stress (73.39) and auditory performance (15.42). This finding suggests the rejection of the null hypothesis which states that there is no significant relationship between work-related stress and auditory performance among factory workers in Ibadan.

Ho₃: There is no significant relationship between industrial noise and psychological well-being among factory workers in Ibadan.

Table 7. Showing the significant relationship between industrial noise and psychological well-being among factory workers in Ibadan

| Variable | Mean | Std. Dev. | N | r | P | Remark |
|--------------------------|-------|-----------|-----|--------|------|--------|
| Industrial noise | 25.34 | 5.87 | 304 | .109** | .006 | Sig. |
| Psychological well-being | 56.36 | 6.27 | | | | |

*Sig. at .05 level

The findings in Table 7 above show that there was a positive significant relationship between industrial noise and psychological well-being ($r = .109^{**}$, $N = 304$, $p = .006 < .05$) among factory workers in Ibadan. The findings also reveal a strong relationship between industrial noise and psychological well-being, and that continued exposure to industrial noise could negatively affect the psychological wellbeing of those who are exposed to it on a regular basis. Furthermore, there was a significant difference between industrial noise (25.34) and psychological well-being (56.36), it could be concluded that industrial noise is capable causing negative psychological feelings. Thus, most factory workers sampled have developed negative psychological wellbeing due to continued exposure to unregulated industrial noise.

Ho₄: There is no significant relationship between work-related stress and psychological wellbeing among factory workers in Ibadan.

Table 8. Showing the significant relationship between work-related stress and psychological well-being among factory workers

| Variable | Mean | Std. Dev. | N | r | P | Remark |
|--------------------------|-------|-----------|-----|--------|------|--------|
| Work-related stress | 73.39 | 10.19 | 304 | .419** | .000 | Sig. |
| Psychological well-being | 56.36 | 6.27 | | | | |

*Sig. at .05 level

Table 8 reveals a positive significant relationship between work-related stress and psychological well-being ($r = .419^{**}$, $N = 304$, $p = .000 < .05$) among factory workers in Ibadan. This indicates that work-related stress has negative influence on the psychological well-being of the factory workers. With the significant difference in the mean of work related stress (73.39) and psychological wellbeing (56.36), it implies that the null hypothesis is rejected on the ground that there is significant relationship between the two constructs.

Discussion of Findings Prevalence of hearing loss among the factory workers

Based on the findings of this study, it has been confirmed that there were more male factory workers than their female counterparts, and the majority of the factory workers were between ages 26 and 45 years. And that majority of the factory workers had already developed high frequency hearing loss unknowingly. This finding was in line with the findings of Adesokan and Osisanya (2019). It is visible from the analysis in Table 3 that majority of the participants frequently change their phone from one ear to another when receiving calls via mobile phone and experiencing difficulty hearing when someone



speaks in a whisper or at a very low voice. Also, it has been found that many of the participants hear better in one of the ears with attendant difficulty hearing and/ or understanding co-workers, clients or customers. Thus, they resulted in tuning up to high volume when using mobile phone, viewing television or listening to radio. Majority of the participants cannot hear people well when outside their places of work, and people do complain that they are speaking too loudly when talking to them at their places of work or elsewhere. This is in accordance with the submission of National Institute on Deafness and other Communication Disorders (NIDCD, 2007) that Noise-Induce Hearing Loss can be caused by a one-time exposure to an intense or impulse sound, such as noise explosion or continuous exposure to loud sounds over an extended period of time. This study therefore discovered that there is high prevalence of hearing loss among factory workers in Ibadan which was in tandem with earlier studies of Osisanya, Oyewumi and Summonu (2014), Fada and Osisanya (2017); and Adesokan and Osisanya (2019) that reported similar high prevalence of high frequency hearing loss among the factory workers as well as the commercial drivers in Ibadan metropolis.

Prevalence of those who are presented with hearing loss due to continuous exposure to industrial noise

Considering the findings of this study in relation to the above, 68.4% of the participants agreed that noise in the factory causes interference in speech for them, 59.3% of the participants agreed that they get annoyed with high level noise at workplace and 57.6% of the participants agreed that factory noise makes them to have poor hearing. In addition, 53% of the participants disagreed that they have a headache due to exposure to high noise in the factory. Therefore, the findings implied that the percentage of the participants that are present with hearing loss due to continuous exposure to industrial noise were more than those who are not present with hearing loss. According to studies on auditory performance of factory worker of small or medium companies by Kim, Min and Park (2009) the risk for reported accidents is more for factory workers. It is estimated that over 600 million people in the world are exposed to sounds higher than the acceptable standard in their working places (Kim et al, 2009; Shulka, 2003). Thus, those factory workers easily acquire hearing loss (especially noise induced hearing loss) due to continuous exposure to industrial noise, which was in accordance with the findings of past studies. In fact, the findings of this study supported the report of Bruce (2008) that frequent exposure to industrial noise always impairs factory workers and other employees' auditory performance as much as 40.0%. Therefore, the findings of this study were in support of the past studies on the same variables.

Relationships between the Independent Variables and the Dependent Variables

The findings revealed that there was significant relationship between the independent variables and dependent variables. The possible reason for this development could be as a result of the continuous exposure of the participants to industrial noise and work-related stress which have been negatively affecting their auditory performance and psychological well-being. Although, the noise produced by these industries varies according to their process, technology, size and nature of products, generative characteristics and complexity of their production, but the scientific evidence(s) available on noise pollution reports the consequences of noisy environment as hazardous and detrimental to human health considering the fact that when people are exposed to intense noise levels, some or all of the hair cells in the organ of corti would be damaged temporarily or permanently, and this is consistent with the study of Kim, et al (2009) which examined the auditory performance of factory workers of small or medium companies, and reported that accidents were common among the factory workers who were exposed to noise. Also, there is emergence of disorders along cognitive activities such as learning, memorizing, and other personal behaviours, followed by reduction in the efficiency of such individuals, especially in the area of intellectual activities (Muzet, 2007). Also, Goines and Hagler (2009) stated that auditory function of factory workers could make alterations in performance and social behaviours such as increasing the



rate of error, accidents, reducing concentration, memory, and the ability to solve problems, misuse of medicines, disappointment, and hopelessness.

Conclusion and Recommendations

Exposure to noise has been observed to have deleterious impact on the health of individuals working within the ravaging environment. In today's complex industrial society, noise exposure poses an increasingly serious threat to individuals hearing mechanisms. Majority of the industrial workers are unaware of the harmful effects of industrial noise to their auditory performance and psychological well-being. On the other hand, stress, due to work, is a growing concern in the current state of the economy, where employees increasingly experience varied negative conditions of overwork, job insecurity, low levels of job satisfaction and lack of autonomy. Workplace stress has been observed to have detrimental effects on the health and general well-being of the employees, as well as having negative impact on productivity at work and psychosocial life. Therefore, based on the findings of this study, it is necessary to recommend that periodic audiological assessment and evaluation should be encouraged so as to detect early if there are any change in their auditory performance. Also, the factory workers should cultivate positive attitude to following hearing conservation guideline at work, as well as practising positive healthy lifestyle both at work and outside the workplaces. They should not overwork themselves or work beyond their capacity. The factory workers should try to avoid unnecessary workload and work-related stressors. As well, every conflicting priority between work and home should be resolved early, and adequate time must be allocated for their personal rest and leisure (recreational activities). Lastly, every factory worker should endeavour to reduce their stress level regularly and cultivate the habit of eating healthy diets, enjoying regular exercise, while avoidance of alcohol and smoking is advised. The professional counselling of a career counsellor (or psychologist) and mental-health expert might also be necessary whenever there are feelings of work-related stress.

Ethics and Conflict of Interest

We declare and confirm that we have acted in accordance with ethical rules throughout the entire research. No potential conflict of interest was reported by the authors.

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EVALUATION OF HOPELESSNESS AND LIFE SATISFACTION LEVELS IN ADOLESCENTS

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Abstract

This study aims to investigate the hopelessness and life satisfaction level of adolescents after the Covid-19 pandemic. The population of the research consists of 133 women and 77 men, a total of 210 high school students aged between 15-18, who live and study in the TRNC during the 2021-2022 academic year. Personal Information Form, Satisfaction with Life Scale, and Beck Hopelessness Scale were used in the study. In order to apply the data collection tools, the relevant forms and scales were transferred to Google Forms and shared with the adolescents who were educated in different high schools, selected with a simple random method, and volunteers were asked to fill in these forms. Based on the relational results between the Hopelessness Scale and Satisfaction with Life Scale, it has been determined that there are statistically significant and negative correlations between the scores of the adolescents. According to the data obtained from the hopelessness and life satisfaction scale, it was concluded that no significant difference was observed according to gender, grade level, separation or separation of parents, death of one of the parents, or both being alive and living with their families. In addition, as a result of the research, no significant difference was found in the level of life satisfaction of the adolescents according to the number of siblings, a significant difference was found in the levels of hopelessness, and it was determined that the adolescents with five or more siblings were found to be higher than the adolescents who had no siblings, it has been concluded that adolescents with lower income levels have less life satisfaction.

Keywords: Hopelessness, life satisfaction, adolescent.

INTRODUCTION

People adapt to new environmental situations by changing their lifestyles in case of various dangers or risks. After the outbreak of the coronavirus in Wuhan, China in 2019, most governments have taken



strict measures to control the spread of the virus that caused the pandemic. Due to quarantine measures like the closedown of schools and lockdowns, in which it was forbidden to leave the house for anything other than meeting basic needs due to social distance-related restrictions, people have faced extended periods of social isolation and stress, and their daily lives have been profoundly affected and changed, and such changes have affected every individual in various ways (Choi, et al. 2021; Ferget et al., 2020). Both the pandemic itself and the curfews caused by the policies to mitigate the pandemic have affected multiple aspects of life and in addition to psychological effects such as loneliness, anxiety, depression, and hopelessness among people, increased body mass index as a result of decreased physical activity, irregular sleep hours, unhealthy diets and longer exposure to a smartphone screen, also caused physical problems (Rajkumar, 2020; Vindegaard & Benros, 2020). Loades et al. (2020) revealed that social isolation and loneliness caused by the Covid-19 pandemic increased depression and anxiety in children and adolescents.

Adolescence, which can be defined as the vulnerable developmental stage, is the period in which young people pass from childhood to adulthood. Social interactions, which are effective in the development of self-esteem in this period, are mostly made with friends away from family (Branje et al., 2012), and changes are observed in cognitive ability and nervous system and adolescents try to form their own identity that can enable them to undertake adulthood tasks (Meeus, 2016). Since adolescence is a vulnerable developmental stage in which various mental problems first appear and become widespread, the psychological ruins of this period and the limitations of the pandemic prevent adolescents from performing their developmental tasks. Because the pandemic is a long-term, pervasive, high-risk catastrophe that disrupts the economy, reduces social interaction, changes daily routines for a long time, and creates serious uncertainty about the present and the future, it causes hopelessness as a source of stress on adults and young people (Gruber et al., 2020; Masten, 2020). Gruber et al. (2020) examined the impact of the pandemic and preventive measures on social participation and argued that insufficient fulfillment of relational needs increases loneliness levels and reduces life satisfaction. Work and work experience is an important part of a person's life, and an increase in the achievement of personal goals also increases life satisfaction (Bulut Serin & Aydınoglu, 2013).

Life satisfaction, which is a part of one's own well-being, is a cognitive process that expresses how happy the individual is with their life and how they evaluate the difference between what they have and their expectations (Chen et al., 2017). Bucher et al. (2019) report that individuals who maintain balance in their lives and have positive judgments about their expectations have achieved satisfaction. Social determination theory suggests that life satisfaction is intricately related to the need to have meaningful relationships with other people. If these relational needs are not adequately met, this can lead to loneliness and depression and negatively affect life satisfaction assessments (Bucher et al., 2019). Life satisfaction affects the happiness, subjective well-being, psychology, and positive functionality of individuals (Strozik et al., 2016; Anlayışlı & Bulut-Serin, 2019).

One other most important factor affecting life during the pandemic process is hopelessness (Banerjee, 2020). Apart from pessimistic cognitive schemas, hopelessness consists of emotional, cognitive, and motivational components that are distinctive with negative expectations for the future. Hopelessness has the feature of revealing depressive symptoms (Kocalevent et al., 2017). In order to help avoid aggression and violence in the school environment, it is important to identify the variables that affect the school environment (Hatun & Serin, 2021). Hopeless and depressed individuals perceive themselves as incomplete and faulty, evaluate the world and the future negatively, think that the events in life are challenging, and feel hopeless about the future (Chioqueta & Stiles, 2005). The individual's effort to adapt to changes related to his physical development, his attempts to fulfill his familial and educational responsibilities, and the restrictions imposed by the pandemic cause the adolescent to experience negative emotions, increase stress and anxiety, and as a result lead to hopelessness.

Although the methods used by countries to control the Covid-19 pandemic vary, the main strategy applied all over the world has been social restraint, and these restrictions have decreased today and a



return to normal life is being observed (Oosterhoff et al., 2020). The economic recession caused by the Covid-19 pandemic, uncertain job market prospects, the question of which department will adolescents choose at the university, financial pressure from families, social networks, career opportunities living conditions is considered as risk factor for negative changes in life satisfaction and mental health (Banerjee, 2020; Hatun & Serin, 2021). The rapid spread of the coronavirus caused loss of expectation and became a constant concern for one's own safety and a threat of losing loved ones. The catastrophic projections regarding prolonged economic recession raise deep concerns about future livelihoods and retirement security. Faced with the loss of their education and business plans, adolescents are afraid of losing their life dreams such as pursuing a career, gaining financial independence, finding life partners and starting a family (Demir, 2011). Considering the situations in which adolescents are involved both due to their developmental period and due to the negative conditions derived from the pandemic, it can be said that they feel hopeless about the objectives they set for their future. Thus, considering that the family and living conditions of adolescents who attend high school are mostly negative, it is important to examine the hopelessness levels of students in secondary education, which is forced by academic conditions. Therefore, choosing the job and profession appropriate to their personality and characteristics and receiving education in this direction can positively affect life satisfaction (Gündoğar et al., 2007). Based on the explanations above, this study examines post-pandemic hopelessness and life satisfaction in adolescents.

Purpose of the Research

Problem Statement

What kind of a relationship exist between hopelessness and life satisfaction levels of high school students? Do hopelessness and life satisfaction levels differ significantly according to socio-demographic variables?

Sub Problems

- Is there a significant difference between the hopelessness and life satisfaction levels of high school students and the variables of gender, living together with the family, the department studied, the high school grade of the students, the number of siblings, whether the parents live together, financial income and age?
- What kind of relationship exists between hopelessness and life satisfaction of high school students?
- What is the relationship between the hopelessness and life satisfaction of high school students and the variables of gender, living with the family, the department studied, the high school grade of the students, the number of siblings, whether the parents live together, financial income and age?

METHOD

Research Model

In this study, since it was aimed to determine the hopelessness and life satisfaction levels of adolescents and to understand whether hopelessness and life satisfaction levels differ according to various variables, the descriptive survey model was used.

Universe and Sample

The universe of this research is composed of high school students in the district centers of the Ministry of National Education of the Turkish Republic of Northern Cyprus in the 2021-2022 academic year.

Research Sample

The sample of the research is composed of high school students in the district centers of the Ministry of National Education of the Turkish Republic of Northern Cyprus.

A total of 210 students, including 63% female and 37% male, participated in the research. While 94.3% of the students live with their parents, 5.7% do not live with their parents. In addition, it was learned that 69% of the student's received education in math-science classes, 7.6% in Turkish-social classes,



21% in Turkish-mathematics classes and 2.4% in language classes at school. In addition, it was determined that 3.8% of the students were first-year, 14.4% were second-year, 30.5% were third-year students, and the remaining 53.3% were fourth-year students. 14.8% of the high school students participating in the research have no siblings, 79% have one to three siblings, 5.2% have three to five siblings, and 1% have five or more siblings. While 79.5% of these students stated that their parents live together, 18.6% of them stated that their parents are separated, 1% of mothers and 1% of the fathers passed away.

In addition, when students are asked to indicate their family's financial income, 2.9% of them defined their family income between 0-4000 TL, 7.6% between 4000-6000 TL, 19% between 6000-8000 TL, 25.7% between 8000 and 10000 and 44.8% is defined as 10000 TL and above. Furthermore, 1% of the adolescents participated in the study are at the age of 14, 6.7% are at the age of 15, 17.6% are at the age of 16, 48.6% are at the age of 17, 25.7% are at the age of 18, and 5% are at the age of 19.

Data Collection Tools

Personal Information Form

It is the form that involves questions to obtain some information such as the school, gender, age and socio-economic status of the parents.

Beck Hopelessness Scale (BHS)

The Beck Hopelessness Scale was developed by Beck, Weissman, Lester, and Trexler (1974). Turkish adaptation study was performed by Durak (1993). Scale is composed of 20 items. Beck Hopelessness Scale helps an individual to reveal their positive and negative expectations, thoughts and feelings about their future perception (Durak & Palabıyıköğlü, 1994). The items in the scale are scored between 0 and 1. While 11 of the items get 0 points with the 'yes' option, 9 of them get 1 point with the 'no' option. "No" to questions 1, 3, 5, 6, 8, 10, 13, 15 and 19 in the scale, and "yes" to questions 2, 4, 7, 9, 11, 12, 14, 16, 17, 18 and 20 is awarded with 1 point (Savaşır & Şahin, 1997). The validity and reliability study of the Beck Hopelessness Scale was conducted by Durak (1993). In addition, Durak and Palabıyıköğlü (1994) again executed a validity and reliability study. In their study, it was stated that the reliability of the scale was 85 (Durak & Palabıyıköğlü, 1994). In this study, the reliability value obtained from the sum of the scale was found to be 88.

Satisfaction with Life Scale (SLS)

The Satisfaction with Life Scale was developed by Diener, Emmons, Larsen, and Griffin in 1985. The original form of the scale is evaluated with a single factor, five-item and 7-point Likert type. Each item is evaluated as (1: Totally Disagree – 7: Totally Agree). The scale was adapted into Turkish by Köker (1991) and used by various researchers in Turkey as a 7-point rating scale (Dağlı & Baysal, 2016). In this study, the Satisfaction with Life Scale developed by Dağlı and Baysal in 2016 was used. There is only one factor and five items in the developed scale. Items are evaluated with a 5-point Likert type. The scale developed by Dağlı and Baysal (2016) is stated as "I totally do not agree (1), I agree very little (2), I agree on a moderate level (3), I strongly agree (4) and I totally agree (5)". In their study, the Cronbach Alpha coefficient, which gives the internal consistency of the items, was determined as .88. In this study, the Cronbach Alpha internal consistency coefficient was found to be .84.

Data Analysis

The data obtained in the study were analyzed using the 26th version of SPSS (Statistical Package for Social Science). Before starting the analysis, the data was made ready for analysis. Within this scope, the extreme values of the variables were examined. In this context, although 222 adolescents studying at various high schools in the TRNC were included in the study, since the data of 12 students was seen as extreme values, they were excluded from the study and analyzes were carried out with the answers of 210 high school students. When the analysis was initiated, the t-test for Independent Samples was first applied to examine the differences in terms of dependent variables according to the levels of the independent variables in the socio-demographic information form and having at least two categories.



Then, the differences between the scales used in the study, according to the levels of the independent variables with more than two categories were examined by One-Way Analysis of Variance (ANOVA). In case of significant difference between the groups, Post Hoc tests were applied for pairwise comparisons. Finally, the Pearson Correlation method was used to examine the relationships between the scales used in the study. Then, the relationship between the scales used in the study and socio-demographic characteristics was examined. The findings obtained from the analysis are explained in detail.

RESULTS

In this part of the research, the findings related to the Hopelessness and Life Satisfaction sub-problems of Adolescents are given in detail.

Table 1. The t-Test results regarding the differences of the participants' hopelessness and life satisfaction levels according to the gender variable

| | Group | n | Mean | Std.Dev. | t | p |
|-------------------|-------|-----|------|----------|-------|------|
| Hopelessness | Woman | 133 | 1.42 | .25 | 1.620 | .630 |
| | Man | 77 | 1.36 | .59 | | |
| Life Satisfaction | Woman | 133 | 2.72 | .87 | 1.790 | .951 |
| | Man | 77 | 2.95 | .92 | | |

p<.05*

According to the results of the analysis, no significant difference was found between the hopelessness levels of the adolescents by gender ($t_{(208)}=1.620$, $p>.05$). As can be seen in Table 1, no significant difference was determined between the levels of life satisfaction of the adolescents by gender ($t_{(208)}=-1.790$, $p>.05$).

Table 2. T-Test results of the differences in the levels of hopelessness and life satisfaction of the participants according to the variable of living with parents

| | Group | n | Mean | Std.Dev. | t | p |
|-------------------|-------|-----|------|----------|-------|------|
| Hopelessness | Yes | 198 | 1.39 | .27 | 1.464 | .744 |
| | No | 12 | 1.50 | .28 | | |
| Life Satisfaction | Yes | 198 | 2.82 | .89 | 1.672 | .678 |
| | No | 12 | 2.38 | .92 | | |

p<.05*

According to the results of the analysis, no significant difference was found between the hopelessness levels of the adolescents in terms of living together with their parents ($t_{(208)}= -1,464$, $p>.05$). According to the analysis result, no significant difference was determined between the levels of life satisfaction of the adolescence based on whether they live together with their parents ($t_{(208)}=1.672$, $p>.05$).

Table 3. ANOVA test results regarding the variation of participants' hopelessness and life satisfaction levels according to the variable of department of education

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|-----|------|----------|-------|------|
| Math-Science | 145 | 1.39 | .26 | .214 | .887 |
| Turkish-social | 16 | 1.44 | .28 | | |
| Math-Turkish | 44 | 1.38 | .27 | | |
| Language | 5 | 1.39 | .18 | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| Math-Science | 145 | 2.88 | .87 | 1.616 | .187 |
| Turkish-social | 16 | 2.50 | .94 | | |
| Math-Turkish | 44 | 2.63 | .96 | | |
| Language | 5 | 2.72 | .76 | | |

p<.05*

No difference was found between the hopelessness levels of the adolescents participating in the study, according to the department they study ($F_{(3,206)}= .214$, $p>.05$).



Looking at Table 3, it is seen that there is no difference between the levels of life satisfaction of the adolescents, according to the department they study ($F_{(3,206)}=1.616, p>.05$).

Table 4. ANOVA test results regarding the variation of participants' hopelessness and life satisfaction levels according to high school grades variable

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|-----|------|----------|-------|------|
| First | 8 | 1.47 | .25 | 1.469 | .224 |
| Second | 26 | 1.31 | .20 | | |
| Third | 64 | 1.39 | .26 | | |
| Fourth | 112 | 1.41 | .27 | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| First | 8 | 2.43 | .95 | 2.065 | .106 |
| Second | 26 | 3.10 | .66 | | |
| Third | 64 | 2.89 | 1.01 | | |
| Fourth | 112 | 2.71 | .85 | | |

$p<.05^*$

Examining Table 4, it is seen that there is no difference between the hopelessness levels of the adolescents, according to at which grade they are (1-2-3-4) ($F_{(3,206)}=1.469, p>.05$).

No difference was determined between the grade of the adolescents participating in the study (1-2-3-4) and their level of life satisfaction ($F_{(3,206)}=2.065, p>.05$).

Table 5. ANOVA test results regarding the differences of participants' hopelessness and life satisfaction levels

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|-----|------|----------|-------|-------|
| No Sibling | 31 | 1.33 | .22 | 2.711 | .046* |
| 1-3 Sibling | 166 | 1.40 | .26 | | |
| 3-5 Sibling | 11 | 1.44 | .25 | | |
| 5 and More | 2 | 1.83 | .11 | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| No Sibling | 31 | 3.08 | .96 | 1.852 | .139 |
| 1-3 Siblings | 166 | 2.78 | .88 | | |
| 3-5 Siblings | 11 | 2.40 | .88 | | |
| 5 and More | 2 | 2.50 | .14 | | |

$p<.05^*$

It can be seen that there is a significant difference between the groups in terms of hopelessness levels, according to the number of siblings (no siblings/ 1-3 siblings/ 3-5 siblings, 5 and above) of the adolescents ($F_{(3,206)}=2.711, p<.05$). According to the results of the Tukey comparison test;

It is determined that the hopelessness levels of adolescents with 5 or more siblings (Mean=1.825, SD=.106) are higher than those of adolescents who have no siblings (Mean=1.329, Std.Dev.=.218), and there is a significant difference between the groups ($p<.05$). There was no difference in life satisfaction levels, according to the number of siblings (no siblings/ 1-3 siblings/ 3-5 siblings, 5 and above) of the adolescents participating in the study ($F_{(3,206)}=1.852, p>.05$).

Table 6. ANOVA test results regarding the differentiation in the levels of hopelessness and life satisfaction of the participants according to whether their parents live together

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|-----|------|----------|------|------|
| Yes | 167 | 1.40 | .26 | .366 | .778 |
| No | 39 | 1.40 | .27 | | |
| Mother is not alive | 2 | 1.28 | .04 | | |
| Father is not alive | 2 | 1.25 | .07 | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| Yes | 167 | 2.83 | .89 | .469 | .704 |
| No | 39 | 2.66 | .95 | | |
| Mother is not alive | 2 | 3.00 | .28 | | |
| Father is not alive | 2 | 3.10 | .42 | | |

$p<.05^*$



There was no difference between the hopelessness levels of the adolescents participating in the study, according to whether their parents live together (my parents are together / my parents are separated / my mother is not alive / my father is not alive / both my mother and father are not alive) ($F_{(3,206)}=.366$, $p>.05$). No difference was determined between the levels of life satisfaction of the adolescents participating in the study, according to whether their parents live together (my parents are together/my parents are separated/my mother is not alive/my father is not alive/both my mother and father are dead) ($F_{(3,206)}=.469$, $p>.05$).

Table 7. ANOVA test results regarding the differences of hopelessness and life satisfaction levels of participants according to the financial income variable

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|----|------|----------|-------|-------|
| 0-4000 TL | 6 | 1.28 | .26 | .465 | .761 |
| 4000-6000 TL | 16 | 1.44 | .21 | | |
| 6000-8000 TL | 40 | 1.38 | .26 | | |
| 8000-10000 TL | 54 | 1.38 | .26 | | |
| 10000 TL and above | 94 | 1.40 | .26 | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| 0-4000 TL | 6 | 2.70 | 1.06 | 3.856 | .005* |
| 4000-6000 TL | 16 | 2.06 | .90 | | |
| 6000-8000 TL | 40 | 2.69 | .86 | | |
| 8000-10000 TL | 54 | 2.83 | .82 | | |
| 10000 TL and above | 94 | 2.97 | .89 | | |

$p<.05^*$

There was no difference between the groups in terms of hopelessness levels, according to the financial income status of the families of the adolescents (0-4000/4000-6000/6000-8000/8000-10000/10000 and above) ($F_{(4,205)}=.465$, $p>.05$). It can be seen that there is a significant difference between the groups in terms of life satisfaction levels, according to the financial income status of the families of the adolescents (0-4000/4000-6000/6000-8000/8000-10000/10000 and above) ($F_{(4,205)}=3.856$, $p<.05$). According to the results of the Tukey comparison test; The life satisfaction levels of the adolescents (Mean=2.062 Std.Dev.=.902) who stated that their families had a salary of 4000-6.000 TL were lower than the life satisfaction levels (Mean. =2,829, Std.Dev.=.815) of the adolescents with a family income of 8.000-10.000 TL.

It can be said that there is a significant difference among the groups ($p<.05$). The life satisfaction levels of the adolescents who stated that their families had a salary of 4.000-6.000 TL (Mean=2.062 Std.Dev.=.902) were lower than the levels of life satisfaction (Mean=2.96, Std.Dev.=.888) of the adolescents whose families had an income of 10.000 TL or more, and a significant difference was determined between the groups ($p<.05$).

Table 8. ANOVA test results regarding the variation of the participants' hopelessness and life satisfaction levels by age variable

| HOPELESSNESS | n | Mean | Std.Dev. | F | p |
|-------------------------|-----|------|----------|-------|------|
| 14 Age | 2 | 1.63 | .28 | 1.243 | .290 |
| 15 Age | 14 | 1.31 | .24 | | |
| 16 Age | 37 | 1.37 | .26 | | |
| 17 Age | 102 | 1.39 | .25 | | |
| 18 Age | 54 | 1.42 | .26 | | |
| 19 Age | 1 | 1.05 | - | | |
| LIFE SATISFACTION LEVEL | n | Mean | Std.Dev. | F | p |
| 14 Age | 2 | 2.00 | .00 | 1.18 | .320 |
| 15 Age | 14 | 3.01 | .94 | | |
| 16 Age | 37 | 2.96 | .89 | | |
| 17 Age | 102 | 2.81 | .90 | | |
| 18 Age | 54 | 2.62 | .86 | | |
| 19 Age | 1 | 3.20 | - | | |



No difference was determined between the hopelessness levels of the adolescents participating in the study, according to their age (14 years/15 years/16 years/17 years/18 years and 19 years) ($F_{(5,204)}=1243, p>.05$). In addition, no difference was observed between the levels of life satisfaction of the adolescents, according to their age (14 years/15 years/16 years/17 years/18 years and 19 years) ($F_{(5,204)}=1.181, p>.05$).

Table 9. Correlation of participants' hopelessness and satisfaction with life scales

| | r | p |
|-----------------|-------|--------|
| HS & LLSS Scale | -.506 | .000** |

p<.001**

Table 9 shows the relationship between Hopelessness Scale and Birth of Life Scale. When the results of the analysis are assessed, it is seen that there is a significant negative correlation between HS and LLSS ($r= -.506, p<.05$). Based on these findings, it can be said that as the hopelessness levels of high school students increase, their life satisfaction levels will decrease.

Table 10. The relationship between some socio-demographic features of the participants and the scales of hopelessness and life satisfaction

| | r | p |
|--|-------|--------|
| HS& Number of Siblings | .163 | .018* |
| LSS & Number of Siblings | -.157 | .023* |
| LSS & Income | .218 | .001* |
| Age & School grades | .835 | .000** |
| Whether parents live together & Living with family | .333 | .000** |
| Whether parents live together & Income | -.146 | .035* |

p<.001** p<.05*

When Table 10 is examined, it is seen that there is a significant positive correlation between the Hopelessness Scale and the number of siblings ($r=.163, p<.05$). It can be said that as the number of siblings of high school student increases, their level of hopelessness will also increase. Moreover, a significant negative correlation is observed between the Satisfaction with Life Scale and the number of siblings ($r=-.157, p<.05$). As the number of siblings of adolescents increases, their level of life satisfaction decreases. In addition, it was found that there is a positive and meaningful relationship between the financial income of the families of the adolescents and the life satisfaction of the individuals ($r=.218, p<.05$). When the relationship between age and high school grades of adolescents is examined, it can be said that there is a positive and significant relationship between the variables ($r=.835, p<.001$). According to Table 10, a positive and significant relationship is determined between whether parents are together and to live with parents ($r=.333, p<.05$). It can be said that the case of living with families for the adolescents whose parents are together is almost related to the same rate. The coexistence of parents is directly proportional to living together with their children. In addition to that, it was also monitored that there was a significant negative correlation between the state of being together with the parents and financial income ($r=-.146, p<.05$). Adolescent families with separated parents have higher financial income.

DISCUSSION and CONCLUSIONS

In this study conducted, it was objected to examine the differences between hopelessness and life satisfaction of high school students who returned to their schools after the end of Covid-19 pandemic restrictions, due to some demographic variables. Within the scope of the study, it was evaluated whether students' hopelessness and life satisfaction levels differed according to variables such as; gender, marital status of parents, living together, grade levels, number of siblings, and income level. As a result of the analysis, when the relationship between hopelessness and life satisfaction was examined, a significant negative relationship was determined. Since unhappiness is associated with negative outcomes such as negative expectations, beliefs, failures, and problem-solving challenges, it is expected that the



subjective well-being of adolescents, which has an important role in developmental progress, will affect their life satisfaction (Valois et al., 2001). As a result of the literature review, it is seen that studies generally find a relationship between hopelessness and life satisfaction (Bronk, 2005; Diener & Seligman, 2002; Gündoğar et al, 2007; Padmanabhanunni & Pretorius, 2021; Shek & Li, 2016; Topuz, 2021; Tümkaya, Çelik) and Aybenk, 2011). As a result of the literature review, it has been understood that people's life satisfaction at a good or bad level may cause more than one negative emotion for them (Bronk, 2005; Bronk et al., 2009). Hopelessness can be associated with life satisfaction, as the individual develops negative expectations for the future and hopelessness means that she attributes false meanings to life without a reasonable cause (Beck et al., 1974).

In addition, the inability of individuals in adolescence to set goals for life, and to be aimless, cause a low level of life satisfaction, increase the level of hopelessness, and the emergence of negative thoughts (Heisel & Flett, 2004). The fact that there was no significant difference between the hopelessness levels of high school students, according to gender in the study shows that it is compatible with the results of the literature (Ottekin, 2009). Tümkaya, Çelik, and Aybenk (2011), Gençay (2009), and Doğan (2012) state in their research on students that the levels of hopelessness do not differ between male and female students. Due to the effect of the pandemic period restrictions on people, the fact that some problems such as the economic crisis, unemployment, financial difficulties, and the change in the university entrance system caused various problems for both male and female participants, caused no difference between the genders and did not cause them to despair for the future. When the level of life satisfaction has been examined according to the gender of the adolescents to ensure support for this finding, there are studies showing no significant difference between life satisfaction and gender (Arıdağ & Seydooğulları, 2018; Çam & Artar, 2014; Çivitci, 2007; Çivitci, 2009; Kabasakal & Uz-baş, 2013; Toprak, 2014; Tümkaya, Çelik and Aybenk, 2011; Ünal and Şahin, 2013). Accordingly, while explaining the absence of a significant difference between gender and life satisfaction, in line with the criteria defined personally by both male and female adolescents, can be explained by similar evaluations regarding how happy they are with their lives and differences between what they have and their expectations (Chen et al., 2017). Another point of view is that many common variables such as personality traits and living environment that affect life satisfaction may also lead to this result. Unlike the previous study, in some studies, the level of life satisfaction differs significantly according to the gender of the adolescents. Van der Laan et al. (2021) concluded that the level of life satisfaction during the pandemic period was lower in male adolescents, while Magson et al. (2012) and Goldbeck (2007) concluded that the decrease in life satisfaction in adolescents during the pandemic period was especially in girls. The significant difference between life satisfaction and gender in these studies can be explained by the possibility and the fact that men spend time in groups (Rose & Rudolph, 2006; Watkins, 2003), but this situation has been affected by quarantine measures. It is argued here that boys cannot go out and be together in groups, but because girls have higher ability to seek help, have more positive connections with their parents, and communicate more than boys, adolescent girls can achieve higher life satisfaction by using more tools to cope with the pandemic. (Sun and Stewart, 2007). On whether life satisfaction differs according to gender, one of the reasons why studies have produced various results is that it may be that the roles that gender perception imposes on individuals change according to the culture, the political and economic conditions of the society or individuals, or the education level of the individuals (Öngen & Aytaç, 2013). It has been determined that demographic variables and gender have little effect on life satisfaction during adolescence and childhood (Proctor, Linley, & Maltby, 2009). It can be said that larger-scale studies that consider demographic variables that may cause differences will be beneficial.

The fact that the hopelessness levels of adolescent students do not differ significantly according to their grade levels is in line with the results of the literature review (Ayan, 2017; Dereli & Kabataş 2009; Kula, 2008; Tümkaya, Çelik, & Aybenk, 2011; Vidinlioğlu, 2010). The reason why there is no significant difference between the grade levels of the adolescents and the hopelessness levels can be considered as the similar or common conditions and factors that cause the problems adolescents



encounter in the academic environment. According to the class variable, a statistically significant difference was found in the sub-dimensions of "inconsistency" and "regret", which are negative automatic thoughts (Sözlü & Serin, 2019). Batıgün (2005), Tekin and Filiz (2008), and Tümkaya (2005), unlike the study, found a significant difference between grade levels and hopelessness.

The fact that the life satisfaction levels of adolescent students do not differ significantly according to their grade levels is in line with the results of the literature review (Tümkaya, Çelik, & Aybenk, 2011). Huebner, Funk, and Valois (2006), in their study on 9th and 12th-grade students, did not find a significant difference in terms of life satisfaction of men and women.

In the study conducted by Ayan (2017), unlike the result of this finding, it has been determined that life satisfaction differs according to grade level and life satisfaction is higher in 9th-grade students. In the study conducted by Cavga (2019), unlike this study, life satisfaction was found to be higher in the 9th grade. Taş ne et al. (2022) showed that the reason for the significant difference between grade level and life satisfaction is that 9th-grade students have just entered adolescence, they have not yet experienced the stressful and challenging experiences of adolescence, and they have not confronted their families yet. In terms of hopelessness levels, according to the number of siblings of adolescents, a significant difference was found between the groups. Accordingly, it was concluded that the hopelessness levels of the adolescents with 5 or more siblings were higher than the hopelessness levels of the adolescents who did not have siblings. Similar studies have been found in the literature with the result of this study (Tümkaya, Aybenk, & Çelik, 2010; Serin, 2019; Fidan, & Serin, 2021). In line with these findings, the significant difference between the number of siblings and hopelessness can be explained by situations such as the division of parental interest, restriction of financial opportunities, and discrimination between siblings. Unlike the results of the study, Yerlikaya (2014) and Üngüren (2007) did not find a significant difference between the number of siblings and the hopelessness level of the participants.

When the level of life satisfaction is examined according to the number of siblings of the adolescents, similar to this study, studies were determined indicating that the number of siblings does not have a significant effect on life satisfaction levels (Cavga 2019; Çivitci, 2009; Çivitci, Çivitci, & Fiyakalı, 2009; Kılıçaslan, 2012). Regarding the lack of difference between the number of siblings and the level of life satisfaction, it can be said that family communication and interaction are similar in individuals with and without siblings, thus it has no effect on life satisfaction. Tunç (2020) determined that the level of life satisfaction of students differed between those with 1 or 2 siblings and those with 3 or more siblings, according to the number of siblings, and found that individuals with 1-2 siblings had higher life satisfaction.

There was no difference between the hopelessness levels of the adolescents participating in the study, according to their parents' being together (my parents are together / my parents are separated / my mother is not alive / my father is not alive / both my mother and father passed away). The fact that the results of the study conducted by Gür (2019), Ottekin (2009), Öztürk (2006), Ünal and Şahin (2013) indicated no difference between the level of hopelessness and the parents' absence and togetherness status of the participants support the result of the current study. When the obtained findings and literature review results are compared, different results are seen and it is seen that the hopelessness levels of adolescents increase after divorce and the hopelessness levels of adolescents with divorced parents are high (Wood, Repetti, & Roesch, 2004; Arıkan, 2014). There are studies that support the absence of any difference between the levels of life satisfaction of the adolescents participating in the study according to their parents' being together (my parents are together / my parents are separated / my mother is not alive / my father is not alive / both my mother and father passed away) (Öztürk, 2006; Ünal & Şahin, 2013). The family, the structure of the family, and the social support provided by the family are especially important in the development of adolescence. However, the results of this research have shown that whether the parents are together or not, the attention and support of the parents do not negatively affect the life of the individual. Unlike this study, there is a relationship between the level of



life satisfaction and divorced adolescents (Çivitci, Çivitci, & Fiyakalı, 2009), while another study found that as the union of parents of high school students increases, their life satisfaction also increases.

There was no difference between the groups in terms of hopelessness levels, according to the income of the families of the adolescents. Tümkaya, Çelik, and Aybenk (2011) did not find a significant difference between financial income and hopelessness level and supports the result of this study. Unlike this study, Çelikel and Erkorkmaz (2008), Gündoğar et al. (2007), Ozmen et al. (2008), Tekin and Filiz (2008), Tekin and Taşgım (2008), Tokuç et al. (2009), Tümkaya, Çelik, and Aybenk (2010), Uz Baş and Kabasakal (2013), Üngüren and Ehtiyar (2009), Şahin (2009) found a significant difference between the family's income and hopelessness levels and it was stated that the level of hopelessness decreased as the income increased. It has been suggested that income level is an important variable in terms of future security as the reason for the significant difference in the studies.

A significant difference was found between the groups in terms of life satisfaction levels, according to the financial income status of the families of the adolescents. It was observed that the level of life satisfaction of the adolescents who stated that their families had an income of 4.000-6,000 TL was lower than the level of life satisfaction of the adolescents who stated that their family had an income of 8.000-10.000 TL, and a significant difference was found between the groups. In addition, it was determined that the life satisfaction levels of the adolescents who stated that their families had an income of 4,000-6,000 TL were lower than the levels of life satisfaction of the adolescents who stated that their families had an income of 10,000 TL or more, and a significant difference was found between the groups. In the literature, studies have been reached in harmony with the result of this study (Ayan, 2017; Tümkaya, Çelik, & Aybenk, 2011). Students with different income levels have different qualities of life. Adolescents with a high-income level may experience dissatisfaction because they can get everything easily and early as a result of their very good financial means. The fact that middle-income adolescents experience processes such as effort and effort in all their goals in life may have caused them to look at life in a different and more conscious way and to have higher life satisfaction. The high life satisfaction of students with high family incomes can be explained by the excess of opportunities and possibilities. According to the results of the study, it is seen that there is a negative significant relationship between hopelessness and life satisfaction.

According to the data obtained from the hopelessness and life satisfaction scale, it was concluded that no significant difference was observed according to gender, grade level, separation or separation of parents, death of one of the parents, or both being alive and living with their families. In addition, as a result of the research, no significant difference was found in the level of life satisfaction of the adolescents according to the number of siblings, a significant difference was found in the levels of hopelessness, and it was determined that the adolescents with five or more siblings were found to be higher than the adolescents who had no siblings, it has been concluded that adolescents with lower income levels have less life satisfaction. As a result, according to the data obtained, it was understood that as the number of siblings of the students increased, the hopelessness levels of the students increased and the life satisfaction levels of the adolescents with low-income levels decreased.

The results of the research show that after the pandemic related restrictions, the negative effects on adolescents in the economy and social areas have negative effects on the level of hopelessness and life satisfaction. This case reveals the importance of taking preventive, preventive, and therapeutic measures for the mental health of individuals during and after the pandemic. In this respect, the results of the research are important in guiding policy makers, field workers, and researchers about the measures to be taken.

Suggestions

Individuals in adolescence can experience positive personality development through the learning experiences they will encounter in the educational environment. In this context, in order to prevent students from being affected by emotional and cognitive factors such as hopelessness, educational programs can be organized within the scope of personal, social, and guidance related to these elements,



and consultation studies can be carried out to ensure that teachers in the school have a common understanding and attitude. Adolescents' life satisfaction can be increased by providing educational information about leisure time activities aimed at increasing the quality of life of adolescents.

Seminars can be organized for families about hopelessness and parent education, which are among the psychological problems experienced by adolescents and adolescents, and families can be informed so that they can acquire positive personality traits more easily and quickly. Encouraging adolescents to be more optimistic about their future plans and all the possibilities they may have can overcome their feelings of hopelessness. In conclusion, this study reveals that as adolescents' life satisfaction decreases, their hopelessness decreases. In this sense, it is possible to contribute to reducing the risky behaviors and hopelessness of adolescents with school-based prevention studies that focus on increasing the life satisfaction of adolescents.

Ethics and Conflict of Interest

The authors have acted in accordance with ethical rules at all stages of the research, and there is no conflict of interest among the authors.

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THE IMPORTANCE OF PARENTAL INVOLVEMENT IN THE ORGANIZATION OF SCHOOL ACTIVITIES

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Abstract

To achieve the most satisfactory school results school must activate all its capacities and factors within its work system. An important factor in the results of school work is the parents. Parental involvement in school affairs is very significant in school outcomes. School and family constitute two important factors in the education and upbringing of the younger generation. The family has a significant role and potential in the effectiveness of educating children. Often parents are not aware that they are playing a fundamental role in their children's development through active involvement in school affairs. The purpose of the research is to reflect the real situation of parents' involvement in school affairs and to provide recommendations that help raise awareness of both parties about the importance of parent-school cooperation in the educational process. This study also aims to highlight the level of knowledge that parents have about their rights about organizing and participating in school affairs. The research was conducted through a quantitative approach with parents (N=60) through questionnaires and through a qualitative approach, interviewing school principals examining the challenges and needs for improving school-family partnership and the role and opportunities of both parties towards a cooperation more effective.

Keywords: School, parents, students, school-family partnership.

INTRODUCTION

The cooperation of the school with the parents starts in the first years of schooling and accompanies the student throughout his school experience. The need for cooperation of parents with the school is a constant request that is affirmed as a necessity by both the school and the parents. Building and developing the school-family partnership is one of the key factors for improving the quality of school service.

Attendance of parents in school affairs is quite significant in school outcomes. Recent scientific studies have proven that the involvement of parents is very important in the process of teaching children in their opinion about school and their aspirations. Theoretically, parental involvement is conceived in many ways. Some authors focus on the goal or outcome while others focus on the role of parents (Epstein, 1995).

Children are more successful learners if their parents are involved in school and encourage their children to learn at home, regardless of their educational or social level. Despite the positive developments, the level of parental involvement in school life and school-family-community cooperation is still very low. The importance of the involvement of parents in the process of children's learning, speaks of the scientific studies that have been done. Their involvement matters in their learning, in their thinking about school, and in their aspirations. Children are the most successful students throughout the school if their parents are involved in



the school and encourage learning at home, approximately by their educational or social level (Epstein, 2001). On the importance of school collaboration with parents Muller (2009) argues that this collaboration is resizing the boundaries and dimensions of education as an experience, creating conditions for children to be more effective in learning. The author Graham (2011) emphasizes that the involvement of parents and the participation of parents in the education of their children constitutes the notion of school-family cooperation. Therefore, parental involvement is a term applied as an essential term of home, school and community participation in activities that support child development, while parental involvement belongs to the context of parental involvement by reinforcing parental involvement in the decision-making role of programs managerial and administrative education. Fullan (2001) emphasizes that the closer parents stay to their child's schooling, the greater the impact on the child's development and school achievement. Further, this author emphasizes that parents and other community members are important resources and of great value (Fullan, 2001). The school-parent partnership improves school curricula and the school climate, provides services and support to families, enhances parents' skills and leadership role, creates a link between parents in the school and the community, and assists teachers in their work. Above all, such partnerships are created to help children succeed in school and in life (Grossman, 1999).

The importance of involving parents in school affairs

According to scientific research, cooperation programs and school-family-community partnerships and teacher practices regarding parental involvement have quite positive effects on parents' ability to help their children throughout the school years; in parents' assessment of teachers' skills and quality of teaching; in the opinion of teachers about the opportunities for parents to help their children with homework and in the opinion of students about the school (Becker & Epstein, 1982).

In the last three decades some research and scientific studies have been done regarding the cooperation of the school with the parent community. These researches and studies have proved that the involvement of parents is very important in the process of children's learning, in their opinion about school and in their aspirations. Children are the most successful students throughout school if their parents are involved in school and encourage learning at home, regardless of their educational or social level (Epstein, 2001).

Partnership school-family-community can improve school curricula and the school climate, provide family services and support, enhance parenting skills and leadership, connect families with others at school and in the community, and assist teachers with their work. However, the main reason for creating such partnerships is to help all students succeed in school and later in life. When parents, teachers, students, and others see each other as partners in education, it forms a caring community around students and begins its work (Ariel & Vijayendran, 2010).

The partnership of the school with parents is very necessary, therefore in order to have mutual cooperation, the school is the one that should initiate the communication first and strengthen the communication with the family and the wider community. The partnership should be realized especially for school programs, the teaching-educational process as well as for all other aspects such as school regulations, educational reforms, etc. Home-school-community communication should be done in a diverse, clear and productive way. The lack of communication between these actors seriously hinders other aspects of the involvement of parents and the community in school life. To ensure the most effective communication with parents and the community, it is recommended to develop a communication plan or strategy (Walker & Hoover, 2008).

Through the cooperation of parents with the school, all parties benefit, such as children, parents as well as teachers. Student benefits:

- Improves school behavior
- Informs and understands school policies-rules regarding the way of behaving, attending classes;



- Increases the sense of responsibility for learning.

Benefits of parents:

- Improves skills to support student learning;
- Increases satisfaction with education in general;
- React more quickly to their children's problems at school;

Benefits of the school teacher:

- Improves teacher-parent relations;
- Strong sense of teacher effectiveness;
- Improves skills to support students' skills.

METHOD

For the realization of the research, the qualitative method approach was applied through the interview with the principal as well as the quantitative approach through the survey technique with the parents. Sample selection was done based on the approach from random samples by exploring and interpreting the experiences and perceptions of the research participants. In this case, the number of parents participating in the research is 60 parents in three centers, which means 20 parents in each center, while 6 principals of primary schools from these three centers were interviewed. Research instruments have served to conduct the research. In our study research instruments are: The questionnaire developed with parents, as well as the interview protocol that served as an instrument to conduct interviews with school principals.

Presentation and Analysis of Results

Starting from the key dimension - "The importance of parental involvement in the organization of school activities" all questions address the participation of parents in the organization of school affairs.

From the answers of the principals we can conclude that the participation of parents in school affairs is the orientation to current policies and their implementation by the school institution.

The so-called activities, initiatives, collaborations undertaken by the school, according to the interviewed principals are satisfactory, against various challenges.

From the interview data, it is understood that the school for the well-being of students and their achievements takes several initiatives to promote parental participation. These promotion initiatives are done in two ways, direct and indirect. The school implements various forms of promotion for cooperation with students' parents and the community, both through direct communication with the public at events, and indirect forms which are realized on radio and social networks. While, the cooperation between students, teachers do through teamwork with competitions and free activities. Collaboration with parents is done by organizing various meetings in the community, seminars, anniversaries, etc.

In order for the school to provide for the participation of the parents in the affairs of the school, it notifies the parents through public documents about the legislation which defines their rights, while for the information of the school regulation they also inform the parents.

According to the interviewed principals, the presence of parents in school activities is an interest in the progress of the learning process, as well as the exchange of ideas for lesson plans between the school and parents.

Director also showed that parents are interested in their participation in school and are active in various activities undertaken by the school.



In the quantitative analysis, regarding the question that the active involvement of parents in school activities is necessary, most of the surveyed parents answered with full agreement 53.3%, a part of the surveyed parents answered 31.7% agree 31.7% and a part very small respond with disagree about 3.3%.

In general, 63.3% of parents surveyed fully agree that the mutual parent-school cooperation affects the highest success of the child in school. But there are parents who disagree 6.7% that mutual parent-school cooperation affects the child's success in school.

Whereas about the question whether schools offer opportunities for parents to participate in the development of new strategies, 31.7% partially agree also the same percentage answered 31.7 who disagree that the school offers opportunities.

Parents think that the organization of activities by the school to provide counseling services to parents, increase their participation in school affairs is different. Somewhere half of them agree that organizing activities to provide counseling services to parents increases their participation in school affairs, while 33.3% partially agree and 6.7% disagree.

In the question, does it improve the quality of school decision-making at the level of cooperation with parents', 38 parents or 63.3% stated that they fully agree and 11 parents are or 18.3% stated that they agree. It is worth noting that a small number of parents have stated that they do not agree that decision-making at the school level in cooperation with parents improves the quality of school

Conclusion and Recommendations

Based on research findings, it has been managed to identify dias conclusions divided into specifics treated, according to the purpose of the research. In the pedagogical aspect, the pedagogical role of parents is addressed and in this context the importance of creating a culture of family-school cooperation.

From our research we find that the considerable majority of parents and principals think that the involvement of parents in school affairs is important for the learning process of children in school.

The results showed that the challenges of involving parents in school affairs are evident and steps need to be taken to overcome them.

However, precisely the non-involvement of parents in school activities not only complicates the realization of educational objectives but also leaves traces of lack in the development of the child.

An important role in this research has been given by school principals and from their answers we have also noticed that they also attach great importance to the involvement of parents in the educational process. They have a very clear picture that the involvement of parents in school affairs is important for the learning process of children in school and for the success of children in general.

Therefore finally we found that:

- Almost all participants as parents as well directors, think that they have genuine cooperation with each other and give sufficient contribution regarding their approach in this regard.
- Parents have little information about the possibilities of their involvement in school affairs.
- However, parental involvement should be based more on 'invitations' from the school than on the parents' own initiative.
- From the results of this survey, school principals do not have a strategy for involving parents in school affairs.
- Respondents said that it is necessary to consult with the parents' council, but expressed reservations about the quality of meetings with parents organized by the school principal and teachers.



- This speaks for the need to set some norms of communication with parents, as well as to train staff to establish effective communication that is in function of improving teaching and learning.
- Parents also think that their involvement in school activities brings higher achievements in the child's success in school.
- While, the fact that school principals have a very positive attitude towards the idea of providing opportunities for parents to elaborate on school policies is gratifying.
- The awareness of parents to get involved in the school life of their children makes them more active and become part of the decisions made.
- To be more accessible in school life, parents should also apply different forms of cooperation.
- The so-called activities, initiatives, collaborations undertaken by the school, according to the principals interviewed satisfactorily, against various challenges.
- From the interview data, it is understood that the school for the well-being of students and its achievements, takes several initiatives to promote parental participation.

From the research results we can recommend that:

- Should organized special trainings on forms of partnership, their importance and their planning and implementation. Parents have very little knowledge of contemporary literature on the subject.
- Implement various forms of parental involvement despite the opinion that meetings with parents are organized by the school in a systematic way.
- The school should develop an organizational policy such that parents are given special importance in making decisions and their voice is heard.
- In information meetings with parents the information is given generalized and this is not enough for parents need more detailed data about their child.
- Director must develop procedures for meetings with parents that determine the dynamics, preparation and flow of such meetings.
- Must to practice both group meetings and individual meetings with parents.
- Teachers should be trained to manage meetings of different features and put them in the function of advancing teaching and learning in school.
- Schools should be engaged in informing parents about their role in the school, as well as in enabling them to exercise such a role.
- Parents need more support from the school to be able to help their children improve their learning outcomes.
- Parents should be given materials that guide them in this regard, while in certain situations information sessions or training for parents should be organized.
- To be applied by the information school and the call for cooperation through media, internet, telephone, letters, leaflets and other informative materials.
- To set the agenda of school-parent cooperation at the beginning of the school year and to publish this on the school bulletin board, local media, local magazines, etc.
- Parents should visit the MASHT websites and get acquainted with the educational legislation which regulates their participation in school activities.
- Parents should express interest in school matters even if they do not receive any invitation in advance from the school, as this helps the quality of learning and well-being of their children.
- Parents' participation in school activities should be included in current education policies and implemented by school institutions.



Ethics and Conflict of Interest

We declare and confirm that we have acted in accordance with ethical rules throughout the entire research and that there is no conflict of interest between authors.

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