AN EXPLORATORY STUDY ON MENTAL HEALTH AMONG PRE-PRIMARY STUDENTS

Thesis submitted for the Degree of

DOCTOR OF PHILOSOPHY IN EDUCATION

By

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2023

DECLARATION

I, **Reshma P. M.**, do hereby declare that this thesis entitled **An Exploratory Study on Mental Health among Pre-primary Students** is a bonafide record of the research work done by me under the guidance and supervision of **Dr.Vasumathi T.**, Assistant Professor, Department of Education, University of Calicut, Kerala, for the award of the degree of Doctor of Philosophy in Education. I also declare that this thesis or any part of it has not been submitted by me for the award of any other Degree, Diploma, Title or Recognition before.

Calicut University
20/11/2023

Reshma P. M.
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Certificate

I, **Dr. Vasumathi T.**, do hereby certify that this thesis entitled **An Exploratory Study on Mental Health among Pre-primary Students** is a record of bonafide study and research carried out by **Reshma P. M.**, under my direct guidance and supervision. The thesis has reached the standards and fulfilled the requirements of the rules and regulations relating to the nature of the degree. The contents embodied in the thesis have not been submitted for the award of any other Degree, Diploma, Title or Recognition before.

Calicut University
20/11/2023

Dr. Vasumathi T.
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Reshma P. M.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Abstract

An Exploratory Study on Mental Health among Pre-primary Students

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Mental health plays a vital role in the holistic development of the child. Children are unable to learn at their best when they are physically and mentally unhealthy. Mental health is essential for children to develop cognitive and social-emotional abilities that shape their future. NEP (2020) highlights the critical role of mental health in education. The early years of life are crucial in determining one's mental health. During this period, the brain undergoes rapid growth and development. Studies related to the mental health of pre-primary students are very few in India, especially in Kerala. In this background, the present study focuses on the mental health of pre-primary students in Kerala.

The study employed an exploratory sequential mixed methods design to assess the mental health of pre-primary students. The study has three phases: the qualitative phase, the tool development phase and the quantitative phase. During the qualitative phase, pre-primary students' mental health indicators were explored through interviews with 218 participants consisting of pre-primary teachers, special teachers, and experts in psychology and education. Triangulation was accomplished through interviews with parents and participant observation by the investigator. The interview data were analysed thematically to identify the indicators of pre-primary students' mental health. In the tool development phase, a mental health scale was developed based on the themes generated from the interview data and through literature review. The sample consisted of 1000 pre-primary students. The mental health scale was standardised, and norms were established. In the quantitative phase, the mental health of pre-primary students was measured. The sample consisted of 870 pre-primary students. Based on the nor'ms, the levels of mental health of pre-primary students were categorised into three groups: low, average and high. The mean scores of mental health were compared based on categorical variables. The study also examined the interrelationship between mental health and its dimensions.

The seven themes generated from the thematic analysis were physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills. A mental health scale was developed and standardised in the tool development phase. The norms were established using percentile.The final mental health scale consisted of 75 items under seven dimensions. Further, the quantitative analysis of results revealed that, of the 3-4 age group students and the 4-5 age group students, 20.54% and 28.94% have low mental health, respectively. Among 3-4 age group students, comparison of mental health based on gender differs significantly. Among 4-5 age group students, comparison of mental health based on types of family, father's age, and mother's age differs significantly. The mental health and its dimensions show significant positive relationships among pre-primary students in age groups 3-4 and 4-5.The study has provided valuable insights into the mental health of pre-primary students, which in turn can aid the stakeholders and authorities in taking initiatives towards the development of effective interventions programmes.

Key terms: Exploratory study, mental health, pre-primary students

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പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികൾക്കിടയിലെ മാനസികാരോഗ്യത്തെക്കുറിച്ചുള്ള പര്യവേക്ഷണ പഠനം

രേഷ്മ പി. എം.
ഗവേഷക വിദ്യാർത്ഥിനി

ഡോ. വസുമതി ടി.
മാർഗദർശക

കുട്ടിയുടെ സമഗ്രമായ വളർച്ചയിൽ മാനസികാരോഗ്യത്തിന് വളരെയധികം പ്രാധാന്യമുണ്ട്. ശാരീരികവും മാനസികവുമായുള്ള അനാരോഗ്യങ്ങൾ കുട്ടിയുടെ പഠനവും ഭാവിജീവിതവും വെല്ലുവിളികൾ നിറഞ്ഞതാക്കും. ഒരു കുട്ടിയുടെ വൈജ്ഞാനികവും വൈകാരികവും സാമൂഹികവുമായ കഴിവുകൾ വികസിപ്പിക്കുന്നതിന് മാനസികാരോഗ്യം അത്യന്താപേക്ഷിതമാണ്. വിദ്യാഭ്യാസത്തിൽ മാനസികാരോഗ്യത്തിന്റെ നിർണായക പങ്ക് NEP (2020) ഊന്നിപറയുന്നു. ഒരു വ്യക്തിയുടെ മാനസികാരോഗ്യം നിർണയിക്കുന്നതിൽ ജീവിതത്തിന്റെ ആദ്യ വർഷങ്ങൾ വളരെ നിർണായകമാണ്. ഈ കാലയളവിൽ മസ്തിഷ്കം ദ്രുതഗതിയിലുള്ള വളർച്ചയും വികാസത്തിനും വിധേയമാകുന്നു. പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ മാനസികാരോഗ്യവുമായി ബന്ധപ്പെട്ട പഠനങ്ങൾ ഇന്ത്യയിലും കേരളത്തിലും വളരെ കുറവാണ്. ഈ പശ്ചാത്തലത്തിലാണ് കേരളത്തിലെ പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ മാനസികാരോഗ്യത്തെ കേന്ദ്രീകരിച്ചുള്ള പഠനം നടത്തിയത്.

ഈ പഠനത്തിനുവേണ്ടി പര്യവേക്ഷണ സീക്വൻഷ്യൽ മിക്സ്ഡ് രീതിയാണ് ഉപയോഗിത്. മൂന്ന് ഘട്ടങ്ങളിലായാണ് ഈ പഠനം നടത്തിയത്: ഗുണാത്മകഘട്ടം, ടൂൾ വികസന ഘട്ടം, പാരിമാണിക ഘട്ടം. ഗുണാത്മകഘട്ടത്തിൽ പ്രീ-പ്രൈമറി അധ്യാപകർ, സ്പെഷ്യൽ അധ്യാപകർ, മനശാസ്ത്രജ്ഞരിലെയും വിദ്യാഭ്യാസ മേഖലയിലേയും വിദഗ്ധർ എന്നിവരുമായി അഭിമുഖം നടത്തിയതിലൂടെയാണ് മാനസികാരോഗ്യത്തിന്റെ സൂചകങ്ങളെ കണ്ടെത്തിയത്. രക്ഷിതാക്കളുമായി അഭിമുഖം നടത്തിയും പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളെ നിരീക്ഷിച്ചും മാനസികാരോഗ്യത്തിന്റെ സൂചകങ്ങളുടെ വിശ്വാസ്യത ട്രൈയാംഗുലേഷൻ പ്രക്രിയയിലൂടെ ഉറപ്പുവരുത്തി. ഗുണാത്മകഘട്ടത്തിലൂടെ ലഭിച്ച സൂചകങ്ങളുടെയും മാനസികാരോഗ്യവുമായി ബന്ധപ്പെട്ട പഠനങ്ങളുടെയും അവലോകനത്തിന്റെ അടിസ്ഥാനത്തിലാണ് പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ മാനസികാരോഗ്യം അളക്കുന്നതിനുള്ള സ്കെയിൽ വികസിപ്പിച്ചത്. നിലവാരവൽക്കരണത്തിനും മാനദണ്ഡങ്ങൾ സ്ഥാപിക്കുന്നതിനും വേണ്ടി 1000 പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ ദത്തം അവരുടെ അധ്യാപികമാർ മുഖേന ശേഖരിച്ചു. പാരിമാണികഘട്ടത്തിൽ പ്രീപ്രൈമറി കുട്ടികളുടെ മാനസികാരോഗ്യം വിലയിരുത്തുന്നതിനായി 870 പ്രീ-പ്രൈമറി കുട്ടികളെ തെരഞ്ഞെടുക്കുകയും അവരിൽ നിന്നും ഗുണാത്മകഘട്ടത്തിൽ ലഭിച്ച സൂചകങ്ങളുടെ അടിസ്ഥാനത്തിൽ വികസിപ്പിച്ച സ്കെയിൽ വഴി ദത്തശേഖരണം നടത്തുകയും വിശദമായി അപഗ്രഥിക്കുകയും ചെയ്തു.

തീമാറ്റിക് വിശകലനത്തിലൂടെ ഉരുത്തിരിഞ്ഞു വന്ന മാനസികാരോഗ്യത്തിന്റെ ഏഴ് തീമുകളായ ഫിസിക്കൽ ഫങ്ഷനിംഗ്, ഇമോഷണൽ കോംപീറ്റൻസ്, ഇന്റർ പേഴ്സണൽ റിലേഷൻസ്, ഇൻട്രാപേഴ്സണൽ സ്കിൽസ്, ബിഹേവിയർ റെഗുലേഷൻ, കൊഗ്നിറ്റീവ് ഫംഗ്ഷനിംഗ്, ലാംഗ്വേജ് സ്കിൽസ് എന്നിവ പഠനത്തിന്റെ ഗുണാത്മകഘട്ടത്തിന്റെ പ്രധാന കണ്ടെത്തലുകളിൽ ഒന്നാണ്. ഇങ്ങനെ കണ്ടെത്തിയ ഏഴ് തീമുകളെ അടിസ്ഥാനമാക്കി ടൂൾ വികസനഘട്ടത്തിൽ ഒരു മാനസികാരോഗ്യം അളക്കുന്നതിനുള്ള സ്കെയിൽ നിർമ്മിച്ച് നിലവാരവൽക്കരിക്കുകയും മാനദണ്ഡങ്ങൾ സ്ഥാപിക്കുകയും ചെയ്തു. ഈ ഏഴ് ഘടകങ്ങളിലായി 75 പ്രസ്താവനകളാണ് മാനസികാരോഗ്യം അളക്കുന്നതിനുള്ള സ്കെയിലിൽ ഉൾപ്പെടുത്തിയിരിക്കുന്നത്.

പ്രസ്തുത സ്കെയിൽ ഉപയോഗിച്ചുള്ള പഠനത്തിന്റെ അടിസ്ഥാനത്തിൽ, 3-4 പ്രായത്തിലുള്ള വിദ്യാർത്ഥികളിലും 4-5 പ്രായത്തിലുള്ള വിദ്യാർത്ഥികളിലും, യഥാക്രമം 20.54%, 28.94% പേർക്ക് മാനസികാരോഗ്യം കുറവാണെന്നു കണ്ടെത്തി. 3-4 പ്രായത്തിലുള്ള വിദ്യാർത്ഥികൾക്കിടയിൽ, ലിംഗഭേദത്തെ അടിസ്ഥാനമാക്കിയുള്ള മാനസികാരോഗ്യത്തിന്റെ താരതമ്യത്തിലും കാര്യമായ വ്യത്യാസമുണ്ട്. 4-5 പ്രായമുള്ള വിദ്യാർത്ഥികളിൽ കുടുംബത്തിന്റെ തരം, അച്ഛന്റെ പ്രായം, അമ്മയുടെ പ്രായം, എന്നിവയെ അടിസ്ഥാനമാക്കിയുള്ള മാനസികാരോഗ്യത്തിന്റെ താരതമ്യത്തിൽ കാര്യമായി വ്യത്യാസം കാണാനായി. 3-4, 4-5 പ്രായത്തിലുള്ള വിദ്യാർത്ഥികളിൽ മാനസികാരോഗ്യവും അതിന്റെ ഘടകങ്ങളും തമ്മിൽ കാര്യമായ ധനാത്മകബന്ധങ്ങൾ കാണിക്കുന്നു.

പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ മാനസികാരോഗ്യവുമായി ബന്ധപ്പെട്ട് ഒരു ഉൾകാഴ്ച നൽകുന്നതിന് ഈ പഠനം സഹായകമായിട്ടുണ്ട്. ഈ പഠനഫലങ്ങളുടെ അടിസ്ഥാനത്തിൽ വിദ്യാഭ്യാസമേഖലയിൽ പ്രവർത്തിക്കുന്നവർക്ക് പ്രീ-പ്രൈമറി വിദ്യാർത്ഥികളുടെ മാനസികാരോഗ്യം വർദ്ധിപ്പിക്കുന്നതിനുള്ള നയങ്ങളും പദ്ധതികളും ആസൂത്രണം ചെയ്യാൻ സാധിക്കും.

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Chapter- 1
INTRODUCTION

- Need and significance of the study
- Statement of the problem
- Definition of the key terms
- Variable of the study
- Objectives of the study
- Hypotheses of the study
- Methodology
- Scope and delimitations of the study
- The organisation of the research report

INTRODUCTION

> *"As early experiences shape the architecture of the developing brain, they also lay the foundations of sound mental health. Disruptions to this developmental process can impair a child's capacities for learning and relating to others – with lifelong implications"* (Center on the Developing Child, 2013, para.1).

Education is essential to bringing forth children's innate abilities and helping them reach their full potential. Through education, children are given the appropriate opportunities and a nurturing environment that fosters physical, emotional, social, cognitive, linguistic, and moral development. Education is critical in shaping children into well-rounded individuals; it helps them to think critically and express themselves effectively. It is a critical factor to have future success and numerous opportunities in life (Al-Shuaibi, 2014). A strong foundation of Early Childhood Care and Education (ECCE) begins at age three, which aims to promote excellent overall learning, development, and well-being (National Education Policy [NEP], 2020).

Early childhood is crucial because children's brains develop rapidly during the first eight years of life. Providing top-notch care may enable children to realize their greatest potential. It can provide the groundwork for learning and academic success, social-emotional learning, economic productivity, and excellent health and nutrition (UNESCO, 2023a). A child's developing brain is very malleable and flexible throughout these formative years because of the billions of linked neuronal networks that are created by the interplay of experience, environment, and heredity. Children require a stimulating environment, a nutritious diet, and social relationships with caretakers for optimum development of the brain. Children's interactions with

their surroundings cause their brains to develop at every moment. During the early years of life, the establishment of more than one million brain connections occurs every second; this pace of development is unrepeated (UNICEF, 2023).

The prenatal and childhood are mostly responsible for establishing the structure of the brain, and as time passes, neural networks continue to grow and become more sophisticated. The pre-primary stage marks the full development of children's basic sense and perception processes, although the memory, decision-making, and emotional systems of children continue to develop throughout childhood. But many of these skills have their roots laid during the formative years (Tierney, 2009). Early childhood is a period of both immense opportunity and extreme risk. Early experiences have a profound effect on a child's brain development and provide the foundation for success in life, subsequent learning, good health, and positive behaviour. A child's experiences in the initial years of life impact their brain development, either positively or negatively. Children have the greatest need for affection and attention to develop into healthy and contributing members of society. However, many nations ignore the importance of the optimum development of children in their formative years (Kouser & Popat, 2022).

The National Early Childhood Care and Education Policy 2013 emphasises the Government of India's commitment to offering integrated services for the comprehensive development of all children from conception to six years. Critical brain development periods affect physical and mental health pathways and behaviours throughout life. During the initial phases of life, deficits have significant and long-lasting adverse effects on human development (Ministry of Women & Child Development, 2013).

Mental health is defined as "a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and

contribute to their community" (World Health Organization [WHO], 2022a, para.1). People with mental illness experience humiliation, isolation, and discrimination from society and also face infringement of their human rights. Since mental health issues affect society as a whole rather than just a tiny fraction of it, everyone should be concerned (WHO, 2022a; Wu et al., 2014).

The early years of life have a significant impact on mental health. During this time, the brain grows and develops quickly. Children acquire cognitive and social-emotional skills that are essential for assuming adult responsibilities in society and have an impact on their mental health in the future (WHO, 2023). Since mental health issues can arise at any age and persist into adulthood, children and adolescents with mental health issues are a particularly vulnerable population that needs appropriate attention and care (Kessler et al., 2007; WHO, 2005).

Children's development and overall well-being are influenced by the environment in which they are raised. The risk of mental health issues is increased by early negative experiences in homes, schools, societies and online environments, such as being exposed to violence, the parent or other caregiver's mental illness, being bullied, or living in poverty. Long-term consequences of neglecting children's mental health and psychosocial development include less opportunity for adults to have satisfying lives. WHO collaborates with member states to design and carry out multisectoral, evidence-based, and human rights-based initiatives that aim to control mental health issues, foster mental health, and offer mental health treatment for children, adolescents, and their families (WHO, 2023).

Children's active social participation depends on their mental health (WHO, 2005). A child's mental health depends on attaining developmental and emotional milestones, developing positive social skills, and overcoming obstacles. Mentally

healthy children can function effectively at home, school, and society. Furthermore, their standard of living is better (Centers for Disease Control and Prevention [CDC], 2023a). To lay a strong foundation in childhood, providing the child with love and attention is essential. The pre-primary stage is the crucial period to start supporting mental health, as the child separates from the family and mingles with teachers, peers and other individuals. The early life experiences can help lay the groundwork for a child's development of sound mental health.

Mental illnesses in children are generally defined as significant variations in the way children typically learn, behave, or manage their emotions. These variations cause anxiety and complicate day-to-day work. Many children frequently experience fear, anxiety, or disruptive behaviour. If a child's symptoms are severe and persistent, which affect their capacity to learn, play, or live at home, a mental illness may be suspected. Being mentally healthy involves more than just not having any mental illnesses. There may be differences in the developmental stages of children without mental illness. Furthermore, children with the same diagnosed condition would have varying development, coping strategies, and quality of life. Understanding particular mental illnesses or viewing mental health as a spectrum will enable us to assess children's progress (CDC, 2023a).

Even under ideal circumstances, children's behaviour and emotions might change abruptly and often. All children occasionally struggle to sit quietly, pay attention, or engage with others. They may also experience sadness, anxiety, impatience, violence, or other emotions. Usually, they are merely normal development phases. For other children, though, these behaviours can point to a more serious problem. Anxiety disorders, post-traumatic stress disorder, autistic spectrum disorder, attention-deficit/hyperactivity disorder, depression, eating disorders, and other mood

disorders are among the mental illnesses that can affect children. If certain mental health conditions are not addressed, children could not reach their full developmental potential (National Institute of Mental Health [NIMH], 2021). Childhood is a crucial time to improve mental health because almost all mental health issues begin in the early years, and almost all of them last into adulthood (Garcia-Carrion et al., 2019; Kessler et al., 2005).

Need and Significance of the Study

In the present scenario, mental health is of utmost importance and essential to overall health and well-being. Connectivity, functionality, coping skills, and overall well-being are all signs of sound mental health. According to WHO (2022a), “Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress” (para. 2). This definition underlines the positive state of one's mental health. A mentally healthy child can succeed in their life and achieve the full extent of their abilities. Mentally healthy child lay the groundwork for their holistic development and nurturing. The NEP (2020) underline the significance of mental health to support children's physical, social, and emotional well-being.

Raising happy, healthy children in our fast-paced, technologically-driven society may be difficult, particularly in the early years. The formative years are crucial for developing the abilities required for success in adulthood. According to NEP (2020) over 85% of a child's brain development occurs around six years, highlighting the critical need for early brain stimulation and care for normal brain development. Early life is a critical time for education since it fosters children's growth and establishes the foundation for their social, emotional, and cognitive

development. The child's early experiences impact their mental health, physical health, and academic performance in the long run.

In early childhood, mental health is considered as children's healthy emotional, behavioural and social well-being. NEP (2020) claims that children with psychological and physical illnesses cannot learn well. Through this, NEP highlighted the critical role of mental health in education. Pre-primary children's mental health is frequently disregarded or underestimated, despite the fact that it has a big influence on their growth and wellbeing. For children to make the move from home to school, the pre-primary years are critical.

Children who are mentally ill may struggle at school, at home, and while making friends. They may even be more likely to commit suicide or self-harm. These issues could lead to future behavioural problems, academic challenges, physical health problems, and decreased productivity. Anxiety and depression are common mental health conditions resulting in poor academic performance, behavioural problems, and absenteeism (Richardson et al., 2012). All children will have the opportunity to develop and realise their full potential if appropriate interventions are made in response to the challenges that children face with mental illness. The mental health issues must be resolved as soon as it is feasible. Untreated mental health issues in children increase the likelihood that they may experience serious mental health issues. It substantially obstructs their ability to grow into contributing members of society (Wu et al., 2006). It is vital to prioritise the pre-primary students' mental health to give them a strong foundation in life and enable them to realise their full potential.

The timely achievement of developmental milestones, a child's social and emotional development, and their capacity to control their behaviour and use coping

mechanisms are all indicators of their mental health. Children who are in sound mental health do well in the community, school, and home (Hoagwood et al., 1996; Lippman et al., 2011; WHO, 2005; Keyes, 2002 as cited in Bitsko et al., 2022). Low mental health and patterns of severe, long-lasting symptoms can lead to mental illnesses, which can lead to dysfunction or impairment (American Psychiatric Association, [APA], 2022). Therefore, to reduce the effects of mental health concerns in children, early intervention is necessary.

In the US, according to CDC (2023b), one in six children aged between 2-8 has a mental, behavioural or developmental disorder. The National Survey of Children's Health (2016) reported that 17.4% of children aged 2 to 8 years had at least one mental health issue, and it is 18% and 25%, respectively, for the children of age groups 2-3 and 4-5. The most commonly diagnosed disorders were anxiety and Attention-Deficit/Hyperactivity Disorder (ADHD) (Bitsko et al., 2022). Boat (2015) indicated that 4.6% of children aged 3 to 17 in the US were diagnosed with conduct disorder (CD) or oppositional defiance disorder (ODD).

Globally, 10–20% of children and adolescents are reported to experience mental health issues. It is possible for adult mental health problems to start in early childhood. Most ODD and CD start at the age of five to fifteen., and between 4 and 11 years old, about 80% of all lifelong ADHD develop (Kessler et al., 2005; Kieling et al., 2011). Preschool is a crucial time for children's brain development and learning self-control. Preschool mental health problems make it difficult for children to fulfil their adolescent and adult life responsibilities (Bosquet & Egeland, 2006). Violence and antisocial behaviour were strongly linked to children's problem behaviours at age five. Furthermore, antisocial behaviour was more common in boys than in girls (Bor et al., 2004).

The theory of mind is especially important for social skill development in preschool. This is the period of time when social communication problems (peer connections, popularity, and pro-social behaviours) can be identified in the child. They could have always been there, or they might be the result of internalizing or externalizing problems. In recent years, social communication problems have emerged as the third most prevalent behavioural difficulties (Bao et al., 2016). According to the World Report on Violence and Health, early-life abuse and neglect have been connected to mental illnesses and emotional problems. The aforementioned difficulties have been significantly impacted on children's future life habits, encompassing issues like substance misuse, family violence, school dropout, and even suicide (Kieling et al., 2011; Krug et al., 2002).

According to 2011 census, 13.12% of India's population is under six years. According to Shastri (2009) over 50 million children in India suffer from mental health problems. The National Mental Health Survey states that 0.5% of children under the age of 14 commit suicide in India (National Institute of Mental Health and Neuro Sciences [NIMHANS], 2016). According to the State-Level Disease Burden Initiative Mental Disorders Collaborators (2020), one in seven Indians experienced a mild to severe mental disorder in 2017. A study on Lucknow by Srinath et al. (2005) indicate that 12.1% of children and adolescents experience mental illnesses. Behavioural problems (1.78%), developmental disorders (1.26%), pica (2.38%), and nocturnal enuresis (4.16%) were the disease-specific rates. An overall frequency of 12.5% was found in Bangalore. In children below 3 years, the average prevalence rate was 13.8%. The frequently reported diagnoses were mental retardation, behaviour problem, expressive speech disorder, breath-holding spells, and pica. A frequency of 12% was recorded for the age range of 4 to 16 years. Nonorganic enuresis, specific phobias, ADHD, stuttering, and oppositional defiant disorder were the most prevalent conditions (Srinath et al., 2005).

Studies conducted in West Bengal and Haryana found that the prevalence of child and adolescent mental health issues was 20.7% and 33.33%, respectively. The frequency of mental health among school children in Tamil Nadu was 33.7% (Malhotra & Patra, 2014). In Chandigarh, the total incidence rate is 6.33% in school-aged children (4-11 years), with a prevalence of 2.96% in the age group 4-5 years (Malhotra et al., 2002). Most children with mental health issues go undetected and are reluctant to ask for assistance or therapy. The COVID-19 pandemic has a significant effect on children's mental health. At least 50 million Indian children suffered from mental health problems prior to the epidemic, according to the Indian Journal of Psychiatry in 2019; 80–90% of them did not seek help. Wide disparities continue to exist between mental health support needs and availability (UNICEF, 2021).

The National Mental Health Survey, 2015–16, indicated that 11.36% people in Kerala had mental illness. The frequency rates of depressive illnesses were 2.5%, common mental disorders were 11%, and severe mental disorders were 0.4%. According to Jayaprakash and Sharija (2017), the three most common diagnoses given to children in the UNARV sample were conduct disorder (36.4%), particular learning disability (9%), and depression (5.8%). The National Crime Records Bureau (NCRB) determined in its 2014 assessment that 0.73% of children in Kerala below 14 years were considered to be in a significant chance of committing suicide (NIMHANS, 2016). The frequency of mental illnesses in India, particularly in Kerala, suggests that prompt action is necessary to address childhood mental health issues, which are a severe concern. These studies highlight the need of evaluating children's mental health in Kerala.

School may be the first and appropriate setting for recognising mental illness and emotional problems. Therefore, more studies have to be conducted to explore

further about the mental health of children in Kerala (Jayaprakash & Sharija, 2017). Since a child's pre-primary years are the most crucial in their lives, they deserve the best care. Moreover, primary involvement can have positive impact on child's future. Providing children with the solid foundation in life has a huge beneficial impact on their personal growth. Early childhood development interventions should be made available to all young children and families to guarantee that the most disadvantaged children may reach their full potential. To improve a child's growth and mental health, communities and schools may take use of their surroundings (Weist & Murray, 2008). This suggests that mental health concerns in children are grave matters that require prompt intervention. The pre-primary years are the most important in a child's life, hence the greatest attention should be given to them during this time. Additionally, a child's future may benefit from early intervention.

Early childhood development is multifaceted and advances quickly. Early childhood development measurement is a challenging endeavour in a developing subject with substantial information gaps, high urgency, and rapid change (UNICEF, n.d.). The literature review revealed a significant research gap in the area of mental health of pre-primary students, particularly in the context of Kerala. As a result, the investigator endeavoured to conduct an exploratory study on the mental health of pre-primary students in Kerala. Due to the unavailability of an appropriate mental health scale for pre-primary students, the investigator explored the indicators and developed a mental health scale to assess the mental health of pre-primary students in Kerala.

Statement of the Problem

The pre-primary years are the most crucial period for a child's development. A mentally healthy child can have a fruitful and productive life as an individual and for society. As a result, early identification of a mental health issue is essential to one's life. In order to have a better understanding of the mental health of pre-primary students, the

current study is being conducted. Since there has been no proper tool available, developing a scale to measure the mental health of pre-primary students can benefit to both academicians and other stakeholders. So, the investigator attempts to explore the indicators of pre-primary students' mental health, consulting the pre-primary teachers, special teachers, and experts in psychology and education. In addition, the study compares the mental health of pre-primary students based on gender, types of family, number of siblings, birth order, father's age, mother's age, father's education and mother's education. Also, examine the interrelation between mental health and its dimensions among pre-primary students. Hence, the problem of the study is stated as **An Exploratory Study on Mental Health among Pre-primary Students.**

Definition of the Key Terms

The key terms used in the statement of the problem are defined as:

Exploratory Study

"Exploratory research allows researchers to explore issues in detail in order to familiarize themselves with the problem or concept to be studied. Familiarization with the concept helps researchers in formulating research hypothesis" (Singh, 2007, p. 63-64).

Exploratory research is "a study that is conducted when not much is known about a particular phenomenon. In exploratory research, one typically seeks to identify multiple possible links between variables" (American Psychological Association [APA], 2023).

For the present study, the exploratory study refers to identifying the indicators of pre-primary students' mental health and developing a standardised mental health scale to assess their mental health.

Mental Health

According to WHO (2005, p.2) “children and adolescents with good mental health are able to achieve and maintain optimal psychological and social functioning and well-being. They have a sense of identity and self-worth, sound family and peer relationships, an ability to be productive and to learn, and a capacity to tackle developmental challenges and use cultural resources to maximize growth.”

Mental health in childhood means “reaching developmental and emotional milestones and learning healthy social skills and how to cope when there are problems” (CDC, 2023, para.1).

In the present study, mental health refers to pre-primary students’ timely achievement of developmental milestones and reaching optimum emotional, social, behavioural, and cognitive well-being.

The indicators of the mental health of pre-primary students were identified by consulting with pre-primary teachers, special teachers, and experts in psychology and education. A mental health scale for pre-primary students reported by teachers was constructed to assess mental health of pre-primary students.

Pre-primary

Pre-primary is "the period in a child's life or education that ordinarily precedes attendance at primary school” (Merriam-Webster, n.d.).

Student

A student is “one who attends a school” (Merriam-Webster, n.d.).

In the present study, pre-primary students are children aged 3-5 years who attend Anganwadis, Kindergartens, Montessori schools, and nursery schools in Kerala.

Variable of the Study

The following is the variable included in the present study:

- Mental health

Categorical Variables

The following are the categorical variables included in the study.

1. Gender
2. Types of family
3. Number of siblings
4. Birth order
5. Father's age
6. Mother's age
7. Father's education
8. Mother's education

Objectives of the Study

The present study has the following objectives.

1) To identify the indicators of mental health in pre-primary students.
2) To construct and standardise a mental health scale for pre-primary students.
3) To find out the levels of mental health among pre-primary students in age groups 3-4 and 4-5.
4) To compare the mean scores of mental health among pre-primary students in age groups 3-4 and 4-5 for the subsamples based on
   - Gender
   - Types of family
   - Number of siblings

- Birth order
- Father's age
- Mother's age
- Father's education
- Mother's education

5) To study the interrelationship between mental health and its dimensions among pre-primary students in age groups 3-4 and 4-5.

Hypotheses of the Study

The present study has the following hypotheses.

1. There exist different levels of mental health among pre-primary students in age group 3-4.
2. There exist different levels of mental health among pre-primary students in age group 4-5.
3. There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on
   - Gender
   - Types of family
   - Number of siblings
   - Birth order
   - Father's age
   - Mother's age
   - Father's education
   - Mother's education
4. There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on
   - Gender

- Types of family
- Number of siblings
- Birth order
- Father's age
- Mother's age
- Father's education
- Mother's education

5. There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 3-4.
6. There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 4-5.

Methodology

The study employed an exploratory sequential mixed methods design. The study has three phases: qualitative, tool development, and quantitative. The first phase explored pre-primary students' mental health indicators through interviews with pre-primary teachers, special teachers, and experts in education and psychology. In the second phase, based on the mental health indicators that emerged from the first phase and literature review, a standardised mental health scale for pre-primary students was developed, and norms were established. In the third phase, the levels of mental health of pre-primary students in age groups 3-4 and 4-5 were assessed, compared the mental health based on categorical variables and measured the interrelationship of mental health and its dimensions among pre-primary students.

Sample Selected for the Study

The study, which used an exploratory sequential mixed methods design, is divided into three phases: qualitative, tool development, and quantitative. The sample selected for each phase is given below.

Phase 1: Qualitative Phase

For the qualitative phase, 218 participants were selected. Interviews were conducted with fifty pre-primary teachers, fifty special teachers, and twenty-eight experts in psychology and education. In addition, thirty parents were interviewed and sixty pre-primary students were observed to ensure the credibility of data through data triangulation.

Phase 2: Tool Development Phase

In the second phase of the study, a mental health scale was developed based on the indicators identified through the qualitative phase and literature review. Subsequently, a mental health scale was standardised, and norms were established, for which 1000 pre-primary students were selected.

Phase 3: Quantitative Phase

The quantitative phase deals with both preliminary and major analysis. A sample of 870 pre-primary students was chosen for the analysis of data.

Tools and Techniques used for the Study

The following tools are used for the study.

1. Semi-structured interview schedule for pre-primary teachers
2. Semi-structured interview schedule for special teachers
3. Semi-structured interview schedule for experts
4. Semi-structured interview schedule for parents
5. Observation schedule for pre-primary students
6. General data sheet
7. Mental health scale for pre-primary students

The techniques used for the study.

1. Interview
2. Participant observation

Procedure of Data Analysis

The following are the analysis procedures used for the study.

1. Thematic analysis
2. Percentile
3. Descriptive statistics
4. Percentage analysis
5. Test of significance of the difference between means for a large independent sample
6. Analysis of variance
7. Pearson’s product moment coefficient of correlation

Scope and Delimitations of the Study

This study explores the mental health of pre-primary students in Kerala. Children's mental health is crucial in the present scenario. Children who have good mental health will have happy and fruitful lives. Early identification of mental health problems can lead to improvements in quality of life. The aim of the study is to identify the indicators of mental health of pre-primary students and to develop a mental health scale specifically for pre-primary students, as there has not been much research done on their mental health. In this study, mental health was perceived as a positive construct rather than the absence of mental health disorders. The study employed an exploratory sequential mixed method design, wherein the qualitative phase was conducted subsequent to the quantitative phase. Identification of the mental health indicators is based on the qualitative analysis. On the basis of these indicators mental health scale is developed, standardised, and norms were established. The mental health scale is used to gather and analyse data from pre-primary students. The study reveals the current state of mental health among pre-primary students in Kerala. As a result, the study's conclusions will support parents and pre-primary teachers in their efforts to intervene in their children's mental health issues at an early age. Furthermore, the awareness of mental health can help

policymakers, academicians, and other authorities to make well-established policies and programmes for pre-primary students.

The study is constrained for practical reasons and to maintain the focus within the parameters of the investigation. Only the pre-primary students from five districts were chosen. For the student to be included in the research, the teacher needed to have known them for at least three months. Children that fall outside the specified age range and children with diagnosed problems are not included in the sample. Only students attending pre-primary institutions such as Anganwadis, Kindergartens, Montessori schools, and nursery schools are included in the study.

The Organisation of the Research Report

The research report is organised into six chapters.

Chapter 1: This chapter begins with a brief introduction to the topic, the need and significance of the study, the definition of the key terms, the variable of the study, the objectives of the study, the hypotheses of the study, the methodology, the scope and delimitations of the study, and the organization of the research report.

Chapter 2: This chapter deals with a theoretical overview and review of the literature associated with mental health and its dimensions.

Chapter 3: Methodology includes the design of the study, the variable of the study, the sample selected for the study, the tools and techniques and procedure of data collection used for qualitative and quantitative phase and ethical consideration during the study.

Chapter 4: Details of the qualitative analysis, tool development, quantitative analysis and discussions and interpretations of the results are presented in this chapter.

Chapter 5: This chapter provides a study in retrospect, major findings, tenability of hypotheses, conclusions, limitations of the study, and suggestions for future research.

Chapter 6: This chapter covers recommendations and the educational implications of the study

Chapter 2
REVIEW OF LITERATURE

- Theoretical Overview
  - Early childhood development
  - Mental health
- Review of Related studies
  - Studies related to
    - Mental health of pre-primary students
      - Physical functioning
      - Emotional competence
      - Social competence
      - Behaviour regulations
      - Cognitive functioning
      - Language skills

REVIEW OF LITERATURE

The review of literature pertaining to the mental health of pre-primary students was discussed in this chapter. The chapter is organised into two broad sections namely theoretical overview and review of related studies. The theoretical overview presents the relevant theories and concepts related to the study. The review of related studies examined various aspects of the mental health of pre-primary students, which helped to identify the research gap in this area. The literature includes various research publications, such as theses, journals, and books published in India and abroad. The investigator thoroughly examined the findings published in different studies. Since they are more relevant to the present investigation, these studies are classified chronologically.

Theoretical Overview

Early Childhood: An Overview

A child's most remarkable period for growth and development is during the early years of life. Children's brains develop significantly during the eight years from birth, which is a critical window of opportunity for education. The formative years of a child's life can significantly influence their holistic development trajectory and offer an essential period of opportunity to set the foundation for their future. (UNICEF, n.d.b). When young children are secure, healthy, and learning successfully, they have a better chance of achieving their full developmental potential and participating fully in social, economic, and political life. By providing early childhood care and education, one can advance sustainable development, inclusive economic growth, and equitable and social justice (UNESCO, 2022).

Encouraging young children to fulfil their developmental potential is a human right and necessary for long-term growth. In light of the imperative need to provide children with the best start in life, the health sector has a significant role and

responsibility to support compassionate care for early childhood development and education as a way towards lifelong learning (WHO, 2020). Children need health care and nutrition, protection from harm and a sense of security, opportunities for early learning, and responsive care giving with parents and caretakers who love them to realise their maximum potential. All of this is necessary to nourish the growth of the body and nourish developing brains (UNICEF, n.d.a).

Building solid foundations can improved educational attainment, school performance, and society's social and economic standing. Early childhood development programmes prevent dropout and repetition and increase outcomes at all stages of education. Pre-primary education can give children a stable foundation on which all subsequent learning can be built, making each stage of education more efficient and productive (UNICEF, n.d.b). A child's early experiences can either provide a strong or weak foundation for their later learning, development, and behaviour. Neuroscience has shown that the environment affects the construction of the brain architecture. Early childhood care and education programmes help children become more ready for school (UNESCO, 2022).

Preschool education is one of the six core services provided by Anganwadis under Integrated Child Development Services. The Government of India adopted the National Early Childhood Care and Education Policy in 2013, recognising the value of investing in early childhood development, including early childhood education, and its impact on lifelong development and learning (UNICEF, n.d.c). According to NEP, 2020, "universal provisioning of quality early childhood development, care, and education must thus be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade 1 are school ready" (p.7). The three years of early education and early primary grades are offered as a learning continuum and are referred to as the school's cornerstone stage.

The National Education Policy 2020 and the National Early Childhood Care and Education (ECCE) Policy, which both advocate for the advancement of inclusive and equitable development and provide the opportunities for all children aged 3 to 6 for learning and SDG 4, Target 4.2, highlight UNICEF's priority of strengthening systems to improve the provision of quality early childhood education. The support includes school readiness and the transition of the child to early grade learning (UNICEF, n.d.c).

Aspects of Child Development

The early years are crucial for laying a solid foundation for children as they attempt to achieve their developmental milestones. Childhood is a period of care and instruction for humans. Child development spans the period from conception and prenatal life until sexual maturation (Mercer, 2018). Early patterns persist mostly unchanged throughout time. The first five years of a child's school experience are vital to forming the achievement drive. Early foundations have a long-lasting impact on a child's attitudes and behaviour (Hurlock, 1978).

Physical Development

Physical development is the progress of children's power over their bodies. Progress is characterised by an increase in skill and complexity of performance. Gross motor abilities and fine motor skills are the two types of motor movement (Neaum, 2019). A cephalocaudal and proximodistal pattern of growth governs physical development. In cephalocaudal growth, the lower parts of a child's body grow faster than the upper parts. The middle of the body develops faster than the extremities in a proximodistal pattern (Mercer, 2018).

Physical development affects children's conduct directly by determining what they can do and indirectly by influencing their attitudes towards themselves,

influencing their personal and social adaptations. Good health, nutrition, and disease immunisation make early growth cycles faster. Emotionally stable children grow faster than those who are not. Children vary widely in height if they are in same age, yet the growth pattern is consistent. Height proliferates for the first two years; by five years, it has doubled from birth. The pattern of weight gain is likewise nearly identical for all. The baby's birth weight has doubled at four months and tripled at one year. The average child weighs around five times their birth weight at age five. Persistent emotional problems create an overproduction of adrenal steroids, which impede pituitary growth hormone production. It inhibits growth spurts and prevents children from reaching full height. The children can achieve bowel control in 2 years and bladder control in 2 to 4 years (Hurlock, 1978).

Motor development refers to the acquisition of control over physical movements through the coordinated activity of nerve centres, nerves, and muscles. The child learns control over gross movements during the first 4 or 5 years of postnatal life (Hurlock, 1978). A three-year-old child possesses gross motor skills such as standing, walking, and running on tiptoe, walking backwards and sideways, having high spatial awareness, walking upstairs with one foot on each step, riding a tricycle, and using the pedals. Fine motor skills include threading large wooden beads into lace, controlling a pencil in the preferred hand, using scissors to cut paper, replicating simple shapes such as a circle, and creating a nine-brick structure. A 4-year-old child can acquire gross motor abilities such as developing a sense of balance, climbing play equipment, walking up and downstairs with one foot on each step, standing, walking, and running on tiptoe, and catching, throwing, bouncing, and kicking a ball. Fine motor abilities include the child building a tall tower of bricks and other constructions, grasping a pencil maturely, learning to do up buttons and secure zips, and threading little beads on lace (Neaum, 2019).

Emotional Development

Emotions play such a significant role in life that it is critical to understand how they develop and affect personal and social adjustments (Hurlock, 1978). Emotional development refers to a child's increasing ability to feel and express a wide range of emotions appropriately. Emotional responses to oneself, others, and our words and deeds are all included in this process. Development is the progression towards feeling and expressing emotions in ways that benefit our and others' well-being (Neaum, 2019). Although all children's emotional development follows a similar pattern, some differences exist. Maturation and learning influence emotional development. When children discover that their overt expressions of fear, anger, jealousy, or even grief serve as unfavourable social evaluations of them, they learn to control their emotional expressions. The peak of temper tantrums occurs between the ages of 2 and 4, after which they are replaced by more adult-like angry expressions such as sullenness and orneriness (Hurlock, 1978). Around the age of three, children can feel secure when they are away from their caretakers as long as they are with people with whom they became familiar when their caretaker were present, can wait for their needs to be met, are less rebellious and express themselves through language rather than physical outbursts, and still respond to distraction as a method of controlling their behaviour. However, they are ready to respond to reasoning and negotiating, they are starting to acquire proper behaviours for different kinds of social situations, and they adopt adult attitudes and moods. By age four, children seek comfort from adults when they are overtired, ill, or upset, can bear delays in getting their needs addressed, have purpose and tenacity, and have some control over their emotions (Neaum, 2019).

Sigmund Freud’s concept of stages of psychosexual development encompasses a series of age periods, each with significant motivations and

behavioural patterns related to different body parts. The first year of life is the oral stage, where enjoyment and motivation are related to oral behaviours such as sucking and food consumption. The focus shifts to waste elimination between the ages of one and three years, and this period is known as the anal stage. During this period, pleasure is related to the retention and elimination of faeces. Between the ages of 3 and 5, the phallic stage focuses on the genitals. At each level, emotion is focused on the vital concern of that developmental stage. Despite the biological emphasis, issues encountered throughout each phase may cause fixation on the issues of that stage, which will continue to rule the child's personality even as they enter the following stages. Later challenges or frustrations can cause regression to earlier-stage concerns and traits (Mercer, 2018).

Social Development

Social development refers to a child's ability to relate to others appropriately within their social environment. It entails the development of social skills as well as independence skills. Children's capacity to interact with other children and social play in groups improves as they learn social skills. Social play follows a developmental rhythm as well (Neaum, 2019). Children's learning and early social experiences, both inside and outside the home, play a vital role in determining whether they grow up to be social, non-social, or antisocial adults. Learning to behave in socially acceptable ways, fulfilling approved gender roles, and acquiring social roles are the three phases of socialisation (Hurlock, 1978). By three years old, children desire the approval of loved adults, can show affection for younger siblings, can share and take turns, enjoy pretend play, use dolls and toys to act out their experiences, may have imaginary fears and anxieties, and may exhibit some insecurity manifested as shyness, irritability, and self-consciousness. They can eat with implements, toilet themselves throughout the day, maybe dry at night, wash

their hands, and begin to wear clothes themselves without supervision. Around the age of four, a child can be highly sociable and talkative to adults and children, enjoy silly talk, have one particular friend, be confident and self-assured, play with groups of children, take turns, be often dramatic in their play-engage in elaborate and prolonged imaginative play, be able to feed themselves well, dress and undress, and wash and dry hands (Neaum, 2019).

Vygotsky emphasised the significance of children's social development. He argued that the relationships we have with other people shape who we are. The core of his research is the relationship between language and cognition, and he asserts that the basis of thought is language. The child's social and cultural experiences impact their language development, which is also our primary means of learning. In this sense, affluent and influential language produced in a social setting is critical to children's development (Neaum, 2019).

Social learning theory is a non-stage approach to social development. Social learning theorists and others have suggested that developmental stages are illusory occurrences that are only noticed because all societies require similar tasks of children of similar ages, such as mastering toilet training or being trusted to obey rules when they are not around adults. Due to the systematic application of community and family standards, social development events sequentially occur. According to social learning theory, social development happens when children notice and imitate the behaviours of older adults. According to proponents of social learning theory, social learning can impact aggression, prosocial behaviour, and gender roles. A sense of self-efficacy and mastery of the social environment motivates imitation and social learning, which can be combined with other experiences to promote social growth (Mercer, 2018).

Behavioural Development

As children grow and learn, their behavioural patterns alter. Young children evolve drastically in their first few years of life, which appears in their behaviours. It is an essential aspect of their continuous social and emotional development. Throughout childhood, children develop a broader range of emotions and behavioural responses to various situations and greater independence and control over their feelings and behaviours towards themselves and others, necessitating less reliance on external constraints on their behaviour. Children have established a strong self-identity and an increasing level of independence by three years and they become less anxious about parting and strangers. They frequently oppose efforts by caretakers to regulate their activity. They are ready to respond to reasoning and bargaining and can wait for their needs to be met. Children are less rebellious and use language rather than physical outbursts to express themselves, and have mood swings and extremes of behaviour. Children are impulsive and not easy to distract them from their wants, and are beginning to learn appropriate behaviour for various social settings. They can adopt adult attitudes and moods and want loved adults' approval. By age four, children have more physical and emotional self-control, have more settled feelings and are more balanced in their expression of them. They are more independent of their primary caretakers and more outwardly friendly and helpful. They are less adamant and can respond to reasoning, negotiation, and distraction. They can learn acceptable conduct for various circumstances, take turns, wait for their wants to meet, and blame others when they misbehave (Neaum, 2019).

According to behaviourist theory, children's learning ability depends on modifying their behaviour when using various behaviour management tactics such as rewards, encouragement, repetition, feedback, and reinforcement. Individuals' learning is incorporated into their experiences, develops over time, and then

integrates development. Edward L. Thorndike was a renowned behavioural theorist engaged in the scientific study of learning. The study explained how stimuli are linked to reactions. Thorndike's law of effect states that a response is strengthened if preceded by an enjoyable impact and is reduced if a disliking one follows it. According to the law of readiness, learning is more effective when an activity stimulates the nervous system. The exercise law states that the more frequently a response is repeated, the longer it will be remembered (Thorndike, 1906).

Behaviourism impacted early childhood education through habit training, a concept developed by Thorndike for use with young children. In kindergarten classrooms, habit formation became a crucial element. The studies also affected kindergarten teachers since he believed children had an innate tendency to form habits. He felt that good behaviours should be encouraged at a young age, while negative behaviours should be repressed so children do not have to unlearn them later in life. Early childhood special education has been impacted by behaviourism, especially when working with children who have significant mental problems. Special educators have used behaviourism theory to develop training programmes for disabled children (Saracho, 2023).

Cognitive Development

Cognitive development is involved with the formation of thought processes. It concerns how we acquire knowledge, organise, and apply what we learn. It comprises the development of conceptual and conscious cognition, memory, problem-solving, imagination, and creativity. Around the age of three, a child can match primary colours, classify items, though usually by just one criterion at a time, and develop their ability to express themselves through language. By age four, a child can sort with more categories, solve easy problems, add to their knowledge by

asking questions constantly, develop memory abilities, and include representative details in drawings (Neaum, 2019).

The Piagetian theory of cognitive development is the source of various concepts used in explaining cognitive development from infancy to adulthood. It is an organismic approach theory. The theory emphasises that maturation and the internal drive for skill practice are prerequisites for cognitive development. Cognitive development requires experience with events. Reflexes in newborns are the starting point for the biological process of cognitive development. Cognitive capacities, including reflexes, are schemas or methods of responding to the world. Schemas multiply and evolve when they are employed as a result of assimilation and accommodation. Piaget conceptualised cognitive development as a series of stages that follow each other in a predictable order. In the sensory-motor stage, cognition is still at a basic level of sensory stimulation, followed by movement (Mercer, 2018). Children absorb information primarily through their senses of sight and touch throughout the sensory-motor stage. Children use their imaginations to process information. They are egocentric. From 2 to 7 years of age, children develop language and use it to think and communicate (Neaum, 2019).

Language Development

Language is the primary means through which we think and communicate. Language development in children occurs in distinct sequential stages. The maturation of their sound-producing physiology determines the rate at which children progress in language. Though, it is also significantly impacted by their interactions in the home and community through they develop and acquire knowledge (Neaum, 2019). Speech is one of the various linguistic forms, and the utmost challenging skill to master because of its mental aspects. Speech helps

children's personal and social adjustment by satisfying their needs, attracting others' attention, and facilitating social relationships. It additionally provides a basis for evaluation by members of the social group and for self-evaluation, contributing to academic achievement and allowing children to influence the behaviour, thoughts, and feelings of others (Hurlock, 1978).

By the age of three, children's vocabulary increases rapidly, new words can be learned quickly, sentences are becoming longer and longer and more like adult speech, and children talk to themselves while playing to plan and order their play, which is evidence of children using language to think. Variation in style is usually well developed, and language can be used to report on what is going on, direct their own and others' behaviours, communicate ideas, and begin and sustain connections. Pronouns are commonly used appropriately, and queries are regularly asked. Antonyms are often confused. Around age four, children's vocabulary is extensive, new words are added regularly, longer and more complex sentences are used, and sentences may be joined to demonstrate an awareness of causes and relationships. Children can narrate long stories, including the sequence of events and play involves running commentaries. Children can ask questions, use language to share, take turns, collaborate, argue, predict what may happen, compare various options, anticipate, explain, justifying behaviour, create situations in imaginative play, reflect on their thoughts, and begin to articulate how others feel (Neaum, 2019).

According to Chomsky, the linguistic organ in the brain is like any other organ, and can get stronger with practice. Furthermore, it was inferred that the human brain contains a language acquisition device, an organ that grows, develops, and reaches maturity around the age of 12, after which it begins to decline and fade away, leading to the existence of a critical period (Chomsky, 2006; Indrayani, 2016;

Al-Harbi, 2020). A language acquisition device is recognised as a physiological portion of the brain that is specialised for language processing and is unrelated to other cognitive capacities. Chomsky believed that children have an innate ability to grasp and use language. Most notably, language acquisition was prioritised over learning, with the early years playing a crucial role in an individual's potential to reach high linguistic competence. Because all human languages have a fundamental and deep structure of universal grammatical rules that allude to the innate capacity of the human brain, children acquire the superficial grammar of a particular language (Al-Harbi, 2020; Indrayani, 2016).

Bio-Psycho-Social Aspects of Child Development

Child development is a process that can be understood through various aspects of bio-psycho-social development. Brain development is an essential factor, which influences a child's cognitive capacity, emotional regulation, and social skills. Another significant feature is the theory of mind, which refers to the capability to understand and infer the mental states of others, like as beliefs, desires, and intentions. Attachment theory is also crucial in child development since it emphasises how a child's interaction with their primary caretaker shapes their emotional and social development. Temperament and social theory are important in understanding how a child's personality and social behaviours develop.

Brain Development. The brain is biologically programmed to sustain survival and follows a predictable maturational development pattern. The essential structural components of the brain are similar, and the physiological processes are comparable. Each brain is unique in its actual design and function. Mind and brain are terms used interchangeably. However, the mind should be considered as the result of the brain's active processing of information flow. Individuality is defined through brain, mind, and body interactions (Rose et al., 2016).

The brain is split into two hemispheres, right and left, linked by an information highway called the corpus callosum. The corpus callosum permits communication between the two hemispheres, and it is thought that our perceptions and memories result from information processed on one side of the brain and shared with the other. The spinal cord constantly transmits messages from the muscles, internal organs, and senses to the brain. The information is decoded, prioritised, and combined with prior knowledge in the brain before being transmitted to the muscles and organs to inform a reaction. This information-switching occurs consciously and unconsciously, and it is a process necessary to our behaviours, whether we are awake or asleep, physically active and engaged or sitting quietly and day dreaming. The brain stem is where the nerves that go up and down the spinal cord meet the brain. It is involved in unconscious functions. The cerebellum is essential in integrating sensory information into the brain, channelling information to other parts of the brain, managing gross motor and fine motor functions, as well as attentional levels and problem-solving (Badenoch, 2008 as cited in Rose et al., 2016).

The cortex has a convoluted surface that increases the brain's surface area. The cerebral cortex is responsible for all conscious and voluntary conduct, including thinking, talking, reasoning, reading, writing, understanding language, perceiving, empathy, and planning (Carlson, 2007 as cited in Rose et al., 2016). The cerebral cortex has been divided into lobes with distinct roles. The occipital lobe controls visual information processing, such as shape and colour recognition. Furthermore, the parietal lobe controls sensory perception, attention, and language. The temporal lobe controls processing auditory information and integrating sensory information from other senses, while the frontal lobes, including the prefrontal lobes, are in charge of initiating and coordinating motor movements, problem-solving, thinking, planning, organising, the ability to attune to others and show empathy and compassion,

controlling impulsivity, regulating the body, calming fears, and emotional and personal development. The prefrontal and frontal lobes are the most evolved parts of the brain, controlling thinking, perception, planning, and language comprehension - all of which inform conscious actions and behaviours (Rose et al., 2016).

A neuron is the most basic type of cell present in the brain, and it links with other neurons to form neural networks known as the connectome (Seung, 2012). The number of neurons in a newborn child's brain is similar to that of an adult. However, the neurons of young children are immature in function and have little connection to their networks. As the brain develops, neural networks integrate, bringing the many areas of the brain together to function as a whole. Neurons cannot store energy and hence require a steady supply of nutrients and oxygen. Each neuron in the brain transmits information as electrochemical pulses. The secretion of neurotransmitters transports information across the synapse. The receiving dendrites subsequently take the information and pass it down its axon into its terminal, and the process continues in a chain reaction. A child's brain and connectome develop rapidly throughout the early years of life. Brain function is impacted by physiological development, genetic makeup, and interactions with the environment, and it is dependent on interpersonal relationships. As this implies, experiences in formative period are very crucial since the brain is rapidly developing and the basics of the mind are being established (Rose et al., 2016).

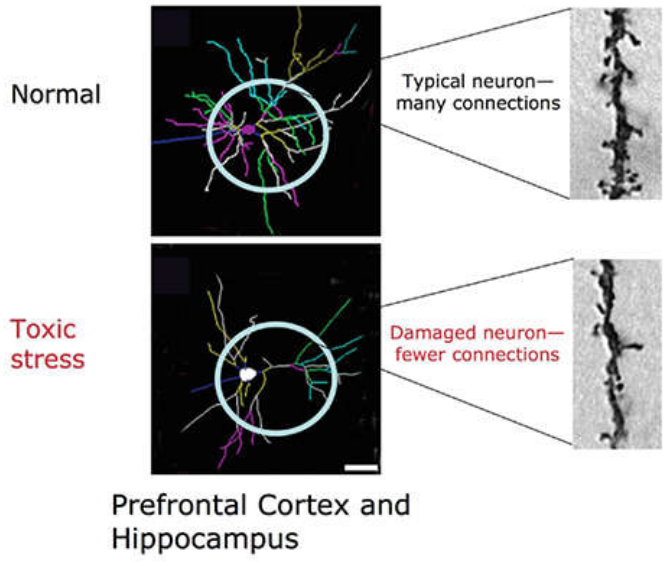
The brain's basic architecture is built through time, beginning before birth and continuing until adulthood. The experiences getting in the early period of life affect the progress of brain architecture, which offers the groundwork for all future life. Adverse events in early life can alter brain architecture, with harmful effects continuing throughout adulthood. Simpler brain connections and skills arise first, followed by more sophisticated circuits and skills. More than one million new brain

connections occur every second in the early years of life. After this time of high expansion, links are minimised through pruning, which makes brain circuits more effective. The first sensory pathways to develop are those for basic vision and hearing, followed by early language skills and higher cognitive functions (Centre on the Developing Child, 2007).

The neural connections are mostly occurred in early period of life and new connections formed throughout the life. But the unused connections continue to be pruned. Thus, determining the brain development in a particular age is not possible because of the continuous formation of connections in the brain. More importantly, the connections that form early provide a foundation for later connections that may be strong or weak. Toxic stress will activate the stress management mechanism of the body. Due to the lacking of balancing protection of adult, toxic stress is incorporated into the body through mechanisms that change the developing brain's architecture (Centre on the Developing Child, 2007).

Figure 1

Persistent Stress Changes Brain Architecture



Source: Radley et al. (2004); Bock et al. (2005) as cited in Center on the Developing Child, 2007.

Figure 1 shows that brains subjected to toxic stress have underdeveloped neural connections. Toxic stress impacts the developing brain's architecture, leading to lifelong learning, behaviour, and physical and mental health difficulties. Chronic, unending stress in childhood, such as acute poverty, frequent maltreatment, or severe maternal depression, can harm the growing brain. The positive stress is essential to healthy development. When the stress response is activated, the body undergoes various physiological mechanisms that will prepare the body to cope with a threat. Toxic stress occurs when these responses are active at high levels for extended periods without the assistance of supportive connections. Toxic stress can hinder the formation of synaptic connections, particularly in regions of the brain assigned to higher-order skills (Centre on the Developing Child, 2007).

Attachment Theory

Attachment theory is fundamentally a relational process in which one person forms a solid affectionate bond with another (Rose et al., 2016). Attachment theory, developed by John Bowlby and later by Mary Ainsworth, explains why children learn best in loving, safe, and secure relationships (Neaum, 2019). This theory is the origin of the concept of attachment, an emotional development in which a young child develops an intense affection for and positive emotional reactions to familiar caretakers while displaying adverse emotional reactions, particularly fear, to separation from familiar people or the approach of strangers (Mercer, 2018).

Bowlby's early experience with young individuals with behavioural issues led him to assume that the nature of the mother-baby interaction had a significant social, psychological, and biological impact on the child. Bowlby relied on a variety of disciplines to develop his theory, including evolutionary biology and developmental psychoanalytical concepts that highlighted an infant's innate desire

for closeness and protection from a caretaker, motivated by the need to survive and cope with environmental stresses (Rose et al., 2016). Although Bowlby's initial investigation emphasised the crucial role of mothers, there is evidence that a bond of attachment can be developed with other caretakers responsible for providing appropriate, consistent, and responsive care. Children are said to be securely bonded when they get warm, responsive attention. Other children whose early care is not responsive to their needs may develop insecure attachments, which can negatively influence their social and emotional development (Neaum, 2019).

Attachment was the foundation of personality traits that determined later social interactions. Recognising that early attachment behaviours, including being near familiar individuals and avoiding strangers, turned relatively uncommon during the preschool and school years, he proposed that early attachment experiences, along with cognitive advances, led to establishing an internal working model (Mercer, 2018). Imprinting or brain coding occurs as the infant internalises the experiences of the caretaker relationship and begins to make sense of the world. In essence, strategies are stored in the brain's neural circuitry and linked to the physiological stress system to control feelings and manage behaviour. Eventually, the cognitive concepts or schema formed a framework of brain networks or an internal working model. The internal working model consists primarily of stored memories of early interactions that later form event scripts and serve as a generalist translator of both the child's own and other people's actions and behaviours. It also functions as a predictor and filter for the child's expectations of affective occurrences. An infant that receives adequate nurturing from his or her care takers internalises their routine, formative interactions and experiences to form a positive Internal working model of memories. This model perceives relationships as usually supportive and valuable, view other people as generally accessible, reliable, and dependable, and, as a result,

contribute to the progress of a complementary model of the self as loveable, valuable, and deserving of care (Bowlby, 1988, as cited in Rose et al., 2016).

A secure attachment connection with another person is considered the foundation for effective emotional and social development. Children with stable attachments are more socially adept than those with insecure attachments. High self-esteem and empathy for others are connected with social competence. These characteristics make it easier for children to be loved, building and maintaining familial and friendship bonds. Social competence and self-esteem likely stem from the early exploration drives of securely connected children. Their secure attachments allow children to engage with the world with confidence, curiosity, and passion since they have a secure base to leave and return to, knowing it will be there when they return. Children with insecure attachments, on the other hand, are more likely to exhibit clinging and anxious tendencies in social circumstances, limiting their contact and involvement with the world (Neaum, 2019).

Theory of Mind

The theory of mind or mentalization is vital for explaining cognitive development (Wellman et al., 2011, as referenced in Mercer, 2018). During preschool, children develop their theory of mind. It is the idea that the behaviour of others is influenced by their knowledge and motives. Between the ages of three and five, children begin to understand the concept of false beliefs, which is that a person may have wrong knowledge and do things that the child would not do if the child knew the truth. This knowledge enables the child to shift from desire psychology, which believes that people act out of desire, to belief-desire psychology, which views a person's behaviours as being motivated by what they want and believe to be true. The capacity to have a theory of mind is also regarded as a cognitive element

associated with feelings and emotional expression. The theory of mind of a child influence how the child will react emotionally to the behaviours of another person, and regardless, such actions are purposeful (Mercer, 2018). This idea relates to the capacity of individuals to recognise that other individuals have minds and that these minds contain knowledge, understanding, needs, and intentions that shape their behaviour. These realisations influence children's interactions with others and their comprehension of their surroundings (Mercer, 2018).

Empathy is utterly related to developing a theory of mind in children. It is the ability to notice and comprehend that others have beliefs, perspectives, and intentions that differ from our own (Rose et al., 2016). Children's ability to understand human behaviour is based on their theory of mind. It is referred to as a theory of mind rather than a theory of behaviour since much of what people do is impacted by what is going on in their thoughts. To explain our behaviours by relating them to our beliefs, desires, and other mental states, we try to interpret and predict the actions of others by taking their mental states into account. Mentalistic explanations, interpretations, and predictions of human behaviour are essential for social interaction. In the light of this, the theory of mind is a crucial component of social understanding or social cognition. The capacity to explain and anticipate human behaviour using ideas such as false beliefs and purposeful causes often develops near the end of the preschool years. On the other hand, children's first sense of mental life occurs far earlier. There is no single point at which children develop a theory of mind. On the contrary, their understanding evolves and changes from infancy through their schooling.

The development of metarepresentational understanding is required for grasping truth and falsity and taking incorrect beliefs into account when anticipating action. This is the concept that people's beliefs, desires, and intentions are mental

representations that regulate their actions in the world and their relationships with others. In general, 3-year-olds know the subjective aspect of psychological experience. They understand the distinction between thoughts in the mind and things in the world; they know people's desires, feelings, perceptions, and knowledge. However, the theory of mind is more than just being aware of mental states and reasoning about behaviour based on desire. The nature of the representational link differs between the two basic types of mental states, desires and beliefs. Fulfilment or unfulfillment describes desire-type states, whereas truth or falsity indicates belief-type states. Three-year-olds recognise that individuals behave to satisfy their desires, and they can use knowledge about a person's desire to explain or predict behaviours or feelings. However, three-year-olds do not understand the concepts of truth and falsity; thus, they cannot consider how people act to accomplish their desires in light of their beliefs, even when those views are incorrect.

By the age of four or five, children comprehend that variety of sensory modes provide distinct forms of knowledge such as, seeing provides colour information, while touching provides evidence about texture. Metarepresentational ability growth gives the understanding of desire and purpose. Remember that purpose are intermediaries between desires and acts. In contrast, a desire can be realised regardless of how the result is reached, and intentions can be fulfilled if the person's intention causes the action that results in the outcome.

Emotional understanding is still developing in children ages 4 and 5. development of metarepresentational capacity during the later preschool age underpins a variety of novel behaviours and abilities that emerge at this age. When metarepresentation is well established, children gain an additional awareness of social interactions, encompassing surprises, secrets, tricks, and lying. There are

advancements in social cognition following the preschool years that can be interpreted as developments in the theory of mind (Astington & Dack, 2008).

The theory of mind emerges over time, beginning with intuitive social skills in infancy and progressing to reflective social cognition during the toddler and preschool years. Three-year-olds understand that various people have distinct desires, likes, and feelings. By the age of four or five, children understand that people have different perspectives. They realise that occasionally people think things that are not true, but what they do or say is based on false beliefs. There are disparities in the regular development rate that are influenced by environmental factors such as family conversation and disciplinary tactics, interaction with siblings, storybooks, and pretend play, as well as child factors like language and cognitive control abilities. Theory of mind development has significance for children's social competence and academic achievement (Astington & Edward, 2010).

Temperament

Temperament is a critical notion in understanding personality. Temperament refers to the constitutional (genetic and other biological) characteristics determining an individual's unlearned responsiveness to circumstances. Temperament theory proposes that newborns are born with pre-existing dispositions to react to their surroundings in specific ways. The term temperamental (which has nothing to do with the vernacular definition of temperamental as unpredictable or furious) is a metaphor based on the 'temperament or tuning of musical instruments to create a precise pattern of notes when played. The idea suggests that each human has been tuned to react to common place situations uniquely and predictably, whereas other people may react differently based on their patterns. The temperament notion does not assert that biology is a destiny because it is considered that children of

increasing age can learn to moderate some of their temperamentally established responses if necessary. However, the concept serves as a reminder that there are limits to how the environment can form one's personality (Mercer, 2018).

According to Diamond (1974, as referenced in Isa et al., 2017), temperament is linked to individual variances in mood and categorised temperament into three child reactions: easy, difficult, and slow to warm up. Children with an easy temperament have an organised sleep pattern, a normal appetite, a happy mood, are resilient, and adapt quickly and easily to new people, situations, and experiences (Isa et al., 2017). They also have social abilities such as being friendly, easy to collaborate with, and willing to share (Buss, 1995, as cited in Isa et al., 2017). To put it another way, these children exhibit pleasant feelings and behaviours. Difficult children, on the other hand, are more likely to have negative responses, such as frequent weeping, difficulty recognising sleep patterns, and being irritable, sensitive, and moody. A danger before and after birth, such as a shortage of oxygen, can lead a child to have a challenging temperament (Miner & Clarke-Stewart, 2008, as cited in Isa et al., 2017). Children who are slow to warm up require more time to adjust to new or different people, surroundings, and experiences. They take longer than easy children to shape sleep patterns (Rothbart & Bates, 2006, as referenced in Isa et al., 2017). They exhibit a lack of effort, are introverted, like being alone, and have poor endurance. This sort of child also has a low activity level and prefers to withdraw from unfamiliar surroundings and avoid social situations, particularly with strangers. Temperament emerges early in development, alters and is affected by the environment, and impacts behavioural adaption. Researchers found that children at genetic risk for behavioural difficulties characterised by poor physiological regulation were less likely to experience such difficulties when exposed to sensitive caregiving early in development (Calkins, 2012).

Temperament theory suggests that, while temperamental characteristics remain static, the actual behaviour they impact varies due to progress in development. For instance, all typically developing older children will be less active than younger ones, but those who were the most active in their age group at two years old will still be more active than others at the age of ten. Furthermore, developmental progress can change the implications of temperamentally influenced behaviour, such that a highly energetic child who was difficult to manage at age two may become a cherished football team member by age 12. Temperament characteristics have varied effects in different situations, yielding diverse results at different ages (Mercer, 2018).

Ecological Systems Theory

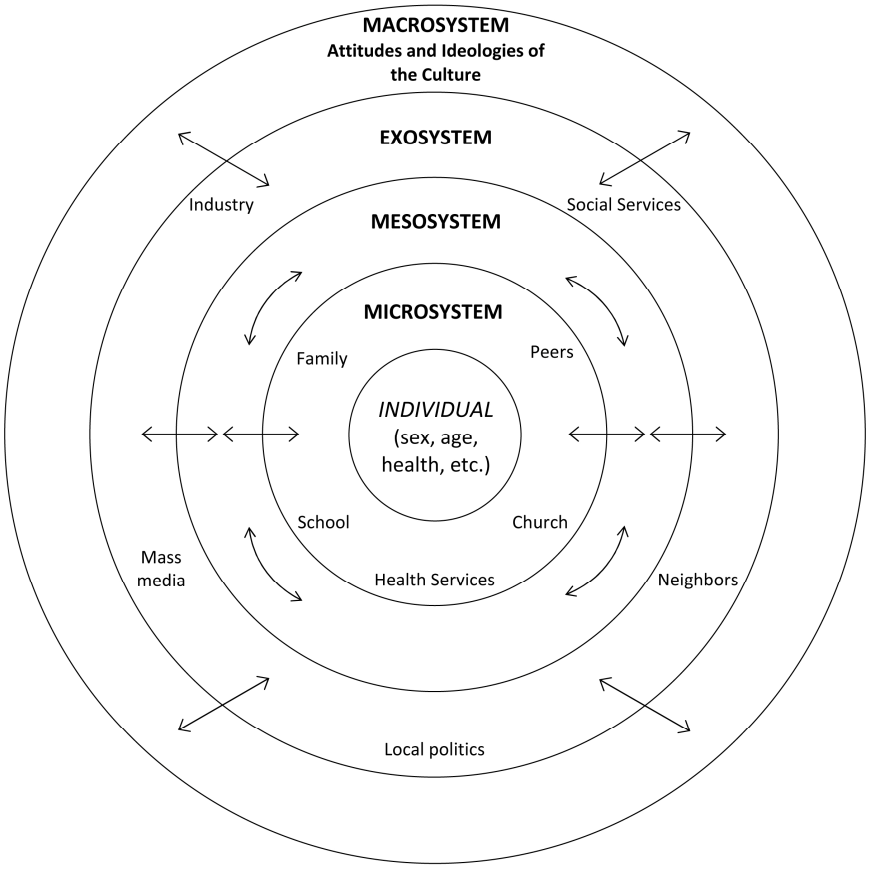
Social development is the process by which children transition from the egocentric, self-centred, and weakly empathic characteristics of early childhood, when they are unfamiliar with many conventions of social behaviour, to more adult-like characteristics that facilitate empathy, social interactions, relationships with adults and other children, and adherence to traditional standards of behaviour. Social development also changes with age and experience, just as in other areas of development (Mercer, 2018). Social competence, or the ability to be competent in social relationships and interactions, is a desired goal of social development. Social competence is more than merely the absence of social and emotional problems; it encompasses adaptive social characteristics such as good cooperation, communication, empathy, and self-control that will assist children in developing positive relationships and status in society that will facilitate their continuous development (Van Ryzen et al., 2015 as cited in Mercer, 2018).

Ecological systems theory is a significant topic that has affected research and theoretical considerations concerning social development. Bronfenbrenner (1974), as referenced in Vélez-Agosto et al., 2017 defined ecological theory as the study of

human development in enduring surroundings. Bronfenbrenner created a paradigm that emphasised the importance of both biological and social factors in children's development. He claimed that, in addition to a child's biological development, a complicated interaction pattern with people, social patterns, institutions, and the environment around the child influences child development Bronfenbrenner's work began to redefine our knowledge of children, moving away from the assumption that children and childhood are universal constants. This viewpoint realised that various children in different societies had diverse experiences with childhood. So, while many biological characteristics remained consistent throughout countries, disparities in children and their childhood experiences were due to their social experiences (Neaum, 2019). Figure 2 shows the Bronfenbrenner's ecological theory of human development.

Figure 2

Bronfenbrenner's Ecological Theory of Human Development



Bronfenbrenner's Ecological Theory of Human Development (Vélez-Agosto et al., 2017, p.902)

As per figure 2, the ecological approach examines the developing child in connection to the characteristics of the surrounding social and physical environment. These characteristics are envisioned as spheres around the child at increasing distances, with effects inversely proportional to their distance. The microsystem has the most significant influence on the developing child. It includes persons and groups the child directly interacts with, such as family, peers, and school. The mesosystem is concerned with interactions between microsystem elements. The exosystem consists of environments that influence or are influenced by events occurring in the microsystems but do not involve the child as an active participant. The macrosystem encompasses the culture in which the child is growing, as well as beliefs, values and opinions on appropriate behaviours. Ecological systems theory shows that developmental trajectories for children growing up in diverse cultures are not always the same (Mercer, 2018; Neaum, 2019).

Mental Health: An overview

Mental health is a fundamental human right and crucial to our overall health and well-being. Connecting, functioning, coping, and thriving are all aspects of good mental health. Mental health exists on a broad spectrum, with experiences ranging from optimal well-being to incapacitating moments of extreme anguish and emotional agony (WHO, 2022a). Furthermore, mental health is essential throughout life, from childhood to adulthood. Mental and physical health are critical components of overall health. The overall health and quality of life depend on mental health, which is not merely the absence of a mental illness (CDC, 2023a). Although it is more common for children with mental health issues to experience poor levels of mental well-being, this is not always the case (WHO, 2022a).

Mental health is the essential factor to survive, and it influences the way we think, feel, and act. It is the basis for our capacity to make decisions, relate others, and influence our reality. Mental health is a crucial element of health and well-being that supports individual and group capacities to decide, form connections, and influence the world. In addition, mental health was described as normal functioning in routine tasks, which leads to productive activities, healthy relationships, adapt to change and deal with problems. Moreover, it influences emotions, thinking, communication, learning, resilience, hope, and self-esteem. Physical health can influence and be influenced by mental health (APA, 2022). Everyone has the right to have the best mental health. It encompasses to be protected from mental health risks, to care that is available, accessible, acceptable, and of high quality, and to liberty, independence, and community inclusion. Good mental health enables us to handle life's stressors effectively, recognise our potential, engage in productive study and employment activities, and actively participate in our communities. Furthermore, it is required for personal, community, and social advancement (WHO, 2022b).

Child Mental Health

The developmental phases of childhood are crucial for maintaining mental health. During this phase, the brain is rapidly growing and developing. Children acquire cognitive and social-emotional skills that impact their mental health in the future and are required to take on adult roles in society (WHO, 2023). Child mental health is complete well-being and optimal development in emotional, behavioural, social, and cognitive domains. It can be regarded as different from adult mental health and more multi-faceted due to the specific developmental milestones that children experience. Child mental health comprises components of a child's family, community, and society that directly affect or modify mental health. The child's characteristics significantly predict the child's well-being (Barwick & Urajnik,

2023). Mentally healthy children enjoy life more and are better able to flourish at home, school, and in their communities (CDC, 2023c).

Early childhood mental health pertains to young children's healthy social, emotional, and behavioural well-being. Early childhood mental health might vary depending on the child, family, and community (Targos, 2018). Being mentally healthy during childhood entails achieving developmental and emotional milestones, acquiring appropriate social skills, and dealing with challenges. Children with good mental health can function well at home, school, and in communities. They also have a positive quality of life (CDC, 2023a). According to Barwick and Urajnik (2023), the child mental health is "the complete well-being and optimal development of a child in the emotional, behavioural, social, and cognitive domains" (para.1). Early childhood mental health can be described as a child's ability to engage in their physical and social environment; form healthy and secure relationships; control, understand, and express emotions; regulate behaviour; interact effectively with others; and develop a secure sense of self in their development, family, environment, and culture(Hunter Institute of Mental Health, 2014).

Even in the finest circumstances, a child's emotions and behaviours may alter frequently. Sometimes, children feel unhappy, worried, irritated, or violent and find sitting quietly, paying attention, and interacting with others challenging. Many children have occasional anxieties and concerns, as well as disruptive behaviours. For the most part, these are just normal stages of development. However, for some children, such behaviours may indicate a more severe problem (NIMH, 2021). If the child's symptoms are severe and persistent, they may be diagnosed with a mental disorder. Long-term, significant issues that limit the functioning of the child and the issues could appear in their social interactions, behaviours, and difficulties with their psychological and emotional development. Furthermore, significant differences in

how children learn, behave, and handle their emotions resulted in unhappiness and difficulties getting through the day (CDC, 2023a).

Children's development and mental health are impacted by the environment in which they are raised. Early adverse experiences in homes, schools, or digital environments, such as violence, a parent's or caregiver's mental illness, bullying, and poverty, all increase the possibility of having mental illness (WHO, 2023). Mental illness can develop in childhood and, if ignored, can prevent children from reaching their full potential. Many people seeking mental health services reflect the impact of mental illness on their formative years (NIMH, 2021). Initiatives and treatments for mental health promotion and its prevention that are well-designed can enhance children's well-being and prevent issues from worsening (Barwick & Urajnik, 2023).

Pre-primary children between three- and five-years old exhibit certain behaviours that should raise concerns about mental health problems, such as engaging in compulsive behaviours, throwing wildly, tantrums, withdrawal, lack of social interactions, struggling to play with others, no communication, lack of language, losing earlier developmental milestones and feeling anxious and afraid most of the time (Zero to three, 2017).

Previous Measures of Mental Health

The Rutter children's behaviour questionnaire was an effective screening tool for children with behavioural and emotional disorders. It consists of 26 brief statements about the child's behaviour that the teacher must determine whether the statement certainly applies, applies somewhat, or does not apply to the child in question. These are assigned weights of 2, 1, and 0 to obtain a total score between 0-52 by adding the scores of the 26 items. The reliability of the scale was good, with scores of 0.89 and 0.72 for retest and inter-rated reliability, respectively. The five

dimensions of this questionnaire were aggression, anxiety, depression, social maladjustment, antisocial behaviour, and ADHD (Rutter, 2016).

Preschool and Kindergarten Behaviour Scale (PKBS) was a behavioural rating scale for assessing the social abilities and problem-behavioural patterns of preschool and kindergarten children aged 3-6. It was standardised and norm referenced instrument designed for assessing young children in a range of situations. The PKBS has two major scales: social skills and problem behaviour. Social skills consisted of 34 items, and problem behaviour included 42 items. Internal consistency, test-retest reliability, and interrater reliability have all been reported for the PKBS. Solid evidence has been offered to support the PKBS's content and construct validity, and the PKBS appears to have a clinically relevant and statistically sound factor structure (Merrell, 1994).

Strength and Difficulty Questionnaire (SDQ) was a brief behavioural assessment questionnaire for children of age between 2 to 17. It is available in various formats to satisfy the requirements of researchers, physicians, and educators. It includes 25 measures separated into five dimensions: conduct problems, emotional problems, hyperactivity, peer problems, and pro-social behaviour. In each dimension, five items were included. Each item was followed by three alternatives: not true, partly true, and definitely true (Goodman, 1997).

The Well-Being in Preschool Children Scale assessed the psychological well-being of preschool children. The dimensions of the scale were self-concept, satisfaction peer and family relationships, general life satisfaction, and resilience. The responses were "yes," "no," and "sometimes." Pearson's correlation was used to measure the divergent and convergent validity and test-retest reliability and was found to be acceptable (Abed, 2016).

The Achenbach empirically based assessment system (ASEBA) was a collection of forms for grading behavioural, emotional, social problems and adaptive characteristics. These forms include versions of the Child Behaviour Checklist (CBCL) completed by parent figures for one-and-a-half to five-year-olds and six- to eighteen-year-olds; the Caregiver-Teacher Report Form (C-TRF) for one-and-a-half to five-year-olds, completed by daycare providers and preschool teachers; and the Teacher's Report Form (TRF) for ages 6-18, completed by teachers and other school personnel. The CBCLconsists of eight subscales: anxious/depressed, withdrawn/ depressed, somatic complaints, thought problems, attention problems, social problems, rule-breaking behaviour, and aggressive behaviour. Achenbach (2018) provides reaction scales of always, sometimes, never (Achenbach, 2018).

Common Mental Health Problems in Children

Children with mental disorders are said to have significant deviations from how they usually learn, act, or manage their emotions, which can be distressing and make it difficult to function during the day. According to the CDC (2023d), anxiety, depression, oppositional defiant disorder (ODD), Conduct Disorder (CD), attention-deficit/ hyperactivity disorder (ADHD), obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD) were the most common mental health disorders mainly seen in children.

Anxiety

Anxiety disorders are the most common type of mental disease in any age group, including preschoolers. Anxiety is a prolonged, heightened sense of fear in anticipation of future threats (Sylvester & Pine, 2017). A child may be diagnosed with an anxiety disorder if they do not overcome their regular childhood concerns and worries or if they have so many of them that they prevent them from engaging

in their everyday activities at home, school, or during play. Anxiety disorders are classified as separation anxiety, phobias, social anxiety, general anxiety, and panic disorder. Anxiety can manifest as fear or anxiety, but it can also cause children to become irritable and furious. Anxiety symptoms include difficulty sleeping and bodily symptoms such as exhaustion, headaches, or stomach aches. Some worried children keep their concerns to themselves, making the signs harder to spot (CDC, 2023d). Separation anxiety in children aged 2 to 4 might manifest as distinct worries about abandonment, kidnapping, or the death of a parent. Children who have not overcome separation anxiety by the age of five may experience acute anticipatory anxiety and physical discomfort (Lyman & Hembree-Kigin, 1994).

Depression

The typical developmental trajectory of related basic emotional processes is important to comprehend early-onset depressive disorders before the age of six (Luby & Belden, 2017). Every child experience sadness or hopelessness from time to time. Nevertheless, some children become sad or uninterested in activities they enjoyed earlier or feel helpless or hopeless in certain situations. Children who experience continuous sadness and hopelessness may be diagnosed with depression (CDC, 2023d). In addition, depressed preschoolers displayed psychomotor signs such as fatigue, alterations in sleep and appetite, as well as agitation (Luby & Belden, 2017).

Oppositional Defiant Disorder (ODD)

Oppositional Defiant Disorder (ODD) usually begins in the toddler years and possibly even in infancy (Matthys et al., 2017). ODD is when children act out persistently, causing significant difficulties at home, school, or with peers. Children with ODD shows oppositional or rebellious behaviour when they around of someone

they know well, such as family members, primary carers, or a teacher. ODD symptoms comprise frequently getting angry or losing one's temper, frequently arguing with others or unwilling to comply with adults' rules or demands, frequently being resentful or spiteful, intentionally upsetting or becoming frustrated with others, and frequently assigning fault to others for their errors (CDC, 2023d).These problem behaviours may evolve into symptoms of ODD during the preschool years due to neurobiological causes on the one hand and negative parenting practices elicited by the child's problem behaviours on the other (Matthys et al., 2017).

Conduct Disorder (CD)

Conduct disorder typically first manifests in the toddler years, although while it may also occur in infancy (Matthys et al., 2017). When children exhibit a persistent pattern of violence towards others, and significant violations of rules and norms of society at home, school, and with peers, they are diagnosed with Conduct Disorder (CD). Children with CD are at higher risk of getting hurt and may struggle to get along with their peers. Being aggressive in a way that harms others, such as through bullying, fighting, or animal cruelty, as well as lying, stealing, or intentionally causing damage to other people's property, are all signs of CD (CDC, 2023d).

Attention-Deficit/ Hyperactivity Disorder (ADHD)

ADHD is one of the most common childhood neurodevelopmental conditions. It is commonly diagnosed in childhood and might last into adulthood. Children with ADHD may struggle to pay attention, manage impulsive behaviours, or be highly active. It is typical for children to struggle with focusing and behaviour at some point. However, children with ADHD do not simply grow out of these behaviours. The symptoms persist, can be severe, and can cause problems at school,

at home, or with friends. ADHD symptoms consist of daydreaming, forgetting or losing things frequently, squirming or fidgeting, talking too much, making stupid mistakes or taking excessive risks, having a difficult time overcoming temptation, having problems taking turns, and having difficulties getting along with others (CDC, 2023d).

Obsessive-Compulsive Disorder (OCD)

Obsessive-compulsive disorder (OCD) in children is characterised by frequent unwanted thoughts, occupying a significant amount of time (more than an hour per day), interfering with daily tasks, or causing extreme distress. Obsessions are thoughts, and compulsions are the term for these behaviours. Symptoms include having unwanted thoughts, impulses, or images that occur repeatedly and cause anxiety or distress, having to think about or say something over and over, and having to do something repeatedly (CDC, 2023d).

Post-Traumatic Stress Disorder (PTSD)

Children may endure highly stressful situations that alter their thoughts and feelings, and they usually recover quickly and successfully. However, children subjected to significant stress, such as an accident, the death or impending death of a close family member or friend, or violence, may suffer long-term consequences. The child may have gone through this trauma firsthand or may have witnessed it in person. Post-traumatic stress disorder (PTSD) may be diagnosed when children experience long-term symptoms (lasting more than one month) from such stress that disturb or impede their personal lives. PTSD symptoms comprise reliving the event in thought or play, nightmares and sleep problems, becoming extremely upset when something triggers memories of the event, a lack of positive emotions, intense continuing fear or sadness, irritability and angry outbursts, always looking for

possible dangers, being easily frightened, acting helpless, hopeless, or withdrawn, refusing that the event occurred or feeling dull, and avoiding places or people related with the incident (CDC, 2023d).

Review of Related Studies

Mental Health and its dimensions appeared relevant in the current educational scenario. The investigator found many studies related to the mental health of pre-primary students, the recent and relevant studies are only extensively included.

International Studies Related to the Mental Health of Pre-primary Students

O'Farrell et al. (2023) systematically reviewed teachers' perceptions of the barriers to mental health assessment in schools. Previous reviews focused on mental health interventions in schools, which centred on the assessment of mental health in schools and teachers' perceptions of this. Findings revealed that role conflict and a lack of training in mental health evaluation were major obstacles; some educators ascribed this to their lack of expertise, confidence, and understanding in the field.

Sawa and Hagihara (2023) addressed lifestyle factors influencing children's mental health in Japan during the covid-19 pandemic. The study examined how lifestyle factors like exercise, sleep, food, and life skills affect Physical and psychosocial health in 1183 preschoolers and 3156 primary school children. Life skills were discovered to be the component most closely related to psychosocial health in both preschoolers and elementary school children. Furthermore, among elementary school children, mental health worsened with age, and girls were shown to have more serious mental illnesses than boys.

Shokrkon and Nicoladis (2023) studied the impact of personality, coping and stress reactions on the mental health of Canadian children during the COVID-19

pandemic. The multiple regression analysis was performed to investigate how personality factors predict the effects of COVID-19 on mental health using parent responses from 100 preschoolers. The findings indicated that personality qualities are associated with mental health. Neuroticism and agreeableness predicted the highest mental health problems in preschoolers.

Conte et al. (2023) addressed the PROMEHS (promoting mental health at schools) project on supporting preschoolers' academic and mental health. PROMEHS is a school-based, universal mental health programme in Europe that uses a whole-school approach to explicitly target improving students' mental health and reducing negative behaviour. Seven hundred eighty-four preschoolers were enrolled in the trial, and they were randomised to either the experimental or no intervention groups. The results showed that preschoolers' academic achievement, prosocial behaviour, and social-emotional learning competencies were all enhanced by PROMEHS.

Wang et al. (2023) evaluated the effect of physical education and physical skills' development on physical and mental health of preschoolers. A questionnaire survey and expert evaluation were done to assess the influence of sports skills and physical education on preschoolers' physical and mental health. The physical and mental health of 60 preschoolers was evaluated using physical skill development and sports. The study shows that physical skill development and physical education considerably impact preschoolers' physical and mental health, significantly impacting preschoolers' learning.

Tripathi et al. (2023) investigated parent perceptions of a preschool programme for developing and strengthening relational skills. It is a group-based social skills intervention for young autistic children with social difficulties. To categorise parent responses across four dimensions, inductive thematic analysis was

utilised. The result found that the preschool programme had an overall beneficial effect.

Yumashev et al. (2022) conducted research on the effects of physical education on the emotional and cognitive development of preschoolers. In Moscow, Russia, 355 preschoolers aged 4 and 5 participated in the study. Physical activities were held daily in the experimental group but just twice a week in the control group. The experimental group outperformed the control group by 14%. The investigation also showed a significant correlation between frequent exercise and the children's positive mental health. Physical education has a positive effect on preschoolers' mental and emotional development.

During the COVID-19 home quarantine, Ma et al. (2022) investigated the mental health issues of preschoolers. A cross-sectional online study of 2110 Chinese preschool students. Parents reported on the everyday activities and mental health of preschoolers. Boys and children whose mothers had a college or high school degree had a higher risk of mental health disorders. The 3-year-old group demonstrated much more prosocial behaviour than the other groups. It was also discovered that reducing sleep time may exacerbate preschool children's mental health problems.

Hassan and Schmidt (2022) examined inhibitory control, dyadic social behaviour, and mental health problems in preschoolers. A longitudinal, latent variable approach was used to determine if a multi-method inhibitory control index at Time 1 predicted observed social behaviour with a new peer and a mother's report of preschoolers' mental health issues at Time 2. Inhibitory control is associated with higher avoidant social behaviours and mental health issues.

Jin et al. (2022) intended to discuss the relationship between food intake and mental health problems among Chinese preschoolers. A descriptive cross-sectional

study of 19,348 preschoolers was conducted using a two-stage cluster sampling procedure. A parent-reported Strength and Difficulty Questionnaire (SDQ) was used to assess mental health status. Boys showed higher scores for total difficulties, conduct problems, hyperactivity, and peer problems than girls but lower levels for emotional symptoms and prosocial behaviour. Furthermore, there is a significant relationship between types of food and mental health disorders. Preschoolers with diverse food categories and an adequate intake of confectionery are associated with better mental health. Furthermore, processed meat has been correlated with lower mental health.

Boriak et al. (2021) investigated the relationships between the mental health indicators of mentally challenged preschoolers and the details of their development during the prenatal, natal, and postnatal stages. The findings support the conditionality of mental retardation caused by unfavourable factors during the prenatal, natal, and postnatal periods of development. It is critical to accurately diagnose existing signs of mental health disorders at preschool age to adopt appropriate corrective and developmental procedures.

Wang et al. (2021) explored the relationship between parental well-being index and child mental health problems during the pandemic, as well as the function of harsh parenting and child sleep disturbances as mediators. An online survey was administered to 16, 398 parents of children aged 3-6 years. The findings revealed that a higher parental well-being index was associated with fewer mental health disorders in children.

The study by Liu et al. (2021) examined the advantages of a diverse sports activity module on the physical fitness and mental health of preschoolers aged 4-5. Sixty preschoolers aged 4-5 were randomly chosen from two kindergartens in China.

The experimental group used the diverse sports activity module for 16 weeks. Two groups' body shapes, physical fitness, and mental health were measured and compared. The findings demonstrated that the diverse sports activity module promotes physical fitness in 4-5-year-old preschoolers and enhances their mental health.

Stein and Russell (2021) explored educators' perceptions of early childhood mental health in Colorado. This study included 36 people, with 7 to 13 people in each focus group. The study's subjects were all female. Sixteen participants indicated that they work primarily in a public early childhood education setting, fifteen indicated that they work primarily in a private early childhood education setting, three indicated that they work in both public and private settings, and two did not provide information on their work setting. Participants highlighted four major themes that drive their understanding such as reasons of mental health problems, observable signs of mental health problems, knowledge of mental health supports, and barriers to mental health support.

Siachpazidou et al. (2021) examined the action and reaction of pre-primary and primary school-age children to restrictions during the COVID-19 epidemic in Greece. In addition, the study attempts to assess how school closure affects children's educational, social, economic, and psychological results. A social networking platform was used to send an online survey to parents of pre-primary and primary school-age children. The current study highlighted schools' critical role in building a proper hygiene education campaign for children, which resulted in their adoption of protective hygiene measures, regardless of their parents' viewpoints. On the other hand, the quarantine period was believed to have harmed children's academic performance, food habits, psychological well-being, and physical health.

Nikolaou et al. (2021) explored preschool teachers' perspectives on helping children with mental health concerns in early childhood education. The study's sample size was 115 preschool teachers. The findings revealed that most teachers agree that the school should be involved in preventing and treating mental health problems in children and the most frequent disorders in preschool education are ADHD and anxiety disorders.

Li et al. (2020) investigated the prevalence of mental health problems among preschoolers in rural China. They also asked whether there was a relationship between dietary diversity and mental health. The Strengths and Difficulties Questionnaire (SDQ) was used to assess children's mental health, and data was analysed using unadjusted and adjusted logistic regression models. According to the data, 70% of preschoolers had at least one mental health problem. Emotional symptoms, conduct symptoms, hyperactive/inattentive symptoms, peer problems, and poor prosocial behaviour were all prevalent at 39, 27, 23, 12, and 26%, respectively. Male preschoolers had higher rates of mental health concerns than females on every SDQ subscale except conduct problems.

Spichak et al. (2020) conducted a psychological and pedagogical experiment on the dynamics of mental health in preschool and primary school children. The research was carried out in 12 Moscow kindergartens and three primary schools. Children of each age group were divided into two groups based on how much time they spent on the Internet. Children's aggression is related to a lack of parental attention, which leads to unrestricted internet surfing and video game activity.

Based on the use of mobile devices, Mulyantari et al. (2020) studied the mental health status of preschoolers. The sample consisted of 70 preschoolers drawn from three kindergartens in Bandung using cluster sampling techniques. The

findings indicated a significant relationship between the duration of usage and mental health status. In contrast, following the American Academy of Paediatrics' recommendations for mobile device use may boost children's cognition, language, and social skills development.

In 2020, Charach et al. looked into the identification of preschoolers with mental health issues in primary care. Reviewed the studies to identify mental health disorders in children aged 24-72 months seen in primary and community healthcare settings. 17.6% of preschoolers were found to have mental health issues. In 18.4% of preschoolers, psychiatric disorders were found. According to three studies, parents of identified children received assistance in 67-72% of cases and specialist referrals in 26-42%.

Preschoolers' attachment to their mothers and its effects on their mental health were studied by Kuftyak and Zadorova in 2020. The mother-child attachment style assessment questionnaire and the strength and difficulties questionnaire were employed for data collection. The findings demonstrated that children with insecure attachments exhibit emotional symptoms and internal problems, whereas children with safe attachments exhibit prosocial behaviour. The act of reliable attachment is a significant predictor of mental health. Inadequate mother support for children and a low need for mother presence raise the probability of emotional disturbance and behavioural disorders.

McLuckie et al. (2019) conducted a scoping review of mental health prevention and intervention strategies for infants and preschoolers at risk of socio-emotional problems. Through this review, researchers were able to identify important gaps in the literature regarding the early stages of mental health interventions. These gaps include the need for additional research from non-Western nations, improved

definitions of risk factors and related outcomes, and the part father involvement plays in infant mental health (IMH) initiatives.

Gaete et al. (2019) assessed the acceptability and practicality of a preschool adaptation of Chile's I Can Problem Solve (ICPS) programme. It is a three-arm randomised controlled study of the customised version of ICPS, with a goal enrolment of 80 preschoolers from four schools per arm. Cognitive regulation, emotion regulation, social-programming abilities, and psychological functioning will be assessed before and after the invention. Promoting social and emotional skills may result in immediate benefits for children and their families, such as reduced behavioural difficulties; however, long-term consequences are also expected, such as improved academic achievement, mental health, school atmosphere, and a reduction in risky behaviour.

The mental health issues of preschoolers were investigated in Germany by Wlodarczyk et al. (2016). The prevalence rates of general and specific mental health problems (MHP) and associated impairments were studied in a representative community sample. The Strength and Difficulties Questionnaire and its impact supplement assessed MHP in 391 children, and 7.4% had MHP symptoms. In addition, the IOWA-Conners behavioural rating scale and the Child Behavioural Checklist 1-5 (CBCL 1-5) were employed. Psychosocial issues were found to have impaired 12.9% of the children. 4.2% of children displayed symptoms of despair or anxiety, whereas 11.8% displayed symptoms of hyperactivity.

Wu et al. (2014) investigated gender differences in mental health status in children aged three to six. From 29 preschools, 427 children were chosen as a sample using cluster sampling. Children's mental health was assessed using Achenbach and Rescorla's child behaviour checklist. The parents completed the questionnaire about their child's mental health. Except for aggressive behaviours,

there were no significant differences in gender for overall mental health score and subscale scores. The boys were more aggressive than the girls.

Giannakopoulos et al. (2014) explored the perception of preschool teacher of mental health problems of preschoolers. Five focus group meetings were attended by 34 teachers. Thematic analysis was carried out using line-by-line open coding. The data analysis revealed three themes such as indicators of mental health issues, symptoms of mental health issues, and strategies for assisting preschoolers who are struggling with mental health issues.

Atilola et al. (2014) analysed the situation of Nigerian children. To examine the child and adolescent mental health effects, social and health indices among Nigerian children were obtained from edition of UNICEF in 2012. The overwhelming majority of social and physical health indicators indicate substantial risks to mental health. Up to 40% of children show signs of malnutrition, and based on net income, only 15%, 63%, and 25% of children are enrolled in pre-primary, primary, and secondary schools, respectively. Furthermore, skilled delivery attendants were present in only 39% of deliveries. According to a literature review, children who grow up in circumstances where child labour and underage marriage are common are at a greater risk of developing mental health problems.

Berg-Nielsen and Wichstrom (2012) assessed preschoolers' mental health in a Norwegian community when their parents had personality disorders. The personality disorders narcissistic personality disorder, borderline personality disorder, and antisocial personality disorder appear to be the most strongly associated with hostility and may affect children. This study aimed to investigate the possibility of mental health harm to children by parents who display subclinical symptoms of these diseases. It has been demonstrated that parents with borderline,

antisocial, and narcissistic personality disorder features can predict behavioural and emotional issues in their children as early as preschool. When parents did not live together, the variance of the children's emotional disorders explained by parental symptoms increased by six times. Even though parental personality disorders are not diagnosable, child welfare experts must be aware of abnormal personality characteristics in parents that may endanger their children's mental health.

Bufferd et al. (2011) investigated parent-reported mental health in preschoolers. The frequency of parent-reported DSM-IV illnesses in preschoolers was investigated using the preschool-age psychiatric assessment (PAPA). ECI-4 is a DSM-IV screening instrument of emotional and behavioural disorder for children aged 3 to 6. The Vineland Adaptive Behaviour Screener's socialisation subscale and the Children's Global Assessment scale were also employed in the study. Separation Anxiety Disorder (SAD), particular phobia, and oppositional defiant disorder (ODD) were the most common diagnoses, while depression, selective mutism, and panic disorder were the least common. Children with SAD had younger fathers than those without SAD; those with agoraphobia had older fathers than those without agoraphobia; and those with specific phobias came from lower-income families than those without specific phobias.

Piek et al. (2010) examined an animal fun programme aimed at improving young children's physical and emotional health. A multivariate nested cohort design was to investigate motor coordination and psychosocial outcomes such as self-perceptions, anxiety, and social competence. The animal fun project, which teachers provide, incorporates animal behaviours to assist pupils in learning and improve social and physical skills. Fine motor scores, gross motor scores, social skills, and perceived competence will all improve significantly owing to the animal fun programme. Furthermore, the programme improves behavioural difficulties.

Williford and Shelton (2008) evaluated the empirically supported intervention involving mental health consultation to minimise disruptive conduct in preschoolers. Participants included 96 preschoolers, their teachers, and their primary carers. Individualised mental health therapy was provided to children in the intervention group, with the goal of providing teachers with behaviourally based and empirically supported the approaches for minimising disruptive behaviour in the classroom. Many children in the intervention group exhibited significant behavioural improvement, according to teachers and carers. Bridging the gap between research and clinical practice and boosting the effectiveness of mental health consultation in treating disruptive disorders in young children can be addressed by implementing empirically validated interventions.

Lieberman (1997) evaluated the mental health of infants, toddlers, and preschoolers in both a service and a therapy outcome study programme. The Child Trauma Research Project is a research intervention that helps preschool-aged children and their mothers when the child witnessed domestic violence. The services employ an evaluation technique that underlines the importance of a collaborative relationship, spontaneous parental reporting, and monitoring of child-parent interaction in a variety of settings. The treatment outcome study aims of the Child Trauma Study Project must include clinical issue in a standardised data collection process that employs standardised instruments and semi-structured methods to supplement unstructured clinical interviews. Mothers typically express gratitude and relief at being able to speak frankly about unpleasant events in response to the assessor's administration of the questionnaires. The finding implies that, irrespective of the tools or methodology utilised, the assessor's supportive and empathic attitude towards the client during the information-gathering process is critical to acquiring accurate, valid, and clinically relevant data for treatment preparation.

Rickel et al. (1979) researched to describe and evaluate a preschoolers' preventative mental health programme. Teachers assessed children for learning and behavioural difficulties using the AML Scale, the Classroom Adjustment Rating Scale, and the CaMwell Preschool Inventory. These devices enabled us to identify 64 children exhibiting indicators of school maladaptation. The 32 participants in the experimental condition and the 32 in the placebo control group were chosen randomly. A multivariate analysis of variance and following univariate analyses were done on the post-tests to test for differences between the experimental and control groups. A substantial difference between the groups for three criteria measures, favouring the experimental children.

National Studies Related to Mental Health of Pre-primary Students

Hossain and Purohit conducted a study in 2019 on enhancing the mental health of children and adolescents in India. The severity of mental health disorders in children and adolescents, current approaches to treating them, and policy proposals to enhance CAMH protection programmes' prevention in India were all covered in the study. According to the report, India has achieved tremendous achievements in many health indicators. However, relatively few efforts are made to ensure the intellectual and spiritual well-being of the young population, who are the nation's future representatives. The increasing prevalence of mental problems among children and adolescents in India is concerning for the future. The extent of illnesses, their socioeconomic impact, and the deficits in the health-care system remain mostly unaddressed in the national policies and programmes in India.

Malhotra and Patra (2014) conducted a review and meta-analysis of epidemiologic studies on psychiatric disorders in children and adolescents from India. Sixteen community-based studies on 14594 children and adolescents and seven school-based studies on 5687 children and adolescents were analysed, and the

overall prevalence of child and adolescent psychiatric disorders was estimated. The study found that the reporting systems for psychiatric problems in children are insufficient. The report revealed that in India, prevalence of 23.33% in school samples and 6.4% in community samples.

In order to ascertain the prevalence rates of child and adolescent psychiatric disorders by the Srinath et al. (2005) carried out an epidemiological study of children and adolescents. It also sought to investigate the psychosocial correlates of psychiatric diseases. In Bangalore, the sample was 2064 children aged 0 to 16 years who were chosen at random from urban middle-class, urban slum, and rural areas using stratified random sampling. A thorough examination followed the screening stage. The findings revealed 12.5% prevalence rate among children aged 0-16 and no statistically significant differences in prevalence rates between urban middle-class, slum, and rural areas. Psychiatric morbidity was 13.8% among 0–3-year-old children, breath-holding spells, pica, behaviour disorder, expressive language disorder, and mental retardation were the most common diagnosis. The prevalence rate in children aged 4 to 16 years was 12.0%. The most common diagnoses were enuresis, specific phobia, hyperkinetic disorders, stuttering, and oppositional defiant disorder. According to the assessment of perceived treatment needs, only 37.5% of the families thought their children had a problem. Parental mental illness and physical abuse were found to be highly related to psychiatric issues.

Malhotra et al. (2002) investigated the frequency of psychiatric problems among school children in Chandigarh. A multi-stage random sampling and multi-informant assessment process were conducted in children of age between 4 and 11 in Chandigarh. All children were assessed by teachers using the Rutter-B Scale (Stage I), and then, for each child, a parent interview (Stage II) was conducted using the Childhood Psychopathology Measurement Schedule (CBCL), an Indian version of Achenbach's Childhood Behaviour Checklist. Children who scored above the cut-off

at Stage I and Stage II were clinically evaluated by two psychiatrists (Stage III), who interviewed parents and the child and performed a complete clinical history and mental state evaluation, including an IQ test. According to ICD-10 criteria, 6.33 per cent of the children studied (n = 963) had psychiatric problems. The teacher's estimate of the prevalence rates was more significant, at 10.17 per cent than the parent's estimate of 7.48 per cent.

Studies Related to Physical Functioning

Rodriguez Ayllon et al. (2019) reviewed the role of sedentary behaviour and physical activity in the mental health of preschoolers, children, and adolescents. The findings of meta-analysis suggested that the physical activity programmes may help adolescents' mental health; nevertheless, further study is required to confirm the impact of physical activity on children's mental health. Observational research findings suggested that increasing physical activity while decreasing sedentary behaviour may protect children's mental health.

Bidzan-Bluma and Lipowska (2018) conducted a comprehensive review of children's physical exercise and cognitive performance. The result showed that the influence of physical activity on health, particularly a positive association between sports and cognitive abilities. Attention, thinking, language, learning, and memory were studied in sports and childhood. The findings revealed that participating in sports in late childhood improves cognitive and emotional abilities. According to the literature, efficient cognitive functioning in pre-adolescents requires an appropriate intelligence quotient and high levels of executive function development such as motivation, goal-setting ability, and self-control, which is enhanced by participation in sports. The findings imply that participating in sports in late childhood is beneficial because it improves cognitive and emotional skills.

Pinquart and Teubert (2011) studied a meta-analysis to compare the academic, physical, and social functioning levels of children and adolescents with chronic physical disorders to those of healthy peers. The study was designed to incorporate the findings of 954 investigations. The findings demonstrated that children and adolescents with chronic physical disease had more complex academic, physical, and social functioning levels than their healthy peers or test norms. The levels of functioning did not differ based on illness duration, age, or gender. These impacts are most pronounced in physical functioning and least pronounced in social functioning. Children with cerebral palsy and spina bifida are likelier to have decreased functioning. Regarding physical functionality, every child with a chronic illness should be checked by an experienced physician for activity counselling and to identify any risks related to sports participation.

Reinfjell et al. (2006) evaluated the psychometric aspects of the paediatric quality of life inventory scale of Norwegian translation. The sample consisted of 425 healthy young children and 237 caretakers acting as proxies. The scale comprised of 23 items, and divided into four domains such as physical functioning, emotional functioning, social functioning and school functioning. Cronbach's alpha was used to determine reliability. Exploratory factor analysis was used to investigate the construct validity. Cronbach's alpha for all self-report and proxy-report scales were 0.77 and 0.88 respectively, indicating satisfactory reliability.

Studies Related to Emotional Competence

Colonnesi et al. (2019) evaluated the impact of mothers' and fathers' mind-mindedness at 4, 12, and 30 months on children's social competence and externalising and internalising behaviour problems at 4.5 years. During parent-child free-play interactions, appropriate mind-mindedness (correct interpretations of the child's mental states) and unattuned mind-mindedness (misinterpretations of the child's

mental states) were detected. The reports of both parents were used to measure social competence and internalising and externalising behaviour difficulties. Hierarchical multiple regression analyses revealed that, at 12 months, both parents' uncommon use of acceptable mind-related comments predicted children's externalising issues. However, their frequent use of unattuned comments predicted children's low social competence. The findings revealed that both parents' poor usage of mind-related comments and frequent misinterpretations of their child's mind may be risk factors for their child's subsequent social and behavioural issues.

Hukkelberg et al. (2019) carried out a meta-analysis to study the relationship between various forms of behavioural difficulties and social competence in children aged 3-13, and possible moderators in this relationship. A systematic review of English language studies found links between three categories of behavioural difficulties, including externalising behaviours, conduct problems, or aggression and two forms of social competence (social competence or social skills). Reports from parents and teachers, or both as a dyad, were included in the studies. The findings revealed a medium effect size association between behavioural difficulties and social competence. The results summarised and quantified a solid inverse relationship between behavioural issues and social competence. The findings suggested that intervention programmes aimed at problem behaviours in children might benefit from lowering behavioural issues while also increasing social competence to assist children with new or current problem behaviours.

Chen et al. (2018) examined gender variations in the association between maternal emotional expression and discipline and emotional regulation strategies of boys and girls. The study used questionnaires to examine 498 Chinese mothers with children aged 3-5 years. The findings revealed that maternal negative emotions were associated with girls' use of passive behaviours and venting. In contrast, maternal

good emotions were associated with both boys' and girls' use of cognitive reconstruction, problem-solving and the use of alternative activities. Additionally, the use of venting by both boys and girls was linked to parental psychological hostility.

Schmitt et al. (2018) examined the influence of positive action on preschoolers' social-emotional competence and health behaviours. The study used a randomised controlled design to examine the children who participated in PA improved their social-emotional competence and health behaviour measures, including parent reports, teacher reports, and a direct assessment. The study included 75 children from 10 preschool classrooms in the United States. This study presents preliminary evidence that PA preschool courses may increase children's social-emotional competence, health behaviours, and social problem-solving skills, as reported by their parents. Furthermore, the findings indicate that teachers can successfully use PA and that children enjoy the courses.

Ren et al. (2018) examined the relationship between young Chinese children's behavioural regulation and their mathematics, language, and behavioural difficulties. Further research was done on the parental roles in these relationships, both maternal and paternal. Furthermore, it was investigated if behavioural regulation could mitigate the relationships between parenting and the mentioned child outcomes. It also investigated whether parenting could help to attenuate the relationship between children's behavioural regulation and their results. The study included 109 Chinese youngsters residing in Hong Kong who were approximately three years old. Individual tests assessed children's behavioural regulation, number competence, receptive vocabulary, and phonological awareness.

Lam and Wong (2017) studied an intervention programme that involved strengthening kindergarten teachers' social-emotional competence and adopting a thoroughly thought-out curriculum to increase young children's social-emotional

well-being in Hong Kong. The design was based on the Wisconsin Pyramid Model for supporting social-emotional competence in children. Teachers and the children were selected using a random cluster sampling technique, with teachers participating in two-month training programme that included hands-on workshops. Preschool children's social-emotional well-being was assessed using the social competence and behavioural evaluation scale before and after the intervention. The showed that after the intervention, there was a statistically significant enhancement in social competence and reduced anxiety-withdrawal and anger-aggression.

Lee et al. (2017) studied the influence of maternal attitudes regarding children's emotional expressiveness on the emotional understanding and psychosocial adjustment of Korean preschoolers. Seventy preschoolers took part in an emotional understanding assignment that involved identifying the emotional response of cartoon characters to various emotion-eliciting circumstances. Maternal attitudes towards children's emotional expressiveness and teachers' ratings of children's behaviour problems and social skills were assessed. Children's emotional comprehension was associated with teacher-reported behaviour difficulties but not social skills.

DiMaggio et al. (2016) explored the association between emotion knowledge, emotion regulation, and adjustment in preschoolers. Two hundred forty children aged three to five were given a vocabulary test to assess their verbal abilities and a measure of emotional knowledge. Teachers completed two surveys about children's regulation and adjustment characteristics. A mediation model and an assessment of the indirect effects were examined to determine if emotion knowledge may influence adjustment via emotional regulation intervention. The results showed that for social competence and anxiety-withdrawal, all prerequisites for complete mediation were met, indicating the significance of emotion regulation as a mediator in the link

between emotional knowledge and these variables. Furthermore, the findings revealed that emotion knowledge and anger-aggression were unrelated. The findings suggested that emotion awareness was connected positively with the social competence and adversely with anxiety-withdrawal, but not anger-aggression.

Lillvist et al. (2009) studied preschool teachers' perceptions of young children's social competence. In Sweden, 481 preschools from 22 municipalities took part. A mixed methods design was used to analyse the data, with a qualitative content analysis followed by quantitative group comparisons. Preschool teachers classified social competency mainly into intrapersonal skills or interpersonal relations. The definitions of social competence used by preschool instructors are partly multi-dimensional, implying that treatments targeted at increasing children's social skills and social competence should likewise be multi-dimensional. It has minimal relevance to environmental elements, indicating that social competence depends more on individual views than contextual factors.

Children's social competency in preschool was predicted by both child and maternal factors, according to Diener and Kim (2004). Participants included 110 mothers and their preschoolers. In addition to self-reporting their separation anxiety, mothers completed parent reports on their children's temperament and self-regulation. The interactional style of mothers was recorded using videotapes from preschool. Teachers assessed children's social skills at the end of the first semester of school. Children's social competency was predicted by their age, temperament, self-regulation, and maternal characteristics. The combination of anger proneness and self-regulation predicted both externalising and prosocial behaviour. Finally, children with more risk variables exhibited less prosocial behaviour and more externalising behaviour than children with fewer risk factors. The findings suggested that maternal and child behaviour can be used to recognise the children at risk of having low social competence in preschool, allowing interventions to be performed.

Denham et al. (2003) assessed the emotional expressiveness, emotion management, and emotion knowledge patterns of preschoolers. Their contributions to social competence, as measured by sociometric likability and teacher ratings, were assessed using latent variable modelling, both concurrently and across time. The moderation of important outcomes by age and gender was also investigated. Emotional competence measured between the ages of three and four years old was found to contribute to both concurrent and kindergarten social competence. The contributions of emotional competence to social competence have long-term effects, even in the preschool years.

Denham et al. (1997) investigated how parents affect the emotional competence of preschoolers. Emotional socialisation, emotional competence, and social competence of preschoolers from 60 middle-income households were measured using both observational and self-report methodologies. Data were gathered in both the classroom and at home. The findings implied that parental modelling of expressive styles and emotional responses to child emotions were significant determinants of preschoolers' emotional and overall social competence. Children with more effectively positive parents tended to exhibit more pleasant feelings with classmates, whereas children with more negative parents appeared less socially adept in preschool.

Raver and Zigler (1997) undertook a thorough evaluation of existing research on children's social abilities, including their ability to modify their feelings, social cognitions, and behaviours in peer interaction as indicators of social competence. After that, looked at concepts of social competence in the context of peer, teacher, and parent evaluations of children's performance. Based on this study provided a thorough set of tangible policy suggestions for evaluating early childhood intervention by assessing social competency as a significant indication of programmatic success.

Rose-Krasnor (1996) examined the children's social competence in terms of two facets of relationship of mother and child were attachment security and maternal directiveness. The sample consisted of 111 mothers, and their four-year-old children were matched with an unfamiliar child of the same age and gender. They participated in cooperative tasks and free-play sessions to assess maternal directiveness. Children's social engagement and problem-solving skills were assessed throughout dyadic free play. Positive social engagement was predicted by attachment security. Only parts of the children's social problem-solving were connected with maternal directiveness.

Denham and Auerbach (1995) examined emotional conversations between preschoolers and their mothers as predictors of components of children's emotional competence. The decision to talk about the emotions was made by each mother and child dyad while they saw a picture book with 47 preschoolers and their mothers. Characters in the book expressed emotions on nearly every page. Conversations were transcribed and classified for the frequency and purpose of emotional language and specific emotions spoken by both mother and child. Mothers' and children's emotional language patterns were linked to indicators of positive social-emotional development.

Philippot and Feldman (1990) investigated the relation between social competence and emotion decoding in children aged three to five years. Children were shown recorded scenarios illustrating emotional events and asked to determine which of three facial expressions would be most suitable for the character, signifying happiness, sadness, and fear. A standardised questionnaire completed by the children's parents was used to assess their level of social competence. The findings revealed that participants with higher social skills were better decoders than respondents with lower social skills and that decoding competence improved with age.

Studies Related to Behaviour Regulation

Kraaij and Garnefski (2019) created the Behavioural Emotion Regulation Questionnaire. The 5-scale questionnaire examined one's behavioural style or strategies for responding to stressful events to regulate emotions. It complements the Cognitive Emotion Regulation Questionnaire, which assesses cognitive coping. The psychometric features of the Behavioural Emotion Regulation Questionnaire and its association with well-being and the Cognitive Emotion Regulation Questionnaire were investigated in a sample of 457 people from the general community. The placement of items in subscales was validated by principal component analyses, with all scales having strong alphas. All BERQ scores are substantially associated with depressive and anxiety symptoms. Higher use of seeking distraction, actively approaching, and seeking social support was associated with reduced depression and anxiety symptoms, indicating that these are more adaptive tactics. Withdrawal and ignoring were associated with increased anxiety and depression symptoms, implying that these are less adaptive responses. The findings imply that while developing intervention programmes for mental health concerns, it is critical to consider behavioural coping.

Finch et al. (2018) studied social-emotional behaviours in preschoolers in rural Pakistan. The SDQ assessed symptoms of common childhood behavioural issues that can progress to mental health concerns. The factor structure and reliability of the parent-report type of the SDQ in rural Pakistan were assessed in 1,302 highly disadvantaged mothers and their preschoolers. Confirmatory factor analyses indicated that the original SDQ structure was inappropriate for their data. Measures of children's prosocial abilities and externalising behaviour issues were developed and conceptually and empirically cohesive. The child and family correlations of social-emotional behaviours were similar to those observed in other countries, indicating the validity of

novel composites. At four years, girls and children with more siblings showed less externalising behaviour problems and more prosocial behaviours. Furthermore, maternal depression symptoms and food insecurity were uniquely connected to more serious externalising behaviour difficulties at four years.

Lugo-Candelas et al. (2017) evaluated whether the indications of ADHD in children have difficulty with emotional understanding, regulation and reactivity. The study included 64 children aged four to seven years old, 29 of whom had symptoms of ADHD. Children did an emotion-matching activity while parents provided information about their children's emotional regulation and abilities. They also performed complex computer activities and emotional facial expressions were coded, and children self-reported their affect during the task. Reports of parents suggested that children with ADHD symptoms had increased lability and poor emotional control abilities. Compared to normal children, children with ADHD symptoms displayed emotional comprehension deficits.

Schmitt et al. (2014) explored the influence of behaviour regulation in vocabulary acquisition for children undergoing language therapy in public schools. The study included 121 preschool and first-grade students with language difficulties, who were nested within 42 speech-language pathologists. The result revealed that children's behaviour regulation is a crucial predictor of vocabulary gain in children having linguistic impairments; children with good behaviour regulation improve more across the academic year than peers with poorer behaviour regulation.

Jackson et al. (2013) conducted a longitudinal study on the influences of mothers' social support for parenting from non-resident fathers and significant others on behavioural outcomes in Black children. The sample included 99 single mothers had preschool-aged children. Better availability of instrumental assistance from

significant others, particularly non-resident fathers, was related to more appropriate parenting and, as a result, fewer child behaviour problems.

DiBiase and Waddell (1995) investigated the influence of homelessness on preschoolers' self-concept, behavioural symptoms, and emotional development. The pictorial scale of perceived competence and acceptance for young children was used to evaluate self-concept, while teachers graded behavioural symptoms using the child behaviour checklist. Emotional development was also studied. Findings suggested that homeless preschoolers have weaker self-concepts and exhibit more deviant behaviours on the child behaviour checklist than housed preschoolers of the same socioeconomic class. However, both groups showed similar levels of emotional recognition and understanding.

Studies Related to Cognitive Functioning

Bidzan-Bluma and Lipowska (2018) comprehensively reviewed children's physical exercise and cognitive functioning. Very little research has been published on the association between sports and cognitive functions in children. The study indicated the impact of physical activity on health, particularly the good association between sports and cognitive capabilities. From the 617 results, 58 papers strictly related to the critical issues of physical exercise and cognitive functioning were then reviewed. Attention, thinking, language, learning, and memory were studied in relation to sports and childhood. The findings revealed that participating in sports in late childhood improves cognitive and emotional abilities.

Flanagan et al. (2015) examined the stability of cognitive and adaptive behaviour standard scores in children with autism spectrum disorder between diagnosis and school enrolment at about six years. The study aimed to discover the concurrent association between IQ and adaptive behaviour standard scores at various

ages and cognitive levels. The Wechsler Preschool and Primary Scale of Intelligence – 3rd Edition assessed cognitive skills for children aged 30-87 months. The Vineland Adaptive Behaviour Scales-2nd Edition, assessed adaptive behaviour. IQ and adaptive behaviour were moderately to significantly associated. Correlations were more substantial in children aged three, four, and six than in children aged two.

Studies Related to Language Skills

Yang et al. (2021) investigated language development in early childhood. The study addressed the longitudinal impacts by analysing the predicted influence of preschool teacher-child interaction quality on children's subsequent receptive vocabulary development in 42 Kindergartens in China. The study found that children's receptive vocabulary development in the early years was highly related to the quality of teacher-child interactions. The study revealed how teachers can boost children's possibilities for social communication, support their language and academic development, and generate meaningful play in highly organised classrooms by using suitable teaching practices.

Indrayani (2016) described how language develops in childhood. The findings revealed that language development was separated into three phases: prelingual, early lingual, and differentiation. In the differentiation period of 3 to 6 years, children's ability to organise the differentiation of words and sentences was more appropriate. Health, intelligence, social and economic situations, family relationships, family size, peer relationships, and personality are all elements that influence language development.

Aro et al. (2014) used longitudinal data from toddler to kindergarten age to investigate the connections between various types of early language and communication characteristics and self-regulation skills. Children with expressive

delay, broad delay, and typical language development were compared in domains of kindergarten-age executive and regulative skills such as attentional/executive functions, regulation of emotions and behavioural activity, and social skills assessed using parental questionnaires. Children with delayed toddler-age language development displayed lower self-regulation skills in kindergarten than children with average early language development.

Conclusion

The chapter endeavoured to review the existing literature and knowledge related to the study. The theoretical framework provided an understanding of early childhood development and child mental health. Many theories and concepts, including those about various facets of child development, such as physical, emotional, social, behavioural, cognitive, and language development, as well as insights of theories, were evaluated to achieve the theoretical viewpoint of the study. Additionally, the chapter delves into the bio-psycho-social aspects of child development. It encompasses brain development, attachment theory, theory of mind, temperament, and ecological systems theory. Developmental theories provide valuable information for the identification of children's abilities and developmental norms that are consistent with their age. Furthermore, the chapter provides an overview of mental health, child mental health, previous measures of mental health, and common mental health problems in pre-primary children.

The review of related studies revealed that numerous studies have been conducted on pre-primary students describing their mental health, physical functioning, emotional competence, social competence, behaviour regulation, cognitive functioning, and language skills. The studies conducted up to the year 2023 were included in the study. Additionally, the chapter provides an overview of current trends in children's mental health research and related variables. The

investigator also examined data on the international and national mental health studies of pre-primary students. Based on a thorough analysis of the literature, the investigator identified a research gap that needed to be addressed in the investigation. Specifically, pre-primary students' mental health has not got much exposure in India, particularly in Kerala. This area of study has received little importance. Hence, the inquiry provides an opportunity to explore the indicators of mental health of pre-primary students in Kerala from the perspectives of teachers, special teachers, and experts in psychology and education. It is noteworthy that a mental health scale for pre-primary students that exclusively measures as a positive construct is rare. Though many studies focused on the mental health problems of pre-primary students, the studies on the mental health of pre-primary students have not received much attention. Thus, the present study fills a crucial research gap in the existing literature by exploring the indicators mental health of pre-primary students, developing a mental health scale and assessing the mental health status of pre-primary students in Kerala.

Chapter 3
METHODOLOGY

- Design of the study
- Variables of the study
- Sample selected for the study
- Tools and techniques used for the study
- Procedure of data collection
- Procedure for data analysis
- Ethical considerations of the study

METHODOLOGY

This chapter provided an overview of the research methods that was used in the study. The aim of the study is to explore the indicators of mental health of pre-primary students. The mental health indicators generated were then utilized to develop a standardised mental health scale for pre-primary students and norms were established. Additionally, the study evaluated the levels of mental health and compared the mental health of pre-primary students based on categorical variables. The study also examined the interrelationship between mental health and its dimensions. This chapter included a description of the study's design, variables, sample, tools and techniques, procedures of data collection, procedure of data analysis, and ethical considerations.

The objectives that guided this study were:

1) To identify the indicators of mental health in pre-primary students.
2) To construct and standardise a mental health scale for pre-primary students.
3) To find out the levels of mental health among pre-primary students in age groups 3-4 and 4-5.
4) To compare the mean scores of mental health among pre-primary students in age groups 3-4 and 4-5 for the subsamples based on
   - ✧ Gender
   - ✧ Types of family
   - ✧ Number of siblings
   - ✧ Birth order
   - ✧ Father’s age

- ✧ Mother's age
- ✧ Father's education
- ✧ Mother's education

5) To study the interrelationship between mental health and its dimensions among pre-primary students in age groups 3-4 and 4-5

Design of the Study

An exploratory sequential mixed methods design was used to assess the mental health of pre-primary students in the study. According to Creswell and Creswell (2018, p.307), "three-phase exploratory sequential mixed methods is a design in which the researcher first begins by exploring with qualitative data and analysis, then builds a feature to be tested and tests this feature in a quantitative third phase." In the present study, three phases make up the research. In the first phase, indicators of mental health of pre-primary students were explored, and mental health indicators were found. The second phase entailed developing standardised mental health scale and established norms. The third phase consisted of assessing the mental health of pre-primary students.

Phase 1: Qualitative Phase

During the qualitative phase, the indicators of mental health of pre-primary students was explored through interviews with pre-primary teachers, special teachers, parents and experts in psychology and education. Triangulation was accomplished through interviews with parents and participant observation were conducted with pre-primary students by the investigator. In data triangulation, "the researcher investigates whether the data collected with one procedure or instrument confirm data collected using a different procedure or instrument" (Ary et al., 2010,

p.499). The investigator employed data triangulation to ensure the credibility of the data.

Phase 2: Tool Development Phase

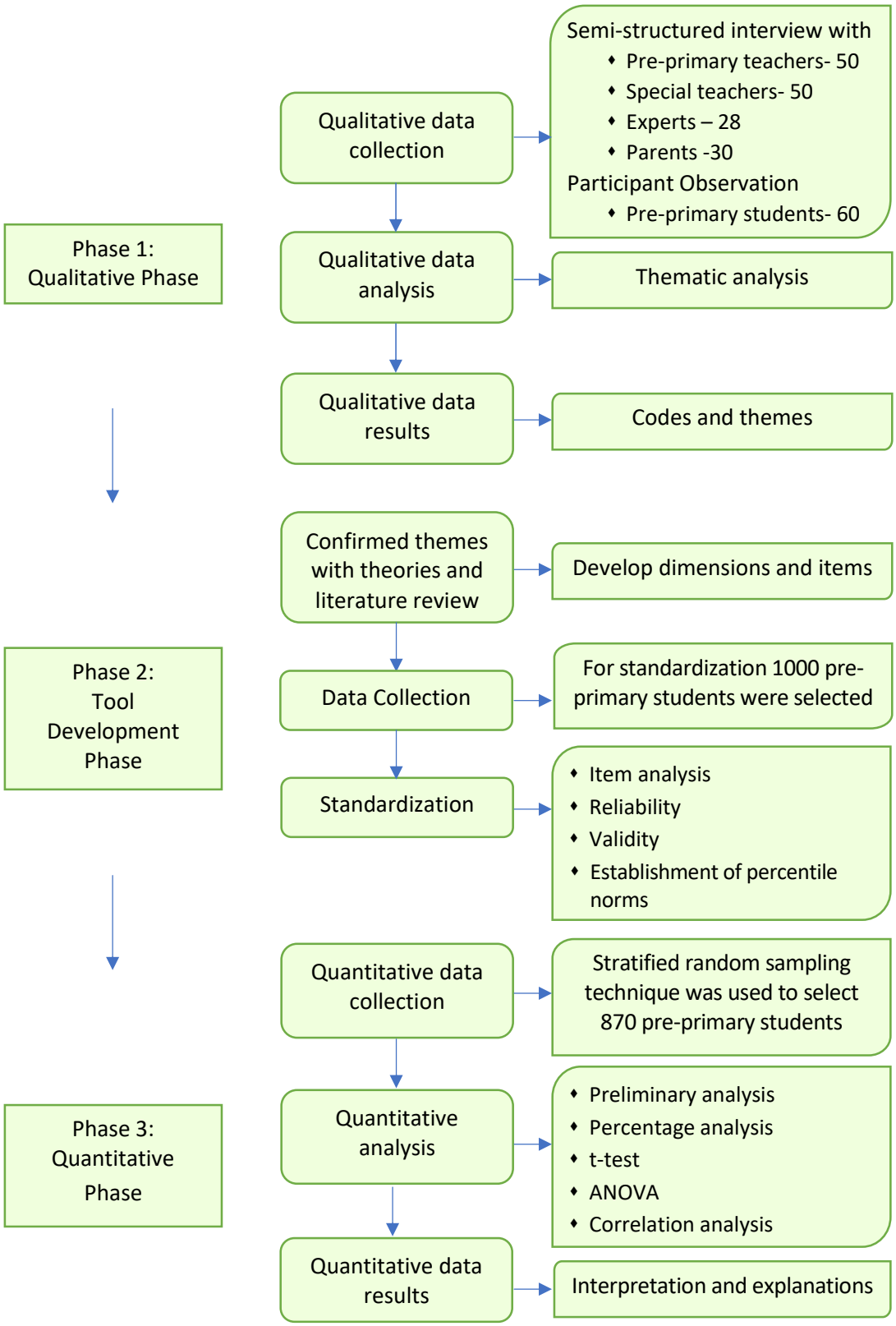
A mental health scale for pre-primary students was developed based on the themes generated from the interview data and through literature review. With the assistance of the supervising teacher, the investigator confirmed the dimensions of mental health and developed a mental health scale for pre-primary students. In the present study, the mental health scale for pre-primary students was reported by teachers. For pre-primary students, it was recommended that the teacher who knew the child well enough for at least three months before assessing him or her using the mental health scale. Furthermore, the mental health scale for pre-primary students was standardised, and norms were established.

Phase 3: Quantitative Phase

In the quantitative phase, the study measure the mental health of pre-primary students. The study assessed the levels of mental health and compared the mental health of pre-primary students based on the categorical variables. Moreover, the interrelationship between mental health and its dimensions was measured. Figure 3 displays the schematic depiction of the study's research design.

Figure 3

Schematic Representation of Exploratory Sequential Mixed Methods Design



Variable of the Study

The variable of the study was the mental health of pre-primary students. The primary objective was to identify the indicators of mental health of pre-primary students, develop and standardise a mental health scale and establish norms to assess the levels of mental health among pre-primary students. The study also attempted to compare the mental health of pre-primary students based on categorical variables and examined the interrelationship between mental health and its dimensions.

The indicators of mental health of pre-primary students was explored through interviews and participant observation. The mental health indicators were identified through interviews with pre-primary teachers, special teachers, and experts in psychology and education. A mental health scale was developed using the indicators identified from the interview data and through reviewing related literature.

Categorical Variables

The present study includes the following categorical variables.

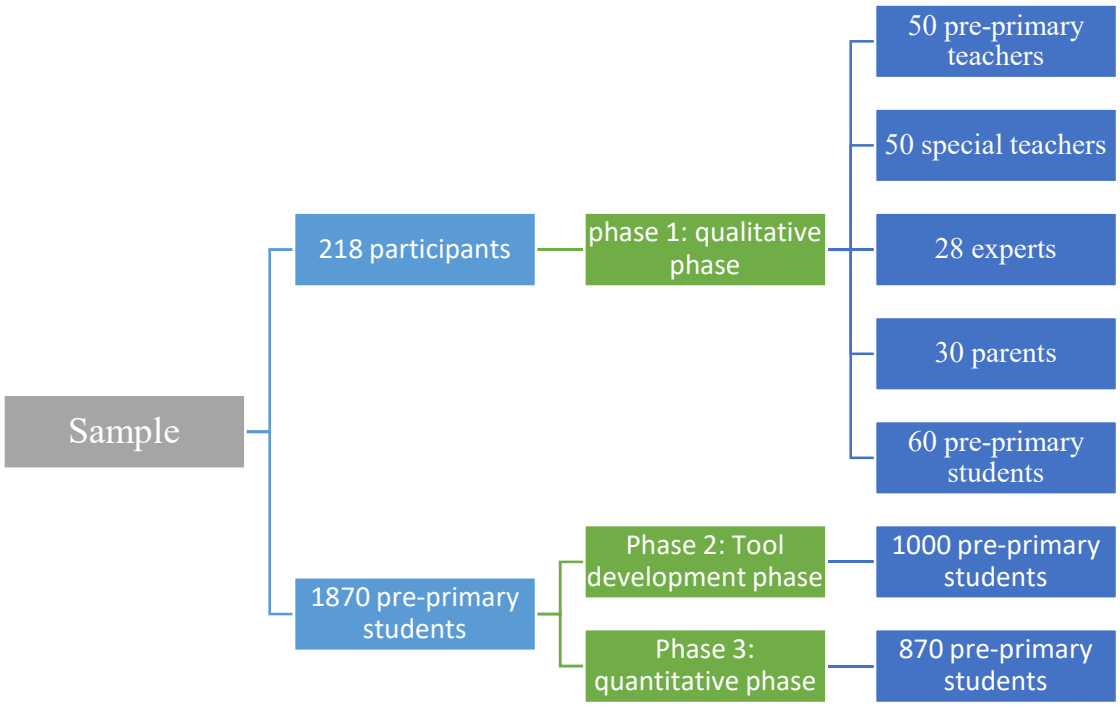
1. Gender
2. Types of family
3. Number of siblings
4. Birth order
5. Father's age
6. Mother's age
7. Father's education
8. Mother's education

Sample Selected for the Study

The sample selected for the qualitative phase was 218 participants, consisting of pre-primary teachers, special teachers, and experts in psychology and education. Additionally, 1870 pre-primary students in Kerala were selected for tool development and quantitative phase. The sample selected for the qualitative, tool development and quantitative phase is summarised in this section. Figure 4 shows the sample distribution of the study.

Figure 4

Schematic Representation of Sample Distribution of the Study



Phase 1: Qualitative Phase

Pre-primary teachers, special teachers, experts in psychology and education, parents, and pre-primary students made up the study's sample for the qualitative phase. An overview of the sample utilized for the qualitative phase is provided in the table 1

Table 1

Overview of Sample Selected for Qualitative Phase

Sl. No	Sample	No. of Sample	Techniques used	Sampling Techniques
1	Pre-primary Teachers	50	Both one-on- one interview and telephonic interview	Purposive sampling
2	Special teachers	50		
3	Experts	28		
4	Parents	30		
5	Pre-primary students	60	Participant observation	

Interviews were conducted with pre-primary teachers, special teachers, experts, and parents from Thrissur, Malappuram, Ernakulam, and Alappuzha. Telephonic and one-on-one interviews were conducted. Fifty teachers from Anganwadi, Balawadi, and pre-primary schools such as Kindergarten, Montessori, and Nursery schools are among the pre-primary teachers. The special teachers include teachers working in special schools, the Community Disability Management and Rehabilitation Programme (CDMRP), and the Block Resource Centre (BRC). Fifty special teachers were selected for the study. Additionally, 28 experts from the fields of psychology and education were selected. Sixty pre-primary students were observed from two Anganwadis and two pre-primary schools in Thrissur district. The purposive sampling technique was used for both interviews and observation. The table 2 shows the details of the experts selected for the study.

Table 2

Details of Experts in Psychology and Education

Field of expertise	No. of Experts
Clinical Psychologist	8
Professor/ Assistant professor in Psychology	3
Psychiatrist	2
Psycho-social counsellor	10
Teacher educator	5

For the study, 28 experts in psychology and education were chosen. The experts include 8 clinical psychologists, 2 psychiatrists, 5 teacher educators, and 10 psycho-social counsellors. The experts were chosen by using purposive sampling technique.

Phase 2: Tool Development Phase

A sample of thousand pre-primary students were chosen for the tool development phase. Table 3 gives the sampling distribution of tool development phase based on age groups 3-4 and 4-5.

Table 3

Sample Distribution of Tool Development Phase

Sample	Age group	No. of sample
Pre-primary Students	Age 3-4	475
	Age 4-5	525
Total no. of Students		1000

The stratified random sampling technique was used to choose the sample from Thrissur, Malappuram, and Ernakulam districts. Of the 1000 pre-primary students in the sample, 475 belong to the age group 3-4 and 525 to the age group 4-5. A sample of 1000 pre-primary students was chosen in order to standardise the tool and establish norms.

Phase 3: Quantitative Phase

The sample for the quantitative phase consisted of 870 pre-primary students. The sample distribution utilized for the quantitative phase is displayed in table 4.

Table 4

Sample Distribution for Quantitative Phase based on Age Group

Sample	Age group	No. of Sample	Percentage
Pre-primary students	Age 3-4	331	38
	Age 4-5	539	62
Total		870	100

The stratified random sampling technique was used to select 870 pre-primary students as the sample for the quantitative phase; 38% of these students belonged to the age

group 3–4 and 62% to the age group 4-5. For the study, a sample drawn from Kozhikode, Malappuram, Thrissur, Palakkad, and Ernakulam districts was employed.

List of Schools and Anganwadis Selected for the Study

The list of schools and anganwadis selected for the data collection are given in Table 5.

Table 5

The Detailed List of Schools and Anganwadis Selected for the Study

Sl. No	Name of the Schools	District
1	• Artacia Nursey school • Rachana Nursey school • AEMS public school • Elampulasseri AUP school • AUPS Thenjipalam • Time Kids Preschool, Thenjipalam • MEMS English Medium School Anganwadis under • Aricode Additional Division ICDS office • Tirurangadi Additional Anganwadi ICDS office	Malappuram
2	• St Anne's English Medium school, West Fort • Infant Jesus English Medium school, Aranattukara • Apple Valley Preschool • Govt. U P school, Aranattukara, • 1st school, Civil Lane • Govt. U P school, Ayyanthole • Saraswathy Vidhya Nikethan English Medium School, Ayyanthole • Rainbow Preschool, Punkunnam • Rosebud Montessori, Punkunnam • N. S. S. E. M. H. S, Thrissur, West Fort • CMS Thrissur • Time Kids Preschool, Peringavu • Sandeepani Vidya Nikethan School, Kuttimukku • Raices Montessori,Viyyur • Time Kids, Thrissur	Thrissur

Sl. No	Name of the Schools	District
	• N.U.P.S.Cheroor, • Crayons Preschool, Pullazhi • G.V.U.P.S.Olarikara • St Mary's H.F.C.U.P.S. Ambakkad • B.V.P. Adat • G.U.P.S. Adat • I.E.S.Chittilapilly • G.U.P.S.Chittilapilly • G.L.P.S. Kuttur • G.L.P.S. Choorakattukara • Nirmal Matha U. P. School, Ayyanthole Anganwadis under • Puzhakkal division ICDS office • Puzhakkal Additional Division ICDS office	
3	• K4 Kids preschool, Palakkad • G.H.S.Ummini • St Thomas School, Olavakode • G.L.P.S. Koppam • A.U.P.S. Kalmandapam • G.H.S.S. Bigbazar • Dr. Nair G.U.P. School • Govt. MoyanL.P. School	Palakkad
4	• Govt. B.T.S.L.P. School • Loonie Tunes preschool • St George's LP school, Edapally • Oxford preschool, • GVHSS North Edapally • GLPS Cheranallur	Ernakulam
5	• Vidhyarambham Nursery School, Mannur • Bharatiya Vidhya Bhavan, Kozhikode • AMLP school, Kadalundi	Kozhikode

The data was gathered from five districts in Kerala: Malappuram, Thrissur, Palakkad, Ernakulam, and Kozhikode. Additionally, the data was gathered from Anganwadis under the Aricode additional division ICDS office, Tirurangadi

additional division ICDS office, Puzhakkal division ICDS office and Puzhakkal additional division ICDS office.

Classification of the Sample based on Categorical Variables

Based on categorical variables such as gender, types of family, number of siblings, birth order, father's age, mother's age, father's education and mother's education, the sample was split into groups. The table 6 provides the detailed information.

Gender

The gender of the students was considered when selecting a sample. In this study, gender was categorised into two groups: boys and girls.

Table 6

Split up of the Sample based on Gender

Categorical Variables	Categories	Age Group		Total	Percentage (%)
		3-4	4-5		
Gender	Boys	175	260	435	50
	Girls	156	279	435	50
Total		331	539	870	100

The sample was divided evenly between boys and girls, as shown in Table 6. Among students of age group 3-4, there were 156 girls and 175 boys. Moreover, there are 279 girls and 260 boys among the students in the age group of 4-5.

Types of Family

Based on the types of family, the sample was separated into joint and nuclear families. A joint family consists of the father, mother, grandparents, uncles, aunts, and other family members. A nuclear family consisted of the mother, father, and children.

Table 7

Sample Composition based on Types of Family

Categorical Variables	Categories	Age Group		Total	Percentage
		3-4	4-5		
Types of family	Joint	186	308	494	56.8
	Nuclear	145	231	376	43.2
Total		331	539	870	100

The table 7 revealed that, of the sample, 56% of students were from joint families, while 43.2% were from nuclear families.

Number of Siblings

The number of siblings was selected as a categorical variable. The sample was divided into three groups based on the number of siblings: zero sibling, one sibling, and two and above siblings.

Table 8

Split of the Sample on the basis of Number of Siblings

Categorical Variables	Categories	Age group		Frequency	Percentage
		3-4	4-5		
Number of siblings	Zero	63	91	154	17.7
	One	167	260	427	49.1
	Two and above	101	188	289	33.2
Total		331	539	870	100

From table 8, it is clear that, 17.7% of students have no siblings. Furthermore, 33.2% of students have two or more siblings, while 49.1% have only one.

Birth Order

The sample was classified into the first-born, middle-born, and last-born groups based on birth order.

Table 9

Sample Composition based on Birth Order

Categorical Variables	Categories	Age Group		Frequency	Percentage
		3-4	4-5		
Birth Order	First-born	145	233	378	43.4
	Middle-born	36	82	118	13.6
	Last-born	150	224	374	43.0
Total		331	539	870	100

Table 9 revealed that, the first-born students make up 43.4% of the sample, 13.6% of the middle-born students, and 43% of last-born students.

Father's Age

The sample was divided into four groups based on the father's age: 26 to 30, 31 to 35, 36 to 40, and 40 to 45.

Table 10

Split up of the Sample based on Father's Age

Categorical Variables	Categories	Age Group		Frequency	Percentage
		3-4	4-5		
Father's Age	26-30	28	45	73	8.4
	31-35	117	181	298	34.3
	36-40	121	206	327	37.6
	41-45	65	107	172	19.8
Total		331	539	870	100

Table 10 revealed that 8.4% of pre-primary students have fathers who are in the age group of 26–30. Furthermore, 19.8% of students have fathers in the age group of 41-45, 34.35% have fathers in the age group of 31-35, and 37.6% have fathers in the age group of 36-40.

Mother's Age

The sample was divided into four age groups: those between the age group of 21 and 25, those between the age group of 26 and 30, those between the age group of 31 and 35, and those between the age group of 36 and 40.

Table 11

Sample Composition based on Mother's Age

Categorical variables	Categories	Age Group		Frequency	Percentage
		3-4	4-5		
Mother's Age	21-25	44	67	111	12.8
	26-30	148	233	381	43.8
	31-35	92	161	253	29.1
	36- 40	47	78	125	14.4
Total		331	539	870	100

Table 11 revealed that, in the sample, 12.8% of mothers are between the age group of 21 and 25, 43.8% are between the age group of 26 and 30, 29.1% are between the age group of 31 and 35, and 14.4% are between the age group of 36 and 40.

Father's Education

The study's sample was divided into groups based on the father's education. Father's education was divided into four levels, high school level, higher secondary level, graduate level, and post-graduate level.

Table 12

Split up of the Sample based on Father's Education

Categorical Variables	Categories	Age Group		Frequency	Percentage
		3-4	4-5		
Father's Education	High school level	150	255	405	46.55
	Higher secondary level	62	98	160	18.39
	Graduate level	98	160	258	29.65
	Post Graduate level	21	26	47	5.40
Total		331	539	870	100

Table 12 revealed that, Fathers represent 46.55% of those who have finished high school education, 18.39% of those who have finished their higher secondary

education, 29.65% of those who have graduated, and 5.40% of those who have finished post-graduation.

Mother's Education

Mother's education consisted of four levels: high school level, higher secondary level, graduate level, and post-graduate level.

Table 13

Sample Composition based on Mother's Education

Categorical Variables	Categories	Age Group		Frequency	Percentage
		3-4	4-5		
Mother's Education	High school level	59	73	132	15.17
	Higher secondary level	87	161	248	28.50
	Graduate level	155	236	391	44.94
	Post Graduate level	30	69	99	11.37
Total		331	539	870	100

From table 13 it is clear that, mother's education comprised 15.17% of those with a high school level, 28.50% of those with a higher secondary level, 44.94% of those with a graduate level, and 11.37% of those with a post graduate level.

Tools and Techniques used for the Study

The study has three phases: qualitative, tool development, and quantitative phases. The interview schedule and observation schedule were prepared in the first phase. Furthermore, a mental health scale for pre-primary students was developed based on the data gathered from interviews, participant observation and literature review. During the quantitative phase, the data was collected using a mental health scale and a general data sheet. The investigator prepared the tools with the help of the supervising teacher.

Phase 1: Qualitative Phase

A semi-structured interview schedule for pre-primary teachers, special teachers, experts, and parents, as well as a participant observation schedule for pre-primary students, were employed for the qualitative phase. The following tools were used for data collection:

1. Semi-structured interview schedule for pre-primary teachers
2. Semi-structured interview schedule for special teachers
3. Semi-structured interview schedule for experts
4. Semi-structured interview schedule for parents
5. Participant observation schedule for pre-primary students

Techniques used for the Study

1. Interview
2. Participant observation

Description of the Tools

Semi-structured Interview Schedule for Pre-primary Teachers

In order to explore the indicators of pre-primary students' mental health, interviews with pre-primary teachers were undertaken. Based on the insights from the literature review and discussions with experts, a semi-structured interview schedule was developed. From the review, the investigator identified key themes and noted them as probes. The semi-structured interview covered the indicators of children's mental health as well as strategies for identifying mentally healthy children. The semi-structured interview schedule for pre-primary teachers in Malayalam and English version are included in Appendices A1 and A2.

Example Question:

1) How can we identify mentally healthy child?

Semi-structured Interview Schedule for Special Teachers

To learn more about the mental health of pre-primary students, interviews with special teachers were undertaken. The semi-structured interview included the definition, indicators, and measures for recognizing children who are mentally healthy as well as the state of children's mental health. From the review, the investigator identified key themes and noted them as probes. The semi-structured interview schedules for special teachers in Malayalam and English version are included in Appendices B1 and B2.

Example question:

1) What are the indicators of the mental health of pre-primary students?

Semi-structured Interview Schedule for Experts

Expert interviews were undertaken to investigate pre-primary students' mental health. The semi-structured interview included the definition, indicators, and measures for identifying mental health disorders related to children's mental health. From the review, the investigator identified key themes and noted them as probes. The semi-structured interview schedules for experts in Malayalam and English version are included in the Appendices C1 and C2.

Example question:

1) How can you define the mental health of pre-primary children?

Semi-structured Interview Schedule for Parents

In order to learn more about pre-primary children's mental health, interviews with parents were undertaken. The investigator conducted interviews with the parents to gather information about their children's developmental milestones, including relevant elements of their physical, emotional, social, cognitive and language development. The primary purpose of the semi-structured interview with parents was data triangulation and not examined separately. The semi-structured interview schedule for parents in Malayalam and English version are included in Appendices D1 and D2.

Example question:

1) How does the child interact with family members and others?

Participant Observation Schedule

The investigator carried out the participant observation in a classroom environment. The researcher gained a better understanding of the pre-primary children's physical, emotional, social, and cognitive development as a result of the observation. The information was utilized for data triangulation and was not examined separately. The observation schedule is included in Appendix E.

Procedure of Data Collection

For the qualitative phase, an exploratory sequential mixed methods design was employed. The study is divided into three stages: the qualitative phase, tool development phase and quantitative phase. The qualitative phase of the study aims to identify the indicators of mental health of pre-primary students through interviews with pre-primary teachers, special teachers, and experts. As part of the triangulation process, the investigator conducted interview with parents and participant observation of pre-primary students and the data collected was not separately analysed.

The interview's date and time were set once the participants granted consent. With the participants' permission, all of the interviews were audio recorded. Purposive sampling techniques were used to select the participants for interview. Interview samples were selected from Kozhikode, Malappuram, Ernakulam, and Alappuzha districts. A combination of one-on one and telephone interviews were conducted. The investigator mostly collected data via telephone interviews due to the COVID-19 lockdown period.

Every interview took between twenty and forty-five minutes. The collected data was transcribed for further exploration. For observation, sixty pre-primary students were selected from two pre-primary schools and two Anganwadis in Thrissur. Pre-primary students' mental health was indicated by the themes that

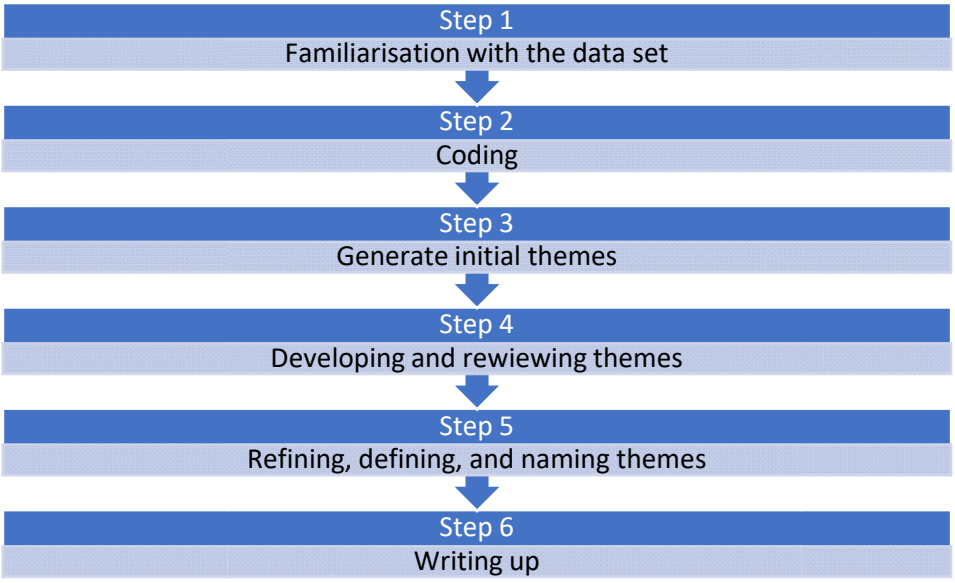
emerged from thematic analysis. The dimensions and sub-dimensions needed to build a mental health scale are represented by the themes and subthemes.

Procedure for Data Analysis

The investigator followed thematic analysis procedure by Brain and Clarke (2022). Inductive thematic analysis was employed and semantic coding was used for identifying the themes. The mental health scale was developed using themes that emerged from the interview. The six steps of the reflective theme analysis process are illustrated in the figure 5.

Figure 5

Six Phases of Reflective Thematic Analysis



(Source: Adapted from Braun & Clarke, 2022)

The first stage in thematic analysis was to become familiar with the data set, which was accomplished by reading over and transcribing the data. To find the codes, the transcribed data was examined and discussed with experts. After the identification of the initial codes, they were sorted into categories according to their attributes. Thus, initial themes were developed based on these sorted-out codes. In addition, the topics and their definitions were provided, and at last, the academic report was written. The themes and codes that emerged from the investigation were shown in table 14

Table 14

Themes and Codes Generated from the Data

Sl. No.	Themes	Codes
1	Physical functioning	Gross motor functioning Fine motor functioning Bowel and bladder functioning Pain Appetite Sleeping pattern Breathing pattern
2	Emotional competence	Emotional understanding Emotional expression Emotional regulation Positive emotions
3	Interpersonal relations	Interaction Relationship Participation Communication Play Co-operation Adaptation Leadership quality
4	Intrapersonal skills	Autonomy Empathy Self esteem Problem solving
5	Behaviour regulation	Rule compliance Turn taking Self-control Self-management Waiting Approval from others
6	Cognitive functioning	Questioning Identification Classification Memory Role play Attention Imitation Time concept
7	Language skills	Receptive language Expressive language

The seven derived themes were physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills.

Phase 2: Tool Development

In phase 2, a mental health scale was prepared, standardised and norms established. For tool development following steps were followed.

1. Planning and preparation of the scale
2. Writing of items
3. Method of responding and scoring procedure
4. Expert consultation
5. Item analysis
6. Estimation of reliability and validity
7. Establishment of norms

The investigator gathered data from pre-primary schools and Anganwadis in order to standardize the scale. Using a 5-point Likert-type scale that was reported by the teachers, information was collected from 1000 pre-primary students. Anganawadis and pre-primary schools in Thrissur, Malappuram and Ernakulam districts were selected for data collection.

Phase 3: Quantitative Phase

During the quantitative phase, the mental health levels of pre-primary students were assessed, compared mental health of pre-primary students with categorical variables, and the relationships between mental health and its dimensions were examined using the collected data.

Tools and Techniques used for the Quantitative Phase

For the qualitative phase, the following tools were used:

1. General Data Sheet
2. Mental Health Scale for Pre-primary Students

General Data Sheet

The pre-primary students' name, age, gender, types of family, number of siblings, birth order, father's age, mother's age and father's education and mother's education are all listed on a general data sheet. The General data sheet is enclosed in the Appendix F.

Mental Health Scale for Pre-primary Students

There are various tools for measuring children's mental health issues. Nevertheless, there aren't many resources accessible to evaluate child mental health as positive construct. Furthermore, there is no appropriate tool to measure pre-primary students' mental health in Kerala. As a result, the investigator developed and standardized a mental health scale for pre-primary students. The analysis chapter contained a thorough explanation of each step in the development of the mental health scale. The mental health scale is enclosed in the Appendix G.

Data Collection Procedure

For the final analysis, stratified random sampling technique was used to collect data from 870 pre-primary students. The investigator obtained information directly from Anganwadis in the districts of Thrissur and Malappuram, as well as from the teachers of pre-primary schools in the districts of Thrissur, Palakkad, Ernakulam, Malappuram, and Kozhikode. Prior to gathering the data, consent was obtained from the head of the pre-primary schools, the district women's and child development officer in Thrissur and Malappuram. The interviewees received

guarantees from the investigator on the confidentiality of the data. Each student had to be known to the teacher for at least three months in order to rate the student individually using the mental health scale that was provided to them. A detailed description of the procedures for completing the scale was given. The teacher should fill out the mental health scale for 3 or 5 randomly chosen students from their class. After the data was gathered, scoring was completed for further analysis.

Statistical Techniques used for the Study

For the study following statistical techniques were used.

1. ***Percentile***

   The percentile was used to find out the norms of the mental health scale. The score above the 75^{th} percentile is considered as high group and the score below the 25^{th} percentile is considered as low group.

2. ***Descriptive Statistics***

   Descriptive statistics such as mean, median, mode, standard deviation, skewness, and kurtosis of the variable were calculated, to ascertain the nature of the distribution of the variable.

3. ***Percentage Analysis***

   Percentage analysis was used to calculate the levels of mental health among pre-primary students.

4. ***The Test of Significance of the Difference between Means of two Independent Samples***

   It was used to compare the relevant variables between different groups (Garrett, 1979)

5. **Analysis of Variance (ANOVA)**

   This statistical technique was used to measure the variances across the mean scores of different groups.

6. **Correlation Analysis**

   Pearson's Product-Moment Coefficient of Correlation was used to measure the interrelationship between the mental health and its dimensions.

Ethical Considerations of the Study

Every attempt was made to uphold ethical standards throughout the research for the current study. The aim of the study was explained to the parents and teachers, and their agreement was requested before any data was collected. The gathering of data was done without interfering with the scheduled activities of the class. The participants were free to respond to the questions on the scale in any way that enabled them feel comfortable. Confidentiality was ensured since the name column was made optional for anyone who wished to complete the survey. It was guaranteed that anyone who were interested in learning more about the study's conclusions and outcomes would have the chance to do so. The investigator guaranteed complete privacy protection and kept the participants' identities hidden at all times during the study.

The methodology and procedure of the study are described in detail in this chapter. The following chapter provides a thorough explanation of analysis and interpretation.

Chapter 4

ANALYSIS & INTERPRETATIONS

- Phase 1: Qualitative Analysis
- Phase 2: Tool Development
- Phase 3: Quantitative Analysis

ANALYSIS AND INTERPRETATIONS

The analysis of the data and discussions focused on the mental health of pre-primary students. The study was divided into three phases, with phase one focusing on qualitative analysis to identify the indicators of the mental health of pre-primary students using thematic analysis. The second phase entailed the development of a mental health scale based on the indicators emerged from the thematic analysis. The third phase was a quantitative phase, which analysed the data to assess the levels of mental health of pre-primary students, compared the mean scores of mental health based on categorical variables, and examined the interrelationship between mental health and its dimensions.

Phase 1: Qualitative Analysis

Thematic Analysis

Thematic analysis was used to identify the pre-primary students' mental health indicators. Interview and participant observation were the main techniques of data collection during this phase. To identify the mental health indicators of pre-primary students, interviews were conducted with pre-primary teachers, special teachers, psychologists, psychiatrists, psycho-social counsellors, and teacher educators. Credibility of data were accomplished by data triangulation through interviews with parents and participant observation by the investigator. In data triangulation, “the researcher investigates whether the data collected with one procedure or instrument confirm data collected using a different procedure or instrument” (Ary et al., 2010, p.499). The thematic analysis procedure by Braun and

Clarke (2022) was employed to identify themes. Seven major themes and their corresponding subthemes emerged from the data analysis. Table 15 shows the major themes that emerged from the data.

Table 15

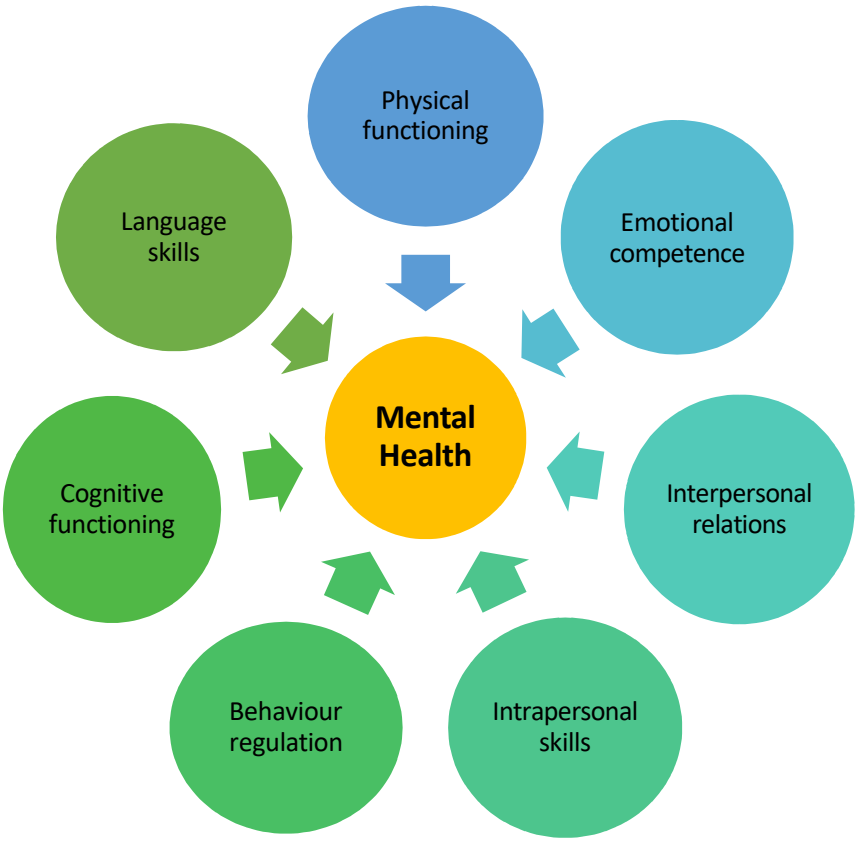
Major Themes Emerged from the Analysis of the Data

Sl. No.	Major Themes of Mental Health
Theme 1	Physical functioning
Theme 2	Emotional competence
Theme 3	Interpersonal relations
Theme 4	Intrapersonal skills
Theme 5	Behaviour regulation
Theme 6	Cognitive functioning
Theme 7	Language skills

The investigator coded the transcripts after carefully reading each one after the other. The data was carefully reviewed, and any unnecessary replies were eliminated. The further reading made it easier to put the codes in groups according to commonalities. With the assistance of experts, theories, and a comprehensive literature review, the investigator ultimately named all of the clusters with names that accurately reflect the themes. The themes that emerged from thematic analysis were indicators of mental health. Physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive function, and language skills are the seven themes that emerged from the data analysis. Figure 6 portrayed the seven themes of mental health.

Figure 6

Pictorial Representation of Major Themes of Mental Health



Each theme was further refined, and the responses that explained specific themes were reported and tabulated. The verbatim was provided exactly as written, or as close to as it is possible, to preserve uniqueness. The thematic analysis generated seven major themes. Each theme was described in depth as follows:

Theme 1: Physical Functioning

A critical indicator of the mental health of pre-primary students is their physical functioning. Experiences and views of pre-primary teachers, special teachers, and experts on indicators of the mental health of pre-primary students were all considered. Table 16 gives a comprehensive description of each theme.

Table 16

Subthemes of Physical Functioning

Theme	Subthemes	Examples
Physical Functioning	Sleeping pattern	♦ Adequate amount of sleep during daytime and night time
	Pain	♦ Not complaining of pain always
	Appetite	♦ No change in regular food habits
	Bowel and bladder functioning	♦ Acquire bowel and bladder control
	Breathing pattern	♦ No problems in breathing
	Gross motor functioning	♦ run, jump, climb ♦ Walk up and down stairs ♦ Participate in sports
	Fine motor functioning	♦ To do buttoning of shirt ♦ Thread beads onto a lace ♦ Controls a pencil in the preferred hand

Physical functioning was one of the main topics identified from the thematic analysis of the data, as can be seen in table 16. The examination of interview data found subthemes of physical functioning: sleeping patterns, pain, appetite, bowel and bladder functioning, breathing patterns, and gross and fine motor functioning.

Child's adequate sleep patterns, not complaining about various types of pain, good eating habits, adequate bowel and bladder functioning, a normal breathing pattern, and age-appropriate gross and fine motor functioning were all markers of physical functioning. The detailed elaboration of subthemes and their verbatim was given as:

In pre-primary years, a healthy sleep schedule was crucial for mental health. Children need to get enough sleep both during the day and at night in order to maintain their best physical and mental health. Pre-primary children needed 11 to 12

hours of sleep each night on average. Children who don't get enough sleep during the day or at night experience issues. It interferes with the child's regular growth. Children who had trouble falling asleep on time and staying asleep did so by sitting up in bed. Several pre-primary teachers stated that getting enough sleep is essential for a child's mental health. One of the teachers said that:

> […] Children often go asleep peacefully and on schedule. Children who have any kind of issue may have trouble going asleep, staying asleep during the night, etc…

Another subtheme pertaining to physical functioning was pain. The teacher reported that, children who do not have strong mental health constantly complain about different kinds of suffering. Appetite was another sign of mental health. Any deviation from their usual eating patterns might be a sign of mental health problems. Furthermore, appropriate bladder and bowel functioning would be developed at the pre-primary age. One of the special teachers mentioned:

> At this age, children learn how to use the toilet. When will they need to use the restroom, they will inquire. […] The troubled children exhibit problems with their bladder and bowel functioning. Some children struggle with bedwetting…

One of the special teachers reported that:

> […] it is possible to understand that the child is healthy by the activities they do in their life, if there is any mental health problem, there will be a change in their eating pattern…

The child's breathing pattern ought to be typical. The other indicator of mental health was not having problems with breathing. One of the experts reported that

> […] A child who is mentally ill may produce noises as they breathe, especially when they are asleep…

According to the majority of teachers, special teachers, and experts, pre-primary students have good motor functioning. Playing sports, running, leaping, climbing, and stair-climbing were examples of gross motor functioning. Additionally, children are able to do fine motor tasks such as buttoning shirts, threading beads into lace, and using a preferred hand to hold a pencil. One of the verbatims is as follows:

> Children will run and jump while playing […] They can participate in sports. They swing, slide, and walk through small, narrow beams. They always love to play….

One of the special teachers mentioned that:

> […] A mentally healthy child will also have physical health. They have gross and fine motor skills. The child can stand, walk, run, jump, and do all their daily activities […]. Even at three, the child can button one or two buttons on the shirt.

One of the teachers said that:

> Children can thread beads onto a lace, paint using the brush, and hold the brush. There are several activities that will improve their fine motor functioning. Children are asked to separate rice from green gram…

Physical functioning in pre-primary students includes their sleeping habits, appetite, pain, bowel and bladder functioning, breathing patterns, gross motor functioning, and fine motor functioning.

- Sleeping pattern means an adequate amount of sleep during day and night.
- Pain involves not always complaining of severe pain.
- Appetite refers to no change in the eating habits of the child.

- Bowel and bladder functioning involves acquiring control over both the bowel and bladder.
- The breathing pattern comprised the child's normal breathing pattern during the day and night.
- Gross motor functioning included running, jumping, climbing, walking up and down stairs, and participating in sports.
- Fine motor functioning consisted of buttoning off the shirt, threading beads onto a lace, and controlling a pencil in a preferred hand.

One of the indications of the mental health of pre-primary students was physical functioning, which comprised sleeping patterns, pain, appetite, bowel and bladder functioning, breathing patterns, gross motor functioning, and fine motor functioning.

Discussions

The data revealed that physical functioning was one of the indicators of pre-primary students' mental health. Pre-primary students' physical functioning comprised their sleeping patterns, pain, appetite, bowel and bladder functioning, breathing patterns, gross motor functioning, and fine motor functioning. The physical activities that children between the ages of three and five engaged in on a daily basis were referred to as physical functioning. The study indicated that pre-primary students' mental health was influenced by their physical functioning. Previous research by Reinfjell et al. (2006) and Ravens-Sieberer et al. (2005), which found that physical functioning was one of the criteria used to assess quality of life for children and adolescents, supports the results. The literature by Rodriguez Ayllon et al. (2019), Marsigliante et al. (2023), Biddle and Asare (2011), Garber et

al. (2010), and Duan-Porter (2021) has provided evidence in favour of the link between mental and physical functioning in children and adults.

The results of the study showed that sleeping patterns were one of the subthemes of physical functioning. During the pre-primary years, sleeping patterns were crucial for maintaining mental health. Pre-primary children needed 11 to 12 hours of sleep each night and throughout the day on average. The findings corroborated those of Paruthi et al. (2016), who stated that, in order to maintain excellent health, children between the ages of 3-5 need sleep 10 to 13 hours a day, including naps. Adhering to the recommended sleep schedule has been linked to better health outcomes, including better behaviour, attention, memory, learning, and emotional regulation, as well as better mental and physical health and quality of life. Children who consistently get less sleep than the recommended amount struggle with learning, behaviour, and attention, which causes problems both during the day and at night.

The results showed that another subtheme connected to physical functioning was pain. The subtheme, pain, was meant by not always complaining of severe agony. The outcome supported research by Tutelman et al. (2021), which discovered that children frequently have chronic pain, which is defined as pain that lasts longer than three months or is persistent or recurrent. According to Pate et al. (2017), the finding indicated that chronic pain affects children and adolescents often. There are various negative impacts associated with chronic pain, including reduced quality of life, absenteeism from school, worse reading scores, and emotional distress. Children who experience chronic pain are more likely to develop mental health difficulties such as sadness and anxiety and to misuse opioids.

The data revealed that appetite served as another indicator for mental health. The child's appetite indicated that there had not been any abrupt alterations to their

eating routine. Pre-primary children's sudden changes in appetite, such as overeating or lack thereof, may be a sign of mental health issues. According to Weinreb (2002), extreme child hunger has been linked to poor physical and mental health outcomes in pre-primary children. In pre-primary and school-aged children, severe child hunger has been linked to more serious internalizing behaviour problems and posttraumatic stress disorder.

Bowel and bladder functioning was identified as one of the subthemes of physical functioning. Children's development of control over both the bowel and bladder was linked to their bowel and bladder functioning. Additionally, the individuals reported that they had developed normal bladder and bowel functions before entering pre-primary school. In a prior study, Westwell-Roper (2022) investigated bowel and bladder issues. Neuropsychiatric diseases have been linked to bowel and bladder dysfunction in children, which is characterised by urgency, retention, incontinence, constipation, and frequent urination. Symptoms of bladder and bowel problems were frequent and associated with serious impairment from OCD and mental health conditions. Determining the signs of bladder and bowel dysfunction was essential to minimizing long-term effects on physical and mental health. Additionally, Santos et al. (2017) discovered that children with behavioural and neuropsychiatric issues such attention-deficit/hyperactivity disorder and autism spectrum disorder frequently had bowel and bladder difficulties.

The child's breathing pattern should be normal. The findings showed that the other sign of mental health was the lack of breathing problems. Barker et al. (2020) looked at dysfunctional breathing, which is described as deviations from typical biomechanical breathing patterns that have a major impact on functioning,

performance, and quality of life. According to Barker et al. (2018), abnormal breathing patterns, either occasionally or consistently, replace the normal relaxed respiratory cycle, resulting in disordered breathing.

According to experts, special teachers, and the majority of teachers, pre-primary students have strong motor functioning. Playing sports, running, leaping, climbing, and stair-climbing were examples of gross motor functioning. Children with mental illnesses showed impaired gross motor performance. According to research by EMCK et al. (2011), children with emotional, behavioural, and pervasive developmental disorders (PDD) have distinct patterns of deficiencies in their gross motor skills and physical fitness. Based on the results of the study, the children are also capable of fine motor skills like holding a pencil in a preferred hand, buttoning clothes, and threading laces with beads. In a recent study, Mendes (2018) found that reduced fine motor performance has been linked to many domains of psychopathology. Children with ADHD are inferior to normally developing children in every way when it comes to fine motor skills. Previous studies by Bart et al. (2007) and Carter et al. (2010) have found that early fine motor ability predicts school adaptation and social conduct during the pre-primary to primary school transition, and these behaviours are connected to mental health outcomes.

Theme II-Emotional Competence

The pre-primary teachers, special teachers and experts in the field of psychology and education have recognized the significance of emotional competence in the mental health of pre-primary students. The comprehensive view of the subthemes is given in table 17.

Table 17

Subthemes of Emotional Competence

Theme	Subthemes	Examples
Emotional competence	Emotional understanding	♦ Understanding the emotions of others ♦ Understanding the emotions of himself/ herself
	Emotional expression	♦ Child can express their emotions on face ♦ Child can express their feelings
	Emotional regulation	♦ Child can control their emotions ♦ The pattern of emotional response
	Positive emotion	♦ The child will always happy

Table 17 demonstrated that emotional competence was emphasized while discussing pre-primary students' mental health. Emotional understanding, emotional expression, emotional regulation, and positive emotions are the subthemes of emotional competence. Expressing the appropriate emotions was another essential element. Emotional regulation was a key component; the child learnt how to control their feelings and emotionally react in a way that other people could tolerate. The child consistently showed signs of happiness, suggesting that he or she was generally joyful and pleasant.

Pre-primary children required emotional understanding. A key component of emotional understanding was being aware of one's own and other's feelings. According to the participants, children are able to identify when their friends are sad and they try to comfort them. They can also comprehend the feelings of others. Additionally, the child can recognize their parents' and teachers' angry faces and respond appropriately. Moreover, they are aware of their own feelings. One of the teachers reported that:

> The child realizes when the other children are upset while they're playing and tries to cheer them up […]They rapidly comprehend when we get angry and respond accordingly...

Another component of emotional competence was emotional expressiveness. Emotional expression is the capacity of a child to communicate their feelings, including happiness, rage, and grief. The child's emotional competence required that they be able to communicate their feelings in a way that was suitable. A psychiatrist said that:

> If the child does not get what he wants, he will scream […] At this age, the child starts to communicate his feelings rather strongly...

One of the special teachers mentioned that:

> […] Children typically scream out to get what they want. They scream for toys, to buy something. They won't weep for no apparent cause. Children with mental health issues, on the other hand, are not like that. They have no idea why they are fussy. Furthermore, we are unable to comprehend why that is the case…

One of the experts reported that:

> We must see whether they show their feelings. When they want to weep, are they letting it out or suppressing it? Furthermore, are they verbally expressing their emotions? […]

Additionally crucial to pre-primary students' mental health is emotional regulation. The ability of children to gain emotional control and learn how to behave emotionally in a way that was acceptable to others was known as emotional regulation. Participants recognize the significance of controlling one's emotions. One of the verbatims is as follows:

> […] Some children cry a lot when they first get to school, but eventually they develop the ability to control their emotions, even when they are not with their parents…

An important component of mental health in the pre-primary period was positive emotions. A child who experiences positive feelings will be content most of the time. Children were happy with little things. A teacher reported that:

> A child in good mental health will constantly be content and act joyfully….

One of the special teachers said that:

> It is important to observe the child's feelings. Does the youngster act appropriately for the circumstances? Check to see if the child laughs when the circumstance calls for it and tears when the child should weep. Certain children weep when they're pleased and laugh when they're unhappy. These are the traits of a child with autism…

Emotional competence was based on a number of aspects, including emotional understanding, emotional expression, emotional regulation, and positive emotions.

- Emotional understanding implies an understanding of others' emotions and their own.
- Emotional expression entails expressing emotions and feelings appropriately.
- Emotional regulation is the ability of children to learn to control their emotions and emotionally react in a way that is acceptable to others.
- Positive emotions encompassed a child who always displayed positive feelings, indicating that he or she was primarily happy.

The need of emotional competence was emphasized while thinking about pre-primary students' mental health. Emotional expression, emotional understanding, emotional regulation, and positive emotions are some of the subthemes of emotional competence.

Discussions

The analysis of data revealed that emotional competence was a critical component of mental health. According to the findings of an earlier investigation conducted by Morkel and McLaughlin (2015), children's emotional competence develops during their formative years and is linked to both academic performance and overall well-being in later life. The present study revealed that a child's capacity for emotional understanding, emotional expression, emotional regulation and positive emotions was a sign of their emotional competence. Eisenberg, Cumberland, and Spinrad (1998) and Morkel and McLaughlin (2015) describe emotional competence as the capacity to recognize, regulate, and express emotions in a way that is appropriate for the situation and oneself as well as others. The findings indicate that emotional expressiveness, knowledge, and control are all necessary for emotional competence and are in line with earlier study by Denham et al. (2003).

The data revealed that emotional understanding entailed recognition of one's own emotions as well as those of others. Emotion knowledge, according to Denham et al. (2003) in a prior study, is the ability for children to identify, categorize, and name a range of emotions in both themselves and others. The results of this study are corroborated by a study conducted by Ashiabi (2000), which suggests that children need to comprehend the emotions of their play partners in order to recognize the communicative role of such emotions, whether

they are their own or someone else's. Furthermore, emotional understanding was necessary for survival.

It is demonstrated that adequate expression of feelings and thoughts was necessary for effective emotional expression. The results of the study were consistent with the emotional expressiveness study conducted by Morkel and McLaughlin (2015), which discovered that emotions were conveyed in a various forms and intensities. The findings of the present study also support the prior study by Ashiabi (2000), which found that children need to be able to express their emotions in social situations with adults and other children in a healthy way. Children's capacity to communicate their experiences and grasp fundamental emotions is essential for social relationships.

The results of the present research demonstrated that children's ability to gain emotional control and learn how to behave emotionally in a way that is acceptable to others was described as emotional regulation. Emotion management, according to the study by Denham et al. (2012), involved being conscious of one's emotions and adjusting them to match the situation while still expressing them in a healthy way. Children who have trouble controlling their emotions might not have the energy to concentrate on their education. On the other hand, those who are able to control their pleasant emotions could be better at participating in class activities. Teachers' evaluations of pre-primary students' academic development through kindergarten were also correlated with their capacity to retain emotional control and positive involvement (Denham et al., 2012). Another research by Ashiabi (2000) showed that children participate actively in the process of regulation over time, reacting to caregivers and eventually seeking out regulatory assistance consciously by crying and running to a caregiver when they are hurt.

The findings showed that when a child had positive feelings, they always showed them, demonstrating that their main emotion was happiness. Doan et al. (2023) claim that happy feelings provide a variety of advantages for mental health, such as improving wellbeing, fortifying cognitive processes, and mitigating the negative effects of stress. A study by Belfer and Muguira (2017) found that children who feel positive feelings more often are thus less likely to have behavioural and academic issues. Young children who are exposed to happy emotions have more opportunities to develop coping mechanisms and are better prepared to pick up new ones. Children are more likely to play and be creative when they are pleased. Children are therefore afforded greater opportunity to cultivate their social and communication abilities. The ability of pre-primary children to control their emotions and recognize the positive aspects of emotions was linked to their social effectiveness (Blair et al., 2004; Denham et al., 2003, as cited in Denham et al., 2012).

Theme III-Interpersonal Relations

Another theme developed from thematic analysis was interpersonal relationships. The majority of participants recognized that children's mental health was influenced by their relationships with others. Table 18 provides the details of the subthemes.

Table 18

Subthemes of Interpersonal Relations

Theme	Subthemes	Examples
Interpersonal relations	Interaction	♦ mingle easily with other children ♦ interact with adults
	Relationship	♦ Make friends with other children ♦ Show attachment towards the teacher
	Participation	♦ active in group ♦ shows interest in things one after the other
	Communication	♦ talk with others ♦ The child will share their experience
	Play	♦ Love to play ♦ Enjoy playing ♦ Play with friends using their favourite toys ♦ Play by himself
	Cooperation	♦ Share things with others ♦ Share toys while playing ♦ The child helps others while playing
	Adaptation	♦ Adapt to the situations ♦ The child can take in social situations ♦ Adjust with other children in the group
	Leadership quality	♦ Take leadership in group

Table 18 showed that interpersonal relations comprised interaction, relationship, participation, communication, play, cooperation, adaptation and leadership quality. The majority of pre-primary teachers, special teachers, and experts mentioned the significance of interpersonal relations in assessing pre-primary students' mental health. Good interpersonal relations are demonstrated by interacting with both adults and children, forming relationships with others, taking part in groups, communicating with others, enjoying playtime both alone and with others, sharing belongings with others, adjusting to new circumstances, and exhibiting leadership in groups. Children who were in good mental health have strong interpersonal relations.

One of the subthemes of interpersonal relations was interaction. Children build relationships with other children and engage with their teachers, classmates, and neighbours. The majority of participants stated that the children communicate with adults and other children with ease, suggesting that the child was in good mental health**.** Relationships were another critical component of interpersonal relations The child keeps up positive relationships with others. They make friendship with other children and express affection for their teachers. One of the verbatims was:

> […] make friendship with other children and communicate with others. The child will participate in sports, games, and academics […] establish relationships with other children. These served as the cornerstones for the pre-primary students' mental health. A child who is incapable of communicating will always be mentally unwell. The child fights with others all the time. Children are unable to think clearly or establish interpersonal relationships…

One of the teachers said that:

> The child needs to play and interact with other children. Don't be alone all the time. [...] Children are in good mental health and are constantly happy.

One of the special teachers reported that:

> Children will be very smart; they will congregate to play, socialize with other children, take part in games, participate in group activities.

Participation also demonstrated how crucial interpersonal relationships were. Participation refers to the child consistently engaging in groups and displaying interest in one subject after another. Pre-primary children, according to

the majority of participants, are continually involved in activities, play, and are lively in groups. One further essential subtheme was communication. Children effortlessly converse with others. They engage in polite conversation, communicate to parents about their experiences, and express their emotions to teachers. The teacher reported that:

> […] A child with good mental health will be pleased, talk well, interact with teachers, and talk about their experiences at home…

Play was a crucial component of interpersonal relations. Their development is significantly influenced by the play. Children enjoy playing. Play teaches them a number of social skills. They play with their beloved toys. Another essential element of interpersonal relationships was cooperation. While playing, children collaborate with one another. They give meals and gifts to other children. In groups, they adjust with other children. Interpersonal relations also heavily depend on adaptation. They are quick to adjust to novel circumstances. One more essential element was leadership. Children take charge in groups. One of the verbatims is as follows:

> […] We'll observe how the children play, how they communicate, and how close they are to one another. They will talk with other children and share anything they want with us…

One of the experts reported that:

> […] Age-appropriately engages in play activities with children of the same age, shares and receives objects, plays, laughs, responds to inquiries, and handles the child's needs. Children will demonstrate group leadership. Age-appropriate actions are signs of mental health**…**

Interpersonal relations included interaction, relationship, participation, communication, play, cooperation, adaptation, and leadership quality.

- Interaction consisted of children easily mingling with other children and interacting with adults.
- Relationships involve children making friendships with other children and showing attachment to the teacher.
- Participation refers to a child being constantly active in groups and showing interest in one thing after another.
- Communication means children talk with others and share their experiences with others.
- Play is comprised of the child loving and enjoying playing, playing with friends using their favourite toys, and playing by himself or herself.
- Co-operation encompasses children sharing things with others, sharing toys while playing, and helping others while playing.
- Adaptation means the child adapts to the situations, can take part in social situations, and adjusts to other children in the group.
- Leadership quality entailed that the child take leadership in groups.

It was emphasised how important interpersonal relationships are in assessing pre-primary students' mental health. Interaction, relationship, participation, communication, play, cooperation, adaptation, and leadership quality were indicators of good interpersonal relations.

Discussions

The data revealed that one of the indicators of pre-primary students' mental health was interpersonal relations. The results of Morales-Murillo et al. (2020) showed that interpersonal relationships are essential for young children's development. These interactions will have an impact on future learning and development at the cognitive, communicative, socio-emotional, and physical levels

long after a child is born. The development of social skills and emotion regulation techniques is aided by interpersonal relationships. These skills were acquired through close interaction and observation of peers' and adults' behaviours. In the early years, having positive interpersonal relationships is crucial, especially with primary caregivers. Constantly providing for the baby's needs—feeding, cleaning, speaking, rocking, and tender care—stimulates brain development(Morales-Murillo et al., 2020). Marvin et al. (2019) found that affectionate and sensitive interpersonal relationships with peers and adults in natural settings positively impact social, emotional, and cognitive outcomes.

The study discovered that children easily mingle with other children and interact with adults. Morales-Murillo et al. (2020) found that children's interactions with their surroundings (adults, peers, and materials) drive development and learning, especially in the early phases of development. The current study showed that relationships include children befriending with other children and showing attachment to their teachers. This result was in line with the study conducted by Guzman Holst et al. (2023), who found that peer relationships are critical to children's social and mental health. Even so, close friendships can support young people's mental health and resilience-building.

The findings of the study revealed that participation refers to a child is considered to be participating when they regularly interact with others in groups and demonstrate a recurring interest in various topics. In the previous study by Hwang et al. (2020), participation in daily activities has two dimensions: physical/virtual attendance and involvement. Attendance and involvement may impact children's mental health over the long run. According to Imms et al. (2015), participation consists of two essential components: attendance, which is

defined as being present and measured by the frequency of attendance as well as the range or diversity of activities, and involvement, which is the sense of participation experienced while attending. Involvement may include motivation, persistence, social connection, affective state, and engagement. Participation in meaningful life activities should be a critical intervention objective in order to meet the needs of healthy growth and development and to create opportunities that will help children with impairments realise their full potential throughout their lives (Imms et al., 2016).

The research revealed that children were seen as communicating when they interacted with others and shared their experiences. According to Dall et al. (2022), social communication effectively made use of and deciphered verbal and nonverbal cues to establish connections with others in a social setting. There is substantial proof that social communication abilities and mental health outcomes are related. Research with a longitudinal design has demonstrated that problems with social communication can result in mental health issues. The current study revealed that young children use play to learn and make sense of their environment. While having fun, they acquire vital cognitive, social, emotional, and physical skills. On the other hand, play has a bigger effect on a child's mental health in addition to early learning (UNICEF, n.d).

The results of the current study showed that sharing things with others, helping others, and sharing toys while playing were all regarded as cooperation in children. Eriksson et al. (2021) showed in their study that prosocial behaviour and cooperation were necessary for a society to function properly.

The study found that adaptation includes a child's ability to adjust to new circumstances, accept social situations, and get along with other children in the

group. The results aligned with the research conducted by Han (2023) which implied that when evaluating the mental health of elementary school pupils, adaptation is a crucial indicator, and life adaptation was the ability of humans to effectively and proactively modify their mental and physical states in order to better adapt to changes in their daily surroundings.

Life adaptation refers to the process in which individuals can actively and effectively adjust their physical and mental state to coordinate themselves with the new living environment when the daily life environment changes.

The current study revealed that a child with leadership qualities would take charge of the group**.** The results align with earlier studies by Klevering and McNae (2018) and Savenkova et al. (2020), suggesting that leadership manifests in later preschool-age children possessing a set of personal qualities that enable them to play leading roles in games, manage other children's activities, and shape their behaviour.

Theme IV-Intrapersonal Skills

Intrapersonal skills were crucial factors that determined the mental health of pre-primary students. The participants identified that mentally healthy children have intrapersonal skills. The subthemes of intrapersonal skills are given in table 19

Table 19

Subthemes of Intrapersonal Skills

Theme	Subthemes	Examples
Intrapersonal skills	Autonomy	♦ keep their things in proper place (bag, books, water bottle, shoes, toys, lunch box) ♦ Independent in daily activities ♦ have definite choices for food, dress ♦ have their own opinions ♦ ask for their needs (water, food, toys) ♦ get up by themselves when they fall down
	Empathy	♦ Love each other ♦ Helping mentality
	Self-esteem	♦ be confident ♦ have the courage to tell their opinions ♦ express their ideas ♦ praise themselves ♦ courage to try ♦ courage to fail ♦ have a preference for their things
	Problem-solving	♦ Solve the issues on his/her own while playing

Table 19 shows that the majority of teachers, special educators, and experts reported that intrapersonal skills are a significant predictor of good mental health. The components of intrapersonal skills include autonomy, empathy, self-esteem, and problem-solving.

Autonomy was one of the components of intrapersonal skills. Autonomy refers to the ability to keep their belongings in the right place; children have independence in their daily activities. They have their own choices. Eat, dress, and wash their hands by themselves. They can ask for their needs. Empathy was another indication of intrapersonal skills. Children have empathy for others. Empathy is comprised of loving each other and having a helping mentality. One of the participants explained that:

> […] The child will go to the toilet independently, pull up his trousers, and ask if he wants to urinate. Furthermore, the child eats neatly on his own. They have their own choice and plan and wear matching clothes…

Self-esteem was one of the components of intrapersonal skills. Self-esteem entails confidence and the courage to express one's opinions, to try and fail, to communicate one's ideas, to praise oneself, and to prefer one's things. Problem-solving was another indicator of intrapersonal skills. Children have problem-solving capacity. They can solve the minor problems they are facing. One of the experts reported that:

> […] The child will be very confident, participate in everything, and adjust to other children in the group […] They have leadership qualities and will help and sympathize with their fellow children when they fall during play.

The teacher said that:

> […] A child with good mental health will be energetic and enthusiastic to play. Bring their bags, carry their lunch box and water bottle and keep them in the proper places. They independently do their daily activities and have their own opinions….

One of the special teachers explained that:

> […] Children can make decisions. They are very independent. They choose their food and dresses…

Intrapersonal skills incorporated autonomy, empathy, self-esteem, and problem-solving.

- Autonomy refers to the child keeping their things in a proper place (bag, books, water bottle, shoes, toys, lunch box), being independent in daily

activities, having definite choices for food, dressing, having their own opinions, asking for their needs (water, food, toys), and getting up by themselves when they fall down.

- Empathy is comprised of a love for each other and a helping mentality.
- Self-esteem involves having the child be confident, have the courage to tell their opinions, express their ideas, praise themselves, have the courage to try, have the courage to fail, and have a preference for their things.
- Problem-solving entailed that the child solves the issues on his or her own while playing.

Intrapersonal skills were emphasised as necessary for assessing the mental health of pre-primary students. They have autonomy, empathy, self-esteem and problem-solving skills.

Discussions

The study found that a crucial element of the mental health of pre-primary students was their intrapersonal skills. Subthemes derived from the thematic analysis included autonomy, empathy, self-esteem, and problem-solving as intrapersonal skills. According to Skills (2011), intrapersonal skills are innate qualities or aptitudes that help a person solve problems, Intrapersonal skills include self-control, the capacity to handle and get past distractions, and the adaptability to change approach when necessary.

One of the subthemes of intrapersonal skills in the current study is autonomy. This conclusion was corroborated by Dewi (2018), who asserted that children's autonomy, particularly during their formative years, was an essential

aspect of their development. Early childhood is the time when children are meant to become independent and no longer need help from their parents or other adults. Autonomy was defined by Dyke (n.d.) as the absence of outside influence or control. It has to do with our capacity to decide what we do and how we do it. Providing children with autonomy can help them grow important skills like problem-solving, critical thinking, and decision-making.

Empathy was recognised as a significant subtheme. Love for one another and a helping mindset are the foundations of empathy. The ability to feel and understand the emotions of others, or empathy, was found to be a factor in socio-emotional adjustment in the earlier study. The age and personality traits of children were positively correlated with their empathy. Understanding other people's emotions can lead to an emotional response known as empathy (Eisenberg et al., 2006, p. 647, as referenced in Simon & Nader-Grosbois, 2021). According to Hoffman (2000), empathy is an affective reaction that is better suited to the circumstances of another person than one's own.

Self-esteem was another subtheme of intrapersonal skills. A child with high self-esteem would be self-assured, brave enough to voice their thoughts and opinions, able to praise themselves, and courageous enough to try new things, fail, and have preferences for their things. The results of the study were in line with a study by Teets (2023), which discovered that giving children the freedom to make their own decisions helps them grow in confidence and boost their self-esteem.

One essential component of intrapersonal skills was problem-solving. It involves when a child solves problems while playing and he or she is solving problems on their own. This result was in line with the study by Sam (2021), which discovered that children's development of problem-solving abilities was crucial. The

way a child handles and resolves problems at home and at school may have an effect on how well-liked they are by others. Furthermore, solving problems encourages creativity, which is necessary for success in later life. Throughout the preschool years, problem-solving skills frequently surfaced. The ability to solve problems is crucial for children's cognitive development.

Theme V-Behaviour Regulation

Behaviour regulation was one of the indications of the mental health of pre-primary students. Most of the participants reported that a mentally healthy child can regulate their behaviour. The subthemes of behaviour regulation are shown in table 20

Table 20

Subthemes of Behaviour Regulation

Theme	Sub-themes	Examples
Behaviour regulation	Self-control	♦ Self-control according to the situation ♦ Express their anger through words
	Rule compliance	♦ Obey the instructions of others ♦ Understand the norms of class ♦ Follow rules ♦ Correct others to follow rules
	Ask for consent	♦ The child asks consent to take things
	Turn Taking	♦ The child will keep turns while playing
	Waiting	♦ The child will wait until their needs are met
	Self-management	♦ Have neatness ♦ Do things in a disciplined manner ♦ will be punctual in their things ♦ withdrawal from negative situations
	Approval of others	♦ The child like to be accepted by others ♦ The child like to be accepted by friends

Table 20 revealed a detailed description of the subthemes of behaviour regulation. One of the elements that determined mental health was behaviour regulation. The behaviour regulation included self-control, rule compliance, asking for consent, taking turns, waiting, self-management, and the approval of others.

Self-control was one of the components of behaviour regulation. Self-control consists of controlling oneself according to the situation and expressing one's anger verbally. Rule compliance was another indication of behaviour regulation. Rule compliance consists of obeying others' directions, understanding classroom norms, following rules in the classroom and other public places, and correcting others to follow rules. One of the participants reported that:

> […] The child behaves according to the situation and can follow the rules. If other children break the rules, correct them…

Asking for consent was an important factor in behaviour regulation. Asking for consent entailed that the child ask consent to take things. Take turns was another indication of behaviour regulation. Taking turns means that the child will keep turn while playing. Waiting was also an indication of behaviour regulation. Waiting was described as the child's willingness to wait until their needs were met. One of the special teachers explained that:

> The child will have good social behaviour, share things, cooperate, be patient, and wait his turn…

One of the experts said that:

> Adjust with other children in the group, take turns, follow the rules, and react if other children need to follow the rules. They ask for consent, and children will express their needs…

Self-management was an essential component of behaviour regulation. Children who good mental health have self-management. Self-management included

having neatness, do things in a disciplined manner and will be punctual in their things Children are punctual in their activities, and they are neat. They do things in a disciplined manner and they withdraw from negative situations. Approval from others was also a components of behaviour regulation. Mentally healthy the children want to get approval from others, teachers and parents. One of the verbatims:

> Children will stay away from situations they do not like. They behave well toward the teacher. They maintain cleanliness, and they dress neatly. If the hand gets dirty, the child will immediately wash...

One of the special teachers said that:

> […] Children are the ones who mostly want to get attention, be it from their parents or teachers. They desperately want to be cared for […] if we hold them, they will enjoy, and if we give them reinforcement, they will be pleased...

Self-control, rule compliance, asking for consent, taking turns, waiting, self-management, withdrawal from negative situations, and approval of others were all part of the behaviour regulations.

- Self-control consisted of the child controlling themselves according to the situation and expressing their anger through words.
- Rule compliance involved having the child obey the instructions of others, understand the norms of the class, follow rules, and correct others to follow rules.
- Asking for consent entailed that the child ask consent to take things.
- Taking turns means that the child will keep turning while playing.
- Waiting was described as the child's willingness to wait until their needs were met.

- Self-management included having neatness, doing things in a disciplined manner, being punctual in their things and withdraw from negative situations.
- Approval of others refers to the child liking to be accepted by others, and the child likes to be accepted by friends.

Behaviour regulation was one of the factors that determined the mental health of pre-primary students. It required self-control, rule compliance, asking for consent, taking turns, waiting, self-management, and the approval of others.

Discussions

The result revealed that one of the most important factors in assessing pre-primary children's mental health is behaviour regulation. Self-control, rule compliance, asking for consent, taking turns, waiting, self-management, and the approval of others were all necessary for behaviour regulation. The outcome was in line with Wang and Barrett's (2021) study, which showed that early regulatory behaviour formation was essential for equipping children with real-world skills to control such opposing impulses and adhere to developmentally appropriate goals. The studies by Winsper and Wolke's (2014) and Cook et al. (2019) found that behavioural dysregulation manifested as persistent weeping, impatience, and difficulties with eating and sleeping. Dysregulated behaviour during childhood (ages 4 to 9) is significantly correlated with persistent crying, sleep problems, and feeding difficulties. Moreover, children are expected to self-regulate their behaviour, even in emotionally charged situations (Wang & Barrett, 2021).

Self-control was the most important component of behavioural management. In order to exercise self-control, a child had to verbally express their anger as well as regulate their impulses, emotions, and physical behaviour depending on the circumstances. In an earlier study, Tao et al. (2014) suggested that children's ability

to exercise self-control is essential to their success in a variety of life tasks. Early exercise of self-control improved preschoolers' emotional, social, and intellectual development.

Rule compliance emerged as a subtheme of behaviour regulation from the study. The child had to follow rules, comprehend class norms, obey directions from others, and correct others when they didn't follow the rules in order to be in compliance. Wang and Barrett's (2021) study suggests that socialisation is the process of controlling one's behaviour in accordance with social norms, enabling children to become well-adjusted members of society. Assimilation into society is especially dependent on adhering to a set of socialised rules and responding appropriately when someone breaks the rule.

The study indicated that a crucial behaviour regulation subtheme is taking turns. Playing by turns meant that the child would take turns. The results supported by the study of Beck (2022), which showed that social-emotional development included learning to take turns. In a conversation, Beck (2022, para. 2) defines turn-taking as "the act of taking turns in a situation, or even sharing space and time with another individual." Another subtheme that arose from the investigation was waiting. The child's willingness to hold off until their needs are satisfied was defined as waiting. Children are expected to wait a lot during the preschool day, according to Beck (2022). A child may be waiting for something to eat, to go potty, for a change of clothes, for a toy, or for their turn in a game.

The study found that taking turns was an essential subtheme of behaviour regulation. Taking turns meant that the child would take turns while playing. The findings corroborated Beck's (2022) study, which demonstrated that learning to take turns was a part of social-emotional development. Beck (2022) defines turn-taking

as "the act of taking turns in a situation, conversation, or even sharing space and time with another individual." Waiting was another subtheme that emerged from the study. Waiting was described as the child's willingness to wait until their needs were met. According to Beck (2022), children are expected to wait frequently throughout the preschool day. The child could wait for a snack, to use the restroom, through a changeover, for a toy, or their turn in a game.

The results of the study indicate that behaviour regulation was another central subtheme of self-management. A child that practises self-management will keep their environment neat, follow rules, and arrive on time for activities. In the earlier study, Howley-Rouse (2020) pointed out that self-managing learners could make decisions, keep trying, figure out problems on their own, gather materials to support their play ideas, and use social skills to ask for assistance from others. The aim of self-management is to help the child become self-regulatory instead of teacher-regulatory, or to be free to follow their own path instead of following rules set by teachers.

According to the study's findings, self-management is an essential subtheme of behaviour regulation. Self-management entails the child being neat, doing things in a disciplined manner, and being punctual in their activities. Howley-Rouse (2020) noted in the previous study that self-managing learners could make choices, keep trying, solve issues on their own, obtain assets to facilitate their play ideas and use social skills to ask for the help of others.

The acceptance of others was a further subtheme. The approval of others was the desire of a child to be accepted by peers and other people. Rudolph et al. (2005) claim that the children have a greater need for approval, that is, their self-worth is more dependent on social approval than older children. Higher levels of social

competence and lower levels of emotional discomfort were associated with positive approval-based self-appraisals.

Theme VI-Cognitive Functioning

Cognitive functioning in children is vital in determining their mental health. A mentally unhealthy child cannot reach their full potential. The subthemes of cognitive development are shown in table 21.

Table 21

Subthemes of Cognitive Functioning

Theme	Sub-themes	Examples
Cognitive Functioning	Questioning	♦ ask doubts according to the situation ♦ Give responses to questions when asked ♦ While telling stories, the child will ask questions related to it
	Imitation	♦ Child imitates others
	Roleplay	♦ The child act as cartoon characters, parents, teachers
	Identification	♦ Identify colours ♦ Identify letters ♦ Identify gender ♦ Identify body parts ♦ Identify pictures ♦ Identify hen and chick, cat and kitten etc.
	Classification	♦ Classify same colour things ♦ Classify objects with the same shape ♦ Classify big and small things
	Memory	♦ Remember and talk about previous incidents ♦ Good memory
	Attention	♦ Pay attention to the instructions ♦ Concentrate on their activities
	Imagination	♦ The child will create their imagination while talking ♦ Child add their imagination while telling stories
	Time concept	♦ Child knows about food timing ♦ Child knows the time when parents return from work

Table 21 gives a detailed description of subthemes of cognitive functioning. Cognitive functioning is one of the most essential measures of mental health. Cognitive functioning was described as questioning, imitation, role play, identification, classification, memory, attention, imagination, and time concepts.

Asks doubts and questions based on the situation, responds to others' questions, imitates others, recognises colours, alphabet, gender, body parts, pictures, and classifies same colour, shape, and big and small. The child has a good memory, remembers prior occurrences, pays attention to people and concentrates on work, has a good imagination when talking and telling stories, and has a good sense of time.

Questioning was one of the factors in cognitive functioning. The subthemes of questioning were that children always have a questioning nature. They always have doubts about everything. They learn through questioning. Imitation is an important component of cognitive functioning. Children also have an imitation capacity, and they imitate others. Role play was another important factor. Role plays implied that the child would act as cartoon characters, parents, or teachers. One of the participants said that:

> […] Children are good at asking questions about what they see around them and relating to stories we tell them…

A teacher reported that:

> […] Children imitate others well from a young age. Parents are their first role models, and they imitate their parents, teachers and other children in their school...

One of the experts said that:

> […] Children often roleplay their favourite people and cartoon characters. Moreover, they have a good imagination. They add to their imagination while telling stories or incidents. They identify gender differences at this age…

Identification is one of the most important components of cognitive development. Identification meant that the child recognised colours, the alphabet, gender, body parts, and drawings. Classification also determines the cognitive functioning of mental health. Classification involved the child classifying objects of the same colour, objects of the same shape, and big and small objects. Memory also determines behaviour regulation. Children can memorize songs, stories and situations. Furthermore, attention is important for the mental health of pre-primary children. They have good attention capacity; they have good grasping capacity. The special teacher said:

> […] The child can pay attention in class for about 10 minutes. Moreover, they have a good memory. They can remember incidents and stories that have happened or been told.

One of the experts said that:

> […] Children can identify colours, letters, and pictures and have a time concept. Children are aware of the time when parents go to work and when they return from work.

One of the special teachers reported that:

> […] Pre-primary children can identify pictures; that is, they can identify the images of fruits, vegetables, birds, etc. Children of pre-primary age can identify things that are big and small. They also do matching…

Imagination also determines the mental health of pre-primary students. Children have imaginative skills. They add their imagination while storytelling. Time concepts also play an important component of mental health. The child will have a time concept. They know when to play when their mother returns from work, when to eat, and when to go to home. A special teacher reported that:

> […] The children had an understanding of time and could know exactly what time to go to the toilet and eat food...

Cognitive functioning was identified as questioning, imitation, role play, identification, classification, memory, attention, imagination, and time concepts.

- Questioning meant the child would express their doubts based on the situation, respond to inquiries, and ask about stories while being told.
- Imitation indicates that the child imitates others.
- Role play implied that the child would act as cartoon characters, parents, or teachers.
- Identification meant that the child recognised colours, the alphabet, gender, body parts, and drawings.
- Classification involved the child classifying objects of the same colour, objects of the same shape, and big and small objects.
- Memory entailed the child remembering and discussing prior occurrences and having an excellent memory.
- Attention meant that the child needed to pay attention to the instructions and concentrate on their activity.
- Imagination encompassed the idea that the child would use their imagination when conversing and to further elaborate on the stories they were telling.

- Time concepts consisted of the child's understanding of time, including when to eat and when parents got home from work.

Cognitive functioning was one of the most significant markers of mental health. Questioning, imitation, role play, identification, classification, memory, attention, imagination, and time concepts were all described as cognitive functioning.

Discussions

The findings of the study revealed that pre-primary students' mental health was significantly predicted by their cognitive functioning. Questioning, imitation, role-playing, identification, classification, memory, attention, imagination, and time concepts are all considered aspects of cognitive functioning. The results align with the research conducted by Jia et al. (2021) implied that children in the preschool years learn and develop cognitively at the fastest rates, making this period of time crucial.

Questioning was one of the subthemes of cognitive functioning. A prior study by Salmon and Barrera (2021) found that children learn to be active meaning-makers and uncover their curiosity through the questions they ask. One of the most important mental skills is the ability to ask questions. Students who become adept at asking probing questions take control of their education. A child might reply to an action with a question. Effective questioning supports the development of theories of mind and the co-construction of knowledge by educators and students. Imitation was found to be a subtheme in the current study that described cognitive functioning. A child imitating other both verbally and nonverbally is referred to as imitation. Fenstermacher and Saudino (2016) found that imitation by young children was often used as a gauge for their early social and intellectual development. During early childhood, imitation is a significant and effective learning strategy.

Role play was another important component of cognitive development. In role plays, children would pretend to be teachers, parents, or cartoon characters.

Children's social-emotional development and progressive growth can be positively influenced by role play (Lillard et al., 2013, as cited in Wirahandayani et al., 2023). Children would pretend to be different people or characters in role-playing games that mirrored imagined or real-life situations. It involved using creativity and imagination to bring certain roles to life while acting them out (Lewis, n.d.). A previous study by Bonilla-Sánchez et al. (2022) described that engaging in role-playing activities promoted the growth of all psychological processes, including the establishment of affective-emotional bonds and the upholding of social roles. Preschoolers' main activity was role playing; with the help of adults or an instructor, it guided the development of the symbolic function and enabled the application of the concept of the child's zone of proximal development.

A crucial element of cognitive development is identification. Identification meant that the child recognised colours, the alphabet, gender, body parts, and drawings. The outcome was in line with the study of Zaeni et al. (2020), state that pre-primary aged children’s development depends on their ability to recognise colours and geometric shapes. Another important aspect of cognitive development is classification. During the classification process, the child had to group objects according to their colour, shape, and size. According to Aslan and Aktas (2010), categorising geometric shapes and how they recognise and classify them is essential for determining the geometrical thinking.

The current study found that memory is an additional factor influencing the cognitive functioning of pre-primary students. A child's ability to recall, talk about past events, and have a strong memory are all related to memory. Haden et al. (2010) discovered that long before they are able to verbally communicate their experiences, young children's behaviour reflects their memory capacities. Fitamen et al. (2019) demonstrated that working memory, an essential component of human

cognition, grows throughout childhood and is a strong indicator of academic performance and cognitive development.

Attention was another essential component of cognitive functioning. The child's ability to pay attention to instructions and focus on their task was defined as attention. Though preschoolers' inattention was common, a recent study by Mahone and Schneider (2012) found that symptoms by themselves may not always indicate a disease and most often represent a normal deviation in typical preschool child development. According to earlier study by White et al. (2009), attention included a variety of crucial cognitive functions that quickly develop in preschool, such as focusing and attending to stimuli over time and absorbing and reporting back information shortly after it is presented. Attention was the foundation from which many other cognitive and neuropsychological skills develop (Cooley & Morris, 1990).

Imagination was crucial in cognitive functioning. When a child is imaginative, they use it to elaborate on stories they are telling and to converse. As per the earlier research, imagination is a cognitive process that generates novel concepts from preexisting ones. It is employed not only for imaginative and creative purposes but also in daily thoughts. Preschoolers' pretend play demonstrates their imaginative abilities (Kushnir, 2022).

The concept of time also influences cognitive functioning. Time concepts were the child's understanding of time, such as when to eat and when parents returned home from work. According to earlier research by ErgisiBirgul et al. (2017), early childhood is when the idea of time transitions from simple to complex. Children can learn to discriminate between day and night more quickly.

Theme VII-Language Skills

Language skills are another critical factor that contributes to mental health. It consisted of receptive and expressive language. It consisted of receptive and expressive language. The subthemes of language skills are shown in table 22.

Table 22

Subthemes of Language Skills

Theme	Sub-themes	Examples
Language skills	Receptive language	♦ The child listens to the surrounding sounds ♦ The child can listen to the class for at least 10 minutes ♦ Listen carefully to the instructions given to the child
	Expressive language	♦ The child can express their thoughts into words ♦ Tell names of their family members ♦ The child can name familiar objects ♦ Speak clearly ♦ Tell stories ♦ Sing songs ♦ Even strangers can understand what the child is talking about ♦ The child can make sentences with four or more words

Language skills were another crucial indicator of mental health. It included receptive and expressive language. The child understands what others say and can express their thoughts in language. The child can give the names of family members and familiar things, speak clearly, tell stories, and sing songs, and even strangers can comprehend what the child is saying. Listening skills involve the child listening to the surroundings, listening to the class for at least 10 minutes, and paying close attention to the directions given to the child. Language skills are fundamental to their development. Children have both receptive language and expressive language skills. The child can speak clearly. The expert said that:

> Suppose children take longer than usual to communicate something, have difficulty understanding what is being said, lack speech clarity, and have difficulty speaking. These issues should be properly addressed…

One of the special teachers reported that:

> […] If the children are asked questions, it is okay if the answers are correct or related to the questions. Some children will not answer their questions, and they will keep saying something else. Now, if we are telling a story, we will ask questions within it or understand the children's response by asking the characters' names in the story, what they said etc…

The children can tell stories, and they sing songs. They can tell their name and their family member's name. The child can tell the names of familiar birds and animals. One of the special teachers reported that:

> It will look at the speech capacity of the child, how much the child is responding, and how much the child knows and is responding. Then comes picture reading […] Can the child say his name and that of his friends and family members? It is usually seen if the child can name the familiar animals, birds, and objects they see. When the child shows difficulty in all of these, the child becomes problematic or notable…

The teacher said that:

> Children can express their feelings through words. They share what they genuinely want to share.…

One of the experts said that:

> If the child is mentally healthy, they can interact with others, he can say his name, sit for about 5-10 minutes, listen to us, and look at our faces when we speak. If the instructions are given, the child can understand them…

One of the experts reported that:

> We need to see if we can talk to the child. When telling him the story, does the child listen to it? The child can keep these in memory. Children will look at our faces when we talk.

Language skills comprise receptive, expressive, speaking, and listening skills.

- Receptive language means that the child can understand what others say, listening to the surrounding sounds; listening to the class for at least 10 minutes; and paying close attention to the directions provided to the child.
- Expressive language implies that the child can express their thoughts into words by naming family members, naming familiar things, speaking clearly, telling stories, singing songs, and using sentences of four or more words. Even strangers could comprehend what a child was saying.

Language skills were another important indication of mental health. It covered receptive language and expressive language.

Discussions

Language skills were among the most critical indicators of pre-primary students' mental health. It covered both receptive and expressive language. According to a prior study by Baardstu et al. (2023), shy preschoolers who exhibited less social play behaviour and less proficient language had an increased chance of experiencing anxiety issues in the future. On the other hand, shy children who demonstrated stronger language skills and social play behaviours were protected from anxiety issues in the future. Proficiency in language is crucial for achieving success in school and for developing writing and reading skills. Children's social skills and ability to interact with others are also aided by their language abilities. Because early language skills are associated with higher academic achievement and

social engagement, they have been used as a measure of wellbeing. Language skills were evaluated using measures of both receptive and expressive vocabulary as well as narrative skills (Riad et al., 2023).

The results of the study indicate that receptive language is essential to language proficiency. In order to be receptive in language, a child must be able to understand what others are saying, pay close attention to instructions, listen for at least ten minutes in class, and be aware of their surroundings. Receptive language dysfunction was identified in the earlier study by Moyle and Long (2021) as being characterised by challenges with language comprehension. It may be difficult for someone to comprehend spoken, written, gestural, and symbolic language systems.

Equally important to language proficiency is expressive language. The child could express themselves verbally by naming members of their family, naming familiar objects, speaking clearly, narrating stories, singing songs, and using sentences consisting of four or more words. Even strangers could understand what a child was saying. In the previous study, expressive language is defined as the means by which a child communicates for daily needs, desires, and emotions (Frazier, 2011). Examples of expressive language abilities include written and spoken language as well as body language, such as sign language and facial expressions of emotion.

Defining the Mental Health of Pre-primary Students from the Seven Themes that Emerged from Thematic Analysis

The mental health of pre-primary students was defined by the seven themes that emerged from the thematic analysis. The mental health of pre-primary students is defined as the optimal development of physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills.

Phase 2: Tool Development

The mental health indicators of pre-primary students were identified through thematic analysis. These indicators were then validated using theories and a thorough literature review. Then, a mental health scale was created based on these indicators with the help of the supervising teacher. Since the students were too young to self-report, a teacher-reporting scale was designed to assess their mental health. This scale consists of seven dimensions: physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulations, cognitive functioning, and language skills. The following is a description of the various stages involved in the development of the mental health scale:

1. Planning and preparation of the scale
2. Writing of items
3. Method of responding and scoring procedure
4. Expert consultation
5. Item analysis
6. Estimation of reliability and validity
7. Establishment of norms

Planning and Preparation of the Scale

From the review of related literature, the investigator found that very few studies were conducted on pre-primary students' mental health. As no suitable tool was available to assess the mental health of pre-primary students in the context of Kerala, the investigator developed a standardized mental health scale for pre-primary students and established norms. The strength and difficulty questionnaire by Goodman (1997) and preschool and kindergarten behaviour scales by Merrell (1994) were used as model tools to create this tool. From the thematic analysis and reviewing relevant theories and related literature, the investigator confirmed seven dimensions of the mental health of pre-primary students. The following are the seven dimensions of the mental health of pre-primary students generated from the study.

1. Physical functioning
2. Emotional competence
3. Interpersonal relations
4. Intrapersonal skills
5. Behaviour regulation
6. Cognitive functioning
7. Language skills

Physical Functioning

Physical functioning refers to the physical activities that pre-primary children engage in as part of their daily activities. It consists of gross motor functioning, fine motor functioning, bowel and bladder functioning, pain and appetite. Gross motor functioning included running, jumping, climbing, walking up and down stairs, and participating in sports. Fine motor functioning was measured by buttoning off the shirt, threading beads onto a lace, and controlling a pencil in a preferred hand. The proper control over the bowel and bladder measured bowel and bladder functioning. Pain included the statement of not constantly complaining about various types of pain. No change in the food habits refers to appetite.

Example. 1) The child can hold the brush, pen or pencil properly and draw.

Emotional Competence

Emotional Competence mainly focuses on emotional understanding, emotional expression, emotional regulation and positive emotion. Emotional understanding deals with the understanding of the emotions of others and their own. Emotional expression is measured by appropriately expressing emotions such as sadness, anger and happiness. Emotional regulation is related to children's ability to control their emotions when needed and their pattern of emotional response. Positive emotions include the child being happy most of the time.

Example. 1) The child can understand when friends are sad.

Interpersonal Relations

Interpersonal relations are interaction, relationship, participation, communication, play, cooperation, adaptation, and leadership quality. Interaction refers to the child mingling with other children and interacting with peers, teachers, and neighbours. The relationship included statements about friendship with other children and showing attachment to the teacher. Participation involved the statements of the child, who was active in groups and showed interest in activities one after the other. Communication is measured by talking with others quickly and sharing their experiences with teachers and parents. Play components include the child's love to play. Cooperation was made up of statements about sharing things with others, sharing toys while playing and helping others. Adaptation is measured by statements that relate to the child's adaptation to the situation. Leadership quality refers to the statement that the child takes leadership in groups.

Example. 1) The child quickly mingles with other children.

Intrapersonal Skills

Intrapersonal skills consist of autonomy, empathy, self-esteem, and problem-solving. Autonomy involves independence in daily activities such as washing hands, putting on shoes, going to the toilet, eating, asking for their needs, such as toys, water, and food, and getting up alone when they fall. Empathy is measured by statements related to children loving others, helping others, and consoling others. Self-esteem includes children being confident, expressing their ideas and opinions, expecting failure, their choices, and their preference for things. Problem-solving refers to the child's ability to solve and face minor issues.

Example. 1) The child eats independently.

Behaviour Regulation

Behaviour regulation focuses on rule compliance, turn-taking, self-control, self-management, and waiting. Rule compliance was measured by obeying the

instructions of others, understanding the norms of others, and correcting others to follow the rules. Turn-taking involves keeping turns while playing. Self-control refers to controlling one's behaviour according to the situation. Self-management includes doing things in a disciplined manner and withdrawing from negative situations. Waiting refers to the statement that the child waits to meet their needs.

Example. 1) The child behaves according to the norms of the class.

Cognitive Functioning

Cognitive functioning focuses on questioning, identification, classification, memory, attention and time concepts. Questioning involves always asking questions according to the situation and responding to questions. Identification is measured by the child's ability to identify colours, letters, gender differences, body parts, and pictures. Classification is classified as the child can classify things with the same colour, same shape, big and small. Memory included remembering and talking about previous incidents. Attention refers to paying attention to instructions. The time concept consisted of the child knowing about the time of food, parents returning from work.

Example. 1) The child can identify colours.

Language Skills

Language skills focus on receptive language and expressive language. Receptive language consists of the child understanding what others say, listening to the surrounding sounds, and listening to the class for at least ten minutes. Expressive language refers to the child's ability to express their thoughts in words, tell the names of their family members, tell stories, and sing songs; strangers can understand what the child speaks, and the child can speak a sentence with more than four words.

Example. 1) The child can understand what others are saying.

Writing of Items

A mental health scale was developed for pre-primary students. A draft scale is developed based on the codes and themes discovered through thematic analysis, and a thorough literature review. The investigator fixed seven dimensions for the pre-primary students' mental health scale. The seven dimensions were physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. Initially, the scale consisted of 110 statements prepared in seven dimensions. The investigator and the supervising teacher discussed each statement's relevance and removed the ambiguity in its wording. After thorough editing and modification, the draft scale was prepared with 99 items in seven dimensions. Table 23 shows the details of the draft of the mental health scale.

Table 23

Dimension-wise Details of Items in the Draft Scale

Sl. No.	Dimensions	Item Numbers	No. of Items
1	Physical functioning	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	13 items
2	Emotional Competence	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	11 items
3	Interpersonal relations	25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	16 items
4	Intrapersonal skills	41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57	17 items
5	Behaviour regulation	58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72	15 items
6	Cognitive functioning	73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88	16 items
7	Language skills	89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99	10 items
		Mental Health Scale	99 items

Method of Responding and Scoring Procedure

The clear instructions were included on the first page of the scale. The items' responses were elicited using a 5-point Likert scale, such as Never, Rarely, Sometimes, Often and Always. A separate space was provided on the scale to mark the response. The response for each item could be marked by putting a tick mark (✓) in the corresponding space given for each item. The 1, 2, 3, 4, and 5 scores were used to quantify the degree of frequency for Never, Rarely, Sometimes, Often, and Always respectively. All the items were positive.

Expert Consultation

A draft of the mental health scale was given for expert opinion. Researchers, psychologists, special teachers and teachers of pre-primary students were among the experts. Experts gave valuable suggestions on the statements' appropriateness, applicability, and clarity. Further, a pretest was administered to a sample of 30 pre-primary students. After the expert's consultation and pretest, 79 items were retained on the scale.

Item Analysis

The final items on the scale were determined by collecting the responses of one thousand pre-primary students. The students were placed in descending order by the total score. The top 27% were considered the upper group, and the bottom 27% were considered the lower group. There were 270 students total in the two groups. The *t*-value was obtained by calculating the means and standard deviations for the higher and lower groups. One of the goals of this study was to standardise the tools. The t value of each item was given in table 24.

Table 24

Details of the Item Analysis of the Mental Health Scale

Item No	*t* value	Item No	*t* value	Item No.	*t* value
1	9.26	28	15.84	55	6.32
2*	0.64	29	12.92	56	10.75
3	10.60	30	13.40	57	11.49
4	10.67	31	13.26	58	16.80
5	11.01	32	14.03	59*	-0.75
6	12.94	33	9.27	60	15.02
7	13.50	34	10.04	61	11.24
8	12.99	35	11.58	62	12.67
9*	-0.69	36	16.14	63	12.30
10	9.79	37	11.99	64	16.28
11	7.68	38	12.24	65	14.95
12	9.24	39	6.31	66	15.60
13	19.53	40	7.85	67	14.38
14	18.64	41	19.06	68	17.98
15	20.24	42	19.64	69	12.98
16*	-2.49	43	19.60	70	15.35
17	11.56	44	21.18	71	15.29
18	8.99	45	15.66	72	12.23
19	5.47	46	9.99	73	12.05
20	14.12	47	13.66	74	18.01
21	15.96	48	15.47	75	13.87
22	14.27	49	17.12	76	16.27
23	13.76	50	14.90	77	13.58
24	9.97	51	17.80	78	11.84
25	17.63	52	15.45	79	12.36
26	16.01	53	19.11		
27	12.75	54	12.11		

* rejected items

The draft scale consisted 79 items. After item analysis, the final scale consists of 75 items. The items with *t*-value above 2.58 have been taken for the final scale. The dimensions and number of items are shown in table 25.

Table 25

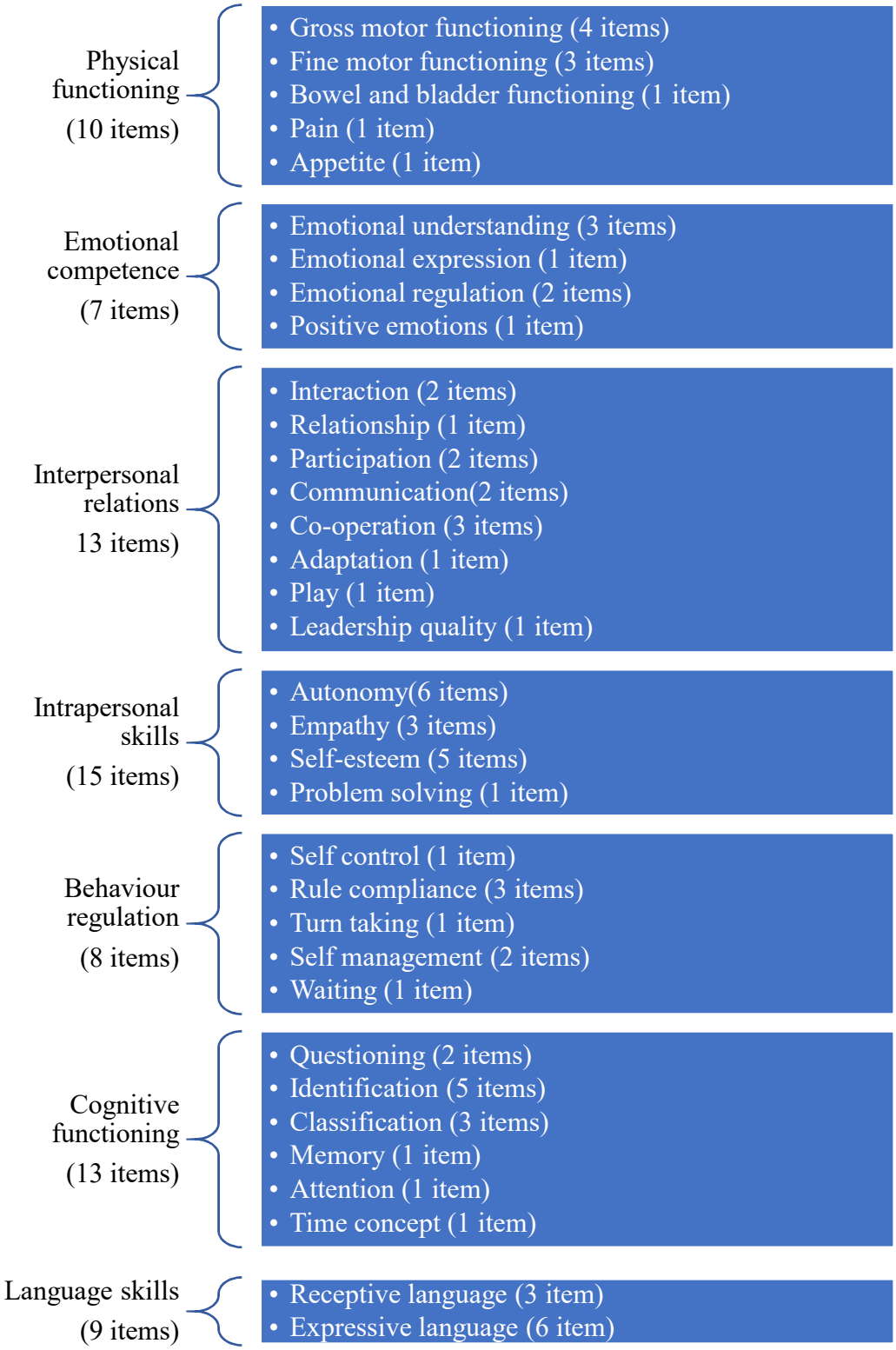
Dimension wise Distribution of Items on the Mental Health Scale

Sl. No.	Dimensions	Item Numbers	No. of Items
1	Physical Functioning	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10 items
2	Emotional Competence	11, 12, 13, 14, 15, 16, 17	7 items
3	Interpersonal Relations	18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30	13 items
4	Intrapersonal skills	31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45	15 items
5	Behaviour Regulation	46, 47, 48, 49 50, 51, 52, 53	8 items
6	Cognitive functioning	54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66	13 items
7	Language skills	67, 68, 69, 70, 71, 72, 73, 74, 75	9 items
		Mental Health Scale	75 items

The detailed description of the subtheme-wise number of items on the mental health scale for pre-primary students is shown in figure 7.

Figure 7

Distribution of the Number of Items Based on Subtheme Wise of Mental Health Scale



Estimation of Reliability and Validity

The supervising teacher assisted the investigator in developing a mental health scale, and together they established the psychometric properties of the scale. It was essential for a standard scale used for research purposes.

Reliability of the Mental Health Scale

The reliability of the mental health scale was established using Cronbach's alpha method. This method was used to measure the internal consistency of the items included in the scale. In the present study, the mental health scale was administered to a total sample of 1,000 pre-primary students to determine the reliability of Cronbach's alpha. The dimension-wise reliability was also computed. A statistical analysis computer program, SPSS, was used to compute Cronbach's Alpha. The obtained values of Cronbach's alpha for the mental health scale are given in table 26.

Table 26

The Values of Cronbach alpha for the Mental Health Scale

Sl. No.	Variable	Cronbach alpha(α)	No. of items
1.	Physical functioning	.699	10 items
2.	Emotional Competence	.682	7 items
3.	Social Interpersonal Relations	.780	13 items
4.	Intrapersonal Relations	.803	15 items
5.	Behaviour Regulation	.733	8 items
6.	Cognitive functioning	.776	13 items
7.	Language skills	.837	9 items
	Mental Health Scale	.942	75 items

From table 26 it was clear that the values of Cronbach's alpha were high and positive. The Cronbach's alpha value of 75 items on the mental health scale was

.942, showing that the mental health scale was highly reliable in assessing the mental health of pre-primary students.

Validity of the Mental Health Scale

In the present study, the validity of the mental health scale was established by the following methods:

1. Face Validity
2. Construct Validity

Face Validity. The face validity of the mental health scale was established with the help of experts. The researcher selected the experts in education and psychology, and suggestions provided by the experts were incorporated. Based on the experts' opinion, necessary modifications were made to the mental health scale statements. Thus, the face validity of the mental health scale was established.

Construct Validity. In the present study, the construct validity for the mental health scale was estimated by the Factorial validity method.

Factorial Validity. In the present study, Hotelling's principal component method (1933) was used. The exploratory factor analysis with varimax orthogonal rotation was done on the scores of 1000 pre-primary students using SPSS statistical analysis computer software. To estimate the factorial validity of the mental health scale, total scores of each sub-scale, such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills, were taken. KMO and Bartlett's Test of sphericity were done to check the sampling adequacy in the factor analysis, and the output was obtained. Table 27 shows the Kaiser-Meyer-Olkin Measure and Bartlett's Test for mental health scale.

Table 27

Kaiser-Meyer-Olkin Measure and Bartlett's Test for Mental Health Scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	3464.168
	Df	21
	Sig.	.000

As per table 27 the Kaiser-Meyer-Olkin measure of sampling adequacy for the mental health scale is 0.898 (>.5), indicating that factor analysis was appropriate for the data. Whereas Bartlett's test of sphericity for the mental health scale is highly significant (p<.001), showing that the data were appropriate for the factor analysis. This showed that the data were appropriate for data analysis. Table 28 shows the communalities for the mental health scale.

Table 28

Communalities for Mental Health Scale

Components	Initial	Extraction
Physical functioning	1.000	.460
Emotional competence	1.000	.419
Interpersonal relations	1.000	.553
Intrapersonal skills	1.000	.772
Behaviour regulation	1.000	.664
Cognitive functioning	1.000	.680
Language skills	1.000	.625

The Eigenvalue, percent of variance and cumulative percent of the variance of each factor obtained with the help of the correlation matrix by principal component analysis are shown in table 29.

Table 29

Total Variance Explained by Different Factors for the Mental Health Scale

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.172	59.606	59.606	4.172	59.606	59.606
2	.709	10.126	69.732			
3	.616	8.794	78.526			
4	.541	7.722	86.249			
5	.399	5.695	91.944			
6	.312	4.452	96.396			
7	.252	3.604	100.000			

From table 29 it is clear that only one factor was extracted with an Eigenvalue greater than one (Eigenvalue = 4.172), which indicated that all the components measure only one construct. The cumulative percent (59.606%) showed that one factor was extracted from all seven components. Around 60% of information is retained by the one factor extracted, whereas only 40% was lost out of seven components. The factor loading for each component of the mental health scale was traced out, and it is presented in table 30.

Table 30

Component Matrix of Mental Health Scale

Component	Factor
	1
Intrapersonal skills	.879
Cognitive Functioning	.825
Behaviour Regulation	.815
Language Skills	.790
Interpersonal Relations	.744
Physical Functioning	.678
Emotional Competence	.647

As per table 30, the component of mental health, Intrapersonal skills, has the highest loading; the factor value is 0.879. Whereas the component, emotional competence, has the lowest loading, the factor value is 0.647. Eigenvalues for each mental health component were plotted, and a line graph was prepared. It is presented in figure 8.

Figure 8

Scree Plot of the Mental Health Scale

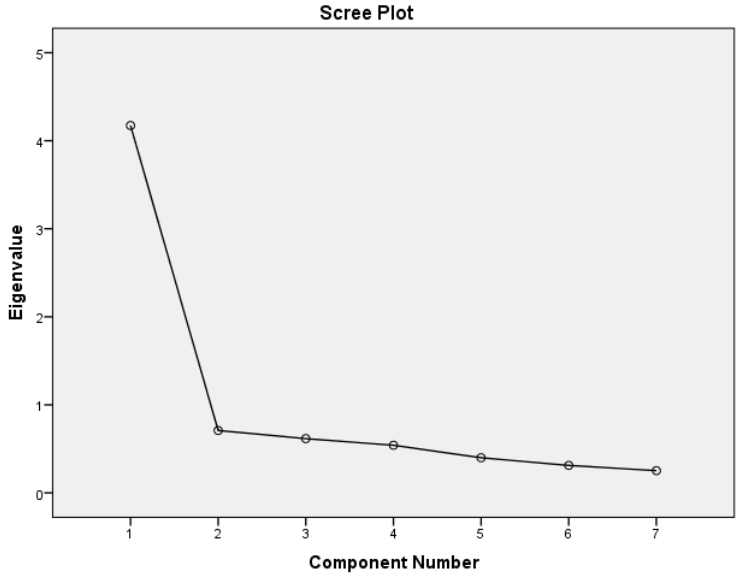


Figure 8 shows the scree plot obtained with SPSS statistical analysis computer software. The eigenvalue for the first factor is 4.172, and for the second factor, it is 0.709. The difference between the eigenvalues of the first and second factors is 3.463, which is greater than 2. The difference between the first and second factors is high. Then, the difference decreases. Hence, the graph shows an elbow shape. As per the scree plot, only one factor can be extracted.

It was observed from communalities, eigenvalues, the number of factors extracted, factor loading for each component and scree plot that mental health can measure specific factors, such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behavioural regulation, cognitive functioning and language skills. Thus, the results indicate the high factorial validity of the mental health scale. Hence, the construct validity of the mental health scale was established.

Establishment of Norms on the Mental Health Scale

The study aimed to establish norms for pre-primary students and categorise their mental health into low, average and high groups using percentile norms. The norm sample of the scale consisted of 1000 pre-primary students from Kerala. The mental health of pre-primary students in age groups 3-4 and 4-5 was used to categorise them into three groups based on their mental health score. The low mental health group had scores less than or equal to the score corresponding to the 25th percentile, the high mental health group had scores greater than or equal to the score corresponding to the 75th percentile, and the average group had scores in between the scores of the 25th and 75th percentile. The norm table for pre-primary students of age groups 3-4 and 4-5 was given in table 31.

Table 31

Norms of the Mental Health Scale for Pre-primary Students in Age Groups 3-4 and 4-5

Variables	Range of Mental Health for Pre-primary Students					
	Age group 3-4			Age group 4-5		
	Low (scores<=)	Average (scores in the range)	High (scores=>)	Low (scores<=)	Average (scores in the range)	High (scores=>)
Physical functioning	40	41 to 46	47	42	43 to 47	48
Emotional competence	25	26 to 30	31	26	27 to 31	32
Interpersonal relations	44	45 to 55	56	45	46 to 56	57
Intrapersonal skills	58	59 to 67	68	59	60 to 68	69
Behaviour regulation	27	28 to 33	34	28	29 to 34	35
Cognitive functioning	48	49 to 58	59	49	50 to 59	60
Language skills	36	37 to 42	43	37	38 to 43	44
Mental health (Total)	285	286 to 330	331	293	294 to 336	337

Table 31 revealed the norms of the mental health scale for pre-primary students in age groups 3-4 and 4-5. For pre-primary students in age group 3-4, the low mental health group had scores less than or equal to 285, the high mental health group had scores greater than or equal to 331 and the average group had scores in between the scores of 285 and 331. For pre-primary students in age groups 4-5, the low mental health group had scores less than or equal to 293, the high mental health group had scores greater than or equal to 337 and the average group had scores in between the scores of 293 and 337.

In the present study, the mental health scale was developed and standardized for pre-primary students.

- The dimensions of mental health were derived from the thematic analysis, and through literature review. The scale comprised 75 questions covering seven dimensions after the item analysis procedure.
- The reliability of the mental health scale was measured using Cronbach's alpha method, and the value was found to be .942.
- The face validity and construct validity of the mental health scale were estimated. The construct validity was established using factorial validity, showing that the mental health scale has good construct validity.
- The norms were established separately for pre-primary students in age groups 3-4 and 4-5 using percentiles.
- For pre-primary students in age groups 3-4, the low mental health group had scores less than or equal to 285; the high mental health group had scores greater than or equal to 331 and the average group had scores in between the scores of 285 and 331.

- For pre-primary students in age groups 4-5, the low mental health group had scores less than or equal to 293, the high mental health group had scores greater than or equal to337 and the average group had scores in between the scores of 293 and 337.

Discussions

In the present study, the mental health scale was developed and standardized for pre-primary students. The previous tools measuring the mental health of pre-primary students were the Children's Behaviour Questionnaire by Rutter (1967), Preschool and Kindergarten Behaviour Scales by Merrell (1994), the Strength and Difficulty Questionnaire by Goodman (1997), and Psychological Well-being Scale for Preschool Children by Abed et al. (2016). Many tools measured the mental health problems that were already available, but the scale measuring the positive mental health of pre-primary children was significantly less.

The themes, and literature review were used to determine the dimensions of mental health. Following item analysis, the scale had 75 statements covering seven dimensions. The seven dimensions of the mental health scale were physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. The previous study by Abed et al. (2016) revealed that self-concept, life satisfaction, and resilience were found to be the three factors that used to measure psychological well-being in preschool children.

The reliability and validity of the mental health scale were established. The reliability of the mental health scale was measured using Cronbach's alpha method, and the value was found to be .942. The face validity and construct validity of the mental health scale were estimated. The construct validity was established using factorial validity, showing that the mental health scale has good construct validity.

The study, furthermore, established the norms of the mental health scale. The norms were established separately for pre-primary students in age groups 3-4 and 4-5 using percentiles. For pre-primary students in age groups 3-4, the low mental health group had scores less than or equal to 285, the high mental health group had scores greater than or equal to 331 and the average group had scores in between the scores of 285 and 331. For pre-primary students in age groups 4-5, the low mental health group had scores less than or equal to 293, the high mental health group had scores greater than or equal to 337 and the average group had scores in between the scores of 293 and 337.

Phase 3: Quantitative Analysis

The analysis and interpretation of the quantitative data to measure the mental health of pre-primary students were dealt with in this phase. The main objective was to determine the levels of mental health of pre-primary students, compare the mean scores based on categorical variables, and study the interrelationships between mental health and its dimensions. In order to accomplish the objective, the collected data from pre-primary students were tabulated and analysed using statistical techniques such as preliminary analysis, percentage analysis, mean difference analysis, and correlation analysis. Based on the research hypotheses, the consolidated data was statistically analysed using MS Excel and SPSS version 21. The results have been tabulated and systematically presented in four sections.

Section 1: Preliminary Analysis

The preliminary analysis of the collected data was carried out for the present study to understand the nature of the distribution of the variable mental health of pre-primary students. The normality of the distribution of mental health was established by analysing the essential statistical indices, namely mean, median,

mode, standard deviation, skewness and kurtosis. The statistical constants of mental health among pre-primary students of age groups 3-4 and 4-5 are presented in Table 32.

Table 32

Statistical Indices of Mental Health among Pre-Primary Students of Age Groups 3-4 and 4-5

Variable	Age Group	N	Mean	Median	Mode	*SD*	Skewness	Kurtosis
Mental health	3-4	331	310.17	316.00	319	34.35	-.970	1.314
	4-5	539	309.80	314.00	315	34.43	-.798	.798

Table 32 revealed that the measures of central tendency, standard deviation, skewness and kurtosis of mental health of pre-primary students of age groups 3-4 and 4-5. The mean, median, and mode values for the age group 3-4 were 310.17, 316, and 319, respectively, were nearly equal. The distribution was determined to be slightly negatively skewed with a value of -.970. The distribution was slightly leptokurtic since the kurtosis value was found to be 1.314.

For the age group 4-5, mean, median, and mode values were displayed as 309.80, 314, and 315, respectively. The measures of central tendency demonstrate that the values are nearly equal. The distribution was shown to be slightly negatively skewed, and slightly leptokurtic with values of -.798 and .798, respectively. All the measures of central tendency, measures of variability and measures of shape indicated that the mental health of pre-primary students of age groups 3-4 and 4-5 is approximately normal. Additionally, P-P plots were used to display the distribution of scores of mental health among pre-primary students in age groups 3-4 and 4-5. The Probability- Probability (P-P) plots of the mental health of pre-primary students in age groups 3-4 and 4-5 are shown in Figure 9.

Figure 9

P-P Plots of the Mental Health of Pre-primary Students in Age Group3-4

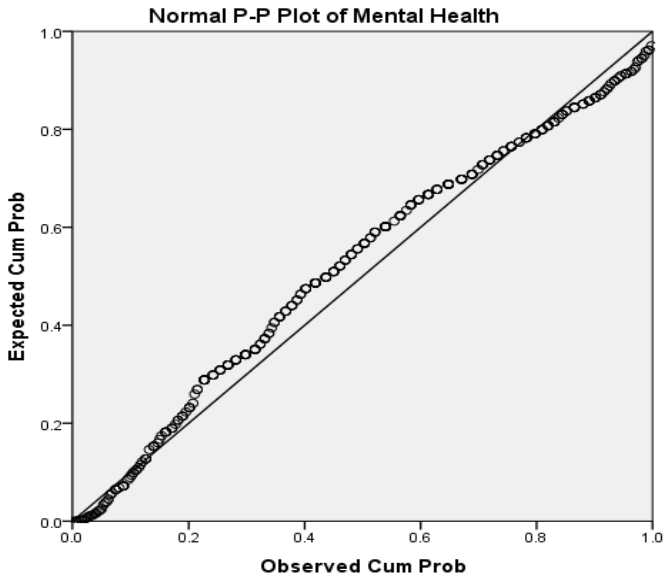
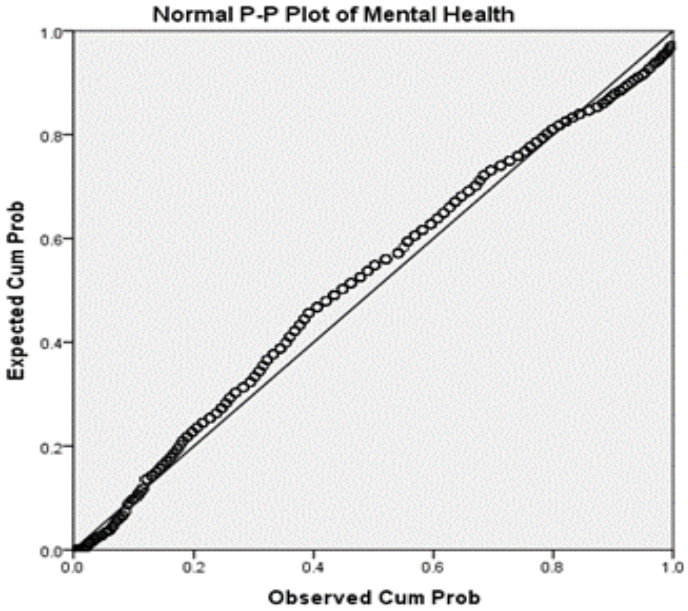


Figure 10

P-P plots of Mental Health of Pre-primary Students of Age Group 4-5



Note: Observed Cum Prob: Observed Cumulative Probability, Expected Cum Prob: Expected Cumulative Probability

The nature of the distribution of the variable mental health of pre-primary students was examined by plotting graphs. The P-P plots were used to determine

the normality of the distribution. The P-P plots showed that relatively few scores deviate from the diagonals, and the graphs show that the data are approximately normal.

From the preliminary analysis, it is clear that all the measures of central tendency, variability, symmetry, and visual representations indicated that the distribution of mental health for age groups 3-4 and 4-5 is approximately normal.

Section 2: Percentage Analysis

Percentage analysis was used to assess the levels of mental health of pre-primary students in age groups 3-4 and 4-5. The investigator established the norms for the mental health scale during the tool development phase, and relevant details were presented in table 33. Based on the norms, the sample was divided into three groups: low, average, and high mental health groups. As per the norms, the pre-primary students in the age group of 3-4 who scored less than or equal to 285 were classified into the low mental health group, while those who scored between 285 and 330 were placed in the average mental health group. Additionally, pre-primary students who scored above 331 were classified as part of the high mental health group. For pre-primary students in age group 4-5, the low mental health group included those with scores less than or equal to 293, the average mental health group consisted of those with scores between 293 and 337, and the high mental health group included those with scores above 337. Table 33 indicates the levels of mental health among pre-primary students in age groups 3-4 and 4-5.

Table 33

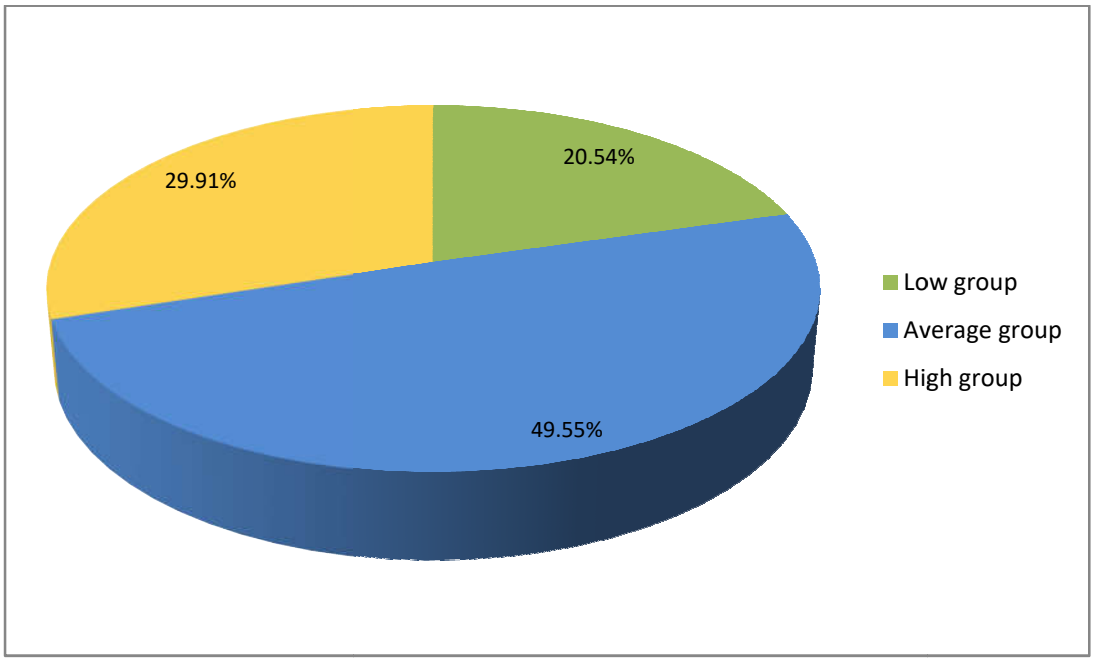
Levels of Mental Health among Pre-primary Students of Age Groups 3-4 and 4-5

Dimensions	Age Group	N	Mean	*SD*	Level of Mental Health					
					Low group		Average group		High group	
					N	%	N	%	N	%
Mental health	3-4	331	310.17	34.35	68	20.54	164	49.55	99	29.91
	4-5	539	309.80	34.43	156	28.94	257	47.68	126	23.38

From table 33, it was evident that 20.54% students in age group 3-4 have low mental health, 29.91% have high mental health, and 49.55 % have average mental health. Moreover, among students in age group 4-5, 28.94% had low mental health, 23.38% had high mental health, and 47.68 had average mental health. Figure 12 represents the percentage of students in age group 3-4 were in the low, average, and high mental health groups.

Figure 12

Pie Diagram of Levels of Mental Health among Pre-primary Students of Age Groups 3-4

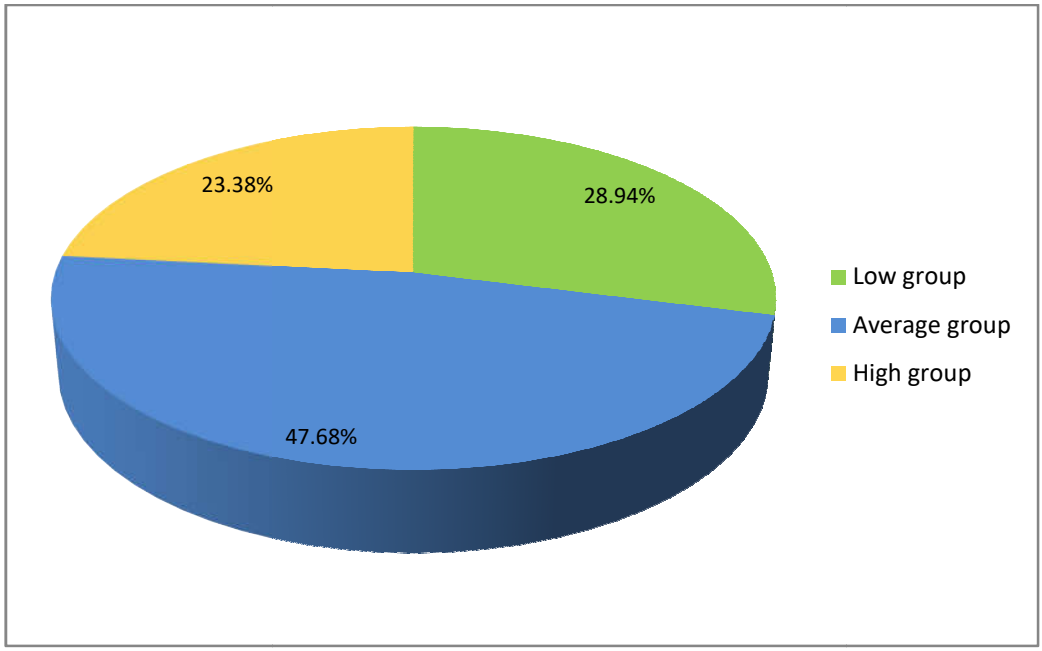


It is clear from figure 12 that the mental health of pre-primary students in age group 3-4 is divided into three groups: low, average and high, with separate sections representing each. Most of the sample, comprising 49.55%, was of the average mental health group, while high and low mental health groups accounted for 29.91% and 20.54% of pre-primary students, respectively.

Figure 13 represents the percentage of students in age group 4-5 were in low, average, and high mental health groups.

Figure 13

Pie diagram of Levels of Mental Health among Pre-primary Students of Age Groups 4-5



From figure 13 it is evident that the mental health of pre-primary students in age group 4-5 was divided into three categories. These categories were low, average and high mental health groups, each represented by distinct sections. The largest portion of the sample, i.e., 47.68%, belonged to the average mental health group. Meanwhile, the high and low mental health groups comprised 23.38% and 28.94% of pre-primary students, respectively.

- From the study, it was evident that 20.54% students in age group 3-4 have low mental health 29.91% have high mental health, and 49.55 percent have average mental health
- Among students in age group 4-5, 28.94% had low mental health, 23.38% had high mental health, and 47.68 had average mental health.

For pre-primary students in age groups 3-4 and 4-5, the low mental health group consisted of 20.54% and 28.94% respectively.

Mean Difference Analysis

The mean difference analysis was used to compare the mean scores of the mental health of pre-primary students based on categorical variables, including gender, types of family, number of siblings, birth order, father's age, mother's age, father's education, and mother's education. The test of significance of the difference between means for the large independent sample was employed for categorical variables such as gender and types of family. Furthermore, the analysis of variance was used to compare the mean scores for the mental health of pre-primary students based on categorical variables involving the number of siblings, birth order, father's age, mother's age, father's education, and mother's education.

Comparison of Mean Scores of Mental Health among Pre-primary Students based on Gender

To compare the mean scores of mental health among pre-primary students in age groups 3-4 and 4-5 based on gender, The data were computed using the *t*-test. The statistically significant difference between boys and girls was analysed. The results of comparing mental health among pre-primary students based on gender are displayed in table 34

Table 34

Comparison of Mean Scores of Mental Health of Pre-primary Students based on Gender

Variable	Age group	Gender	N	Mean	*SD*	*t*-value	Sig
Mental Health	3-4	Boy	175	305.39	35.90	2.70*	.007
		Girl	156	315.54	31.79		
	4-5	Boy	260	307.40	35.86	1.55	.120
		Girl	279	312.03	32.95		

Table 34 revealed that the *t*-value for students in the age group of 3-4 is 2.70, which was found to be significant. It showed a significant difference in the mean scores of mental health of pre-primary students in age group 3-4 based on gender, $t = -2.70$, $p < .01$. It indicated that the mean scores of mental health for boys and girls differ significantly, and the higher score was associated with girls. It showed the dominance of girls over boys in the mental health of pre-primary students in the age group of 3-4. Therefore, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on gender was rejected.

Table 34 showed that the *t*-value obtained from the comparison of mental health between boys and girls in the age group of 4-5 is -1.55, which is not significant, $t = -1.55$, $p > 0.05$. It demonstrated that the mean mental health scores for boys and girls do not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on gender was not rejected.

- There is a significant difference in mental health among pre-primary students in age group 3-4 based on gender, $t = -2.70$, $p < .01$. It showed the dominance of girls over boys in the mental health of pre-primary students in the age group of 3-4.

- There is no significant difference in mental health among pre-primary students in age group 4-5 based on gender, t = -1.55, p > 0.05.

These results suggested that mean scores of mental health among pre-primary students in age group 3-4 differ significantly, indicating the dominance of girls over boys. Further, the mean scores of mental health among pre-primary students in age group 4-5 do not differ significantly.

Comparison of Mean Scores of Mental Health of Pre-primary Students based on Types of Family

The *t*-test was calculated to determine the significant difference in mental health between pre-primary students of age groups 3-4 and4-5 based on types of family. The findings of the comparison of students from joint families and nuclear families are displayed in table 35.

Table 35

Comparison of Mean Scores of Mental Health of Pre-primary Students based on Types of Family

Variable	Age Group	Types of Family	N	Mean	*SD*	*t*-value	Sig
Mental Health	3-4	Joint family	186	313.16	32.051	1.79	.073
		Nuclear family	145	306.34	36.859		
	4-5	Joint family	308	312.88	34.289	2.40*	.016
		Nuclear family	231	305.69	34.268		

Table 35 indicated that, the *t*-value obtained from the comparison of mean scores of mental health among pre-primary students in age group 3-4 based on types of family was not significant, t=1.79, p>.05. It indicated that the mean scores of mental health of pre-primary students between joint family and nuclear family do not differ significantly. Hence, the hypothesis that there is no significant difference in the

mean scores of mental health among pre-primary students in age group 3-4 based on types of family was not rejected.

Table 35 revealed that, the *t*-value obtained from the comparison of mean scores of mental health among pre-primary students of age group 4-5 based on types of family was significant, t=2.40, p<0.05. It pointed out that the mean scores of mental health of pre-primary students between joint family and nuclear family differ significantly, with a higher score associated with joint family. It demonstrated that pre-primary students from joint families had better mental health than those from nuclear families in the age group of 4-5. So, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in the age group 4-5 based on types of family was rejected.

- There is no significant difference in mental health among pre-primary students in age group 3-4 based on the types of family, t=1.79, p>.05.
- There is significant difference in mental health among pre-primary students in age group 4-5 based on types of family, t=2.40, p<0.05. It showed that the pre-primary students from joint family had better mental health than those from nuclear family in the age group of 4-5.

The results showed that the mean scores of mental health of pre-primary students from joint families and those from nuclear families in the age group of 3-4 do not differ significantly. Additionally, the mean scores of mental health of pre-primary students from joint families and those from nuclear families in the age group of 4-5 differ significantly, indicating that pre-primary students from joint families had better mental health than those from nuclear families in the age group of 4-5.

Comparison of the Mental Health of Pre-primary Students based on the Number of Siblings

One-way ANOVA was done to determine the significant difference in the mental health of pre-primary students based on the number of siblings for age groups 3-4 and 4-5. The number of siblings in the entire sample was divided into three groups: those who have no siblings, those who have one sibling, and those who have two or more siblings. Table 36 provides a summary of the descriptive statistics of the mental health of pre-primary students based on the number of siblings.

Table 36

Descriptive Statistics of the Mental Health among Pre-primary Students on the Basis of the Number of Siblings for Age Groups 3-4 and 4-5

Variable	Age Group	No. of Siblings	N	Mean	*SD*	SE
Mental Health	3-4	Zero	63	307.62	37.34	4.718
		One	167	309.68	23.97	2.869
		Two and above	101	312.57	33.57	2.695
	4-5	Zero	91	312.82	35.44	3.715
		One	260	310.28	32.59	2.021
		Two and above	188	307.66	36.40	2.655

Table 36 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on the number of siblings are summarised in table 37.

Table 37

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students based on the Number of Siblings

Age Group	Source of Variance	Sum of Squares	df	Mean Square	*F*-Value	Sig.
3-4	Between groups	1033.454	2	516.727	.436	.647
	Within groups	388435.730	328	1184.255		
	Total	389469.184	330			
4-5	Between groups	1753.648	2	876.824	.739	.478
	Within groups	636109.903	536	1186.772		
	Total	637863.551	538			

From table 37 it was evident that the comparison of the mental health of pre-primary students for age group 3-4 based on the number of siblings was not significant, $F(2,328)= .436$, $p>.05$. The *F*-value indicated that the mean scores of mental health of pre-primary students in age group 3-4 belonging to zero sibling, one sibling and two or more sibling groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on the number of siblings was not rejected.

Table 37 revealed that the comparison of the mental health of pre-primary students for age group 4-5 based on the number of siblings was not significant, $F (2, 536) = .739$, $p>.05$. The *F*-value indicated that the mean scores of mental health of pre-primary students of age group 4-5 belonging to zero sibling, one sibling and two or more sibling groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on the number of siblings was not rejected.

- There is no significant difference in mental health among pre-primary students in age group 3-4 based on the number of siblings, $F (2,328) = .436$, $p>.05$.

- There is no significant difference in mental health among pre-primary students in age group 4-5 based on the number of siblings, F (2, 536) = .739, p>.05.

The result indicated that the mean scores of mental health of pre-primary students in age groups 3-4 and 4-5 belonging to zero sibling, one sibling and two or more sibling groups did not differ significantly.

Comparison of the Mental Health of Pre-primary Students based on Birth Order

One-way ANOVA was performed to compare mean scores of mental health among pre-primary students of age groups of 3-4 and 4-5 based on birth order. Three groups of students were chosen from the sample to represent the first, middle, and last born. The outcome of descriptive statistics is shown in Table 38.

Table 38

Descriptive Statistics of the Mental Health among Pre-primary Students based on Birth Order

Variable	Age Group	Birth Order	N	Mean	*SD*	SE
Mental Health	3-4	First-born	145	309.46	37.34	3.101
		Middle-born	36	313.86	23.97	3.995
		Last-born	150	309.97	33.57	2.741
	4-5	First-born	233	312.94	31.88	2.089
		Middle-born	82	306.79	37.46	4.137
		Last-born	224	307.63	35.70	2.385

Table 38 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on birth order are summarised in table 39.

Table 39

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students based on Birth Order

Age group	Source of variance	Sum of squares	df	Mean square	*F*-value	Sig.
3-4	Between groups	568.944	2	284.472	.240	.787
	Within groups	388900.240	328	1185.671		
	Total	389469.184	330			
4-5	Between groups	4087.796	2	2043.898	1.729	.179
	Within groups	633775.755	536	1182.417		
	Total	637863.551	538			

From table 39 it can be seen that the comparison of the mental health of pre-primary students for age group 3-4 based on the birth order was not significant, F (2,328) = .240, p>.05. The F-value indicated that the mean scores of mental health of pre-primary students in age group 3-4 belonging to first-born, middle-born and last-born groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on birth order was not rejected.

Table 39 indicated that the comparison of mental health of pre-primary students for age group 4-5 based on birth order was not significant, F (2, 536) = 1.729, p>.05. The F-value indicated that mean scores of mental health of pre-primary students in age group 4-5 belonging to first-born, middle-born and last-born groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on birth order was not rejected.

- There is no significant difference in mental health among pre-primary students in age group 3-4 based on birth order, F (2,328) = .240, p>.05.

- There is no significant difference in mental health among pre-primary students in age group 4-5 based on birth order, F (2, 536) = 1.729, p>.05.

The result indicated that the mean scores of mental health of pre-primary students in age groups 3-4 and 4-5 belonging to First-born, middle-born and Last-born groups did not differ significantly.

Comparison of the Mental Health of Pre-primary Students based on their Father's Age

A one-way analysis of variance was used to compare mean scores of mental health among pre-primary students of age groups 3-4 and 4-5 was determined based on their father's age. The pre-primary students in age group 3-4 were categorised into four groups based on their father's age, which included age groups between 26 and 30, between 31 and 35, between 36 and 40, and between 41 and 45. The data were analysed with the help of a one-way ANOVA and the results of descriptive statistics are given in table 40.

Table 40

Descriptive Statistics of the Mental Health among Pre-primary Students based on Father's Age

Variable	Age Group	Father's Age Group	N	Mean	*SD*	SE
Mental Health	3-4	26-30	28	304.46	40.700	7.692
		31-35	117	315.24	28.853	2.667
		36-40	121	311.06	34.950	3.177
		41-45	65	301.86	38.139	4.731
	4-5	26-30	45	319.44	28.903	4.309
		31-35	181	314.31	32.573	2.421
		36-40	206	304.96	37.544	2.616
		41-45	107	307.41	31.896	3.084

Table 40 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of the one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on their father's age are summarised in table 41.

Table 41

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students Based on Father's Age

Age Group	Source of Variance	Sum of Squares	df	Mean Square	*F*-value	Sig.
3-4	Between groups	8500.572	3	2833.524	2.432	.065
	Within groups	380968.612	327	1165.042		
	Total	389469.612	330			
4-5	Between groups	13318.877	3	4439.626	3.803*	.010
	Within groups	624544.674	535	1167.373		
	Total	637863.551	538			

From table 41 it can be seen that the comparison of the mental health of pre-primary students for age group 3-4 based on their father's age was not significant, F (3,327) = 2.432, p>.05. The F-value indicated that mean scores of mental health of pre-primary students in age group 3-4 belonging to the father's age between 26 and 30, between 31 and 35, between 36 and 40 and between 41 and 45 groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on father's age was not rejected.

Table 41 indicated that the comparison of mental health of pre-primary students for age group 4-5 based on father's age was significant, F (3, 535) = 3.803, p<.05, η^2=.02, though the effect was small. The assumption of homogeneity of

variances was tested and found tenable using Levene's test, F (3, 535) = 2.5, p>.05. Thus, there is significant evidence to reject the null hypothesis and conclude that there is significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on their father's age. However, the actual difference in the mean scores between the groups was quite small.

Post hoc comparisons to evaluate pair wise differences among group means were conducted with the use of the Tukey H*SD* test. Post hoc analysis is then used to identify the groups that differ significantly. The results of Tukey's post hoc analysis revealed that the mean scores of mental health was significantly different between the two groups. The significant pair wise differences between the mean scores of pre-primary students' father's age between 31 and 35 and father's age between 36 and 40 differ significantly, p<.05. Compared to the students in the father's age group of 36–40, the students in the father's age group 31–35 have better mental health.

- There is no significant difference in mental health among pre-primary students in age group 3-4 based on their father's age, F (2,328) = 2.432, p>.05.
- There is a significant difference in mental health among pre-primary students in age group 4-5 based on their father's age, F (2, 536) = 3.803, p<.05, indicating students in the father's age group 31–35 have better mental health than those in father's age group 36-40.

The result indicated that the mean scores of mental health of pre-primary students in age groups 3-4 did not differ significantly. Moreover, the mental health of pre-primary students in the age group of 4-5 belonging to the father's age differs significantly, indicating that students in the father's age group 31–35 have better mental health than those in father's age group 36-40.

Comparison of the Mental Health of Pre-primary Students based on Mother's Age

One-way ANOVA was used to determine the difference in mental health that is statistically significant among pre-primary students in age groups 3-4 and 4-5. The mother's age was divided into four categories: Age group between 21 and 25, between 26 and 30, between 31 and 35, and between 36 and 40. The details of the descriptive statistics are given in table 42.

Table 42

Descriptive Statistics of Mental Health among Pre-primary Students based on Mother's Age

Variable	Age Group	Mother's Age Group	N	Mean	*SD*	SE
Mental Health	3-4	21-25	44	308.45	40.18	6.057
		26-30	148	311.99	32.66	2.685
		31-35	92	313.27	29.72	3.099
		36-40	47	300.00	40.76	5.947
	4-5	21-25	67	321.25	30.36	3.170
		26-30	233	309.83	35.11	2.300
		31-35	161	307.89	35.81	2.823
		36-40	78	303.79	30.91	3.500

Table 42 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of the one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on their mother's ages are summarised in table 43.

Table 43

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students based on Mother's Age

Age Group	Source of Variance	Sum of Squares	Df	Mean Square	*F*-value	Sig.
3-4	Between groups	6364.096	3	2121.365	1.811	.145
	Within groups	383105.089	327	1171.575		
	Total	389469.184	330			
4-5	Between groups	12191.026	3	4063.675	3.475*	.016
	Within groups	625672.525	535	1169.481		
	Total	637863.551	538			

From table 43 it can be seen that the comparison of the mental health of pre-primary students in age group 3-4 based on their mother's age was not significant, F (3,327) = 1.811, p>.05. The F-value indicated that the mean scores of mental health of pre-primary students of age group 3-4 belonging to the mother's age between 21 and 25, between 26 and 30, between 31 and 35 and between 36 and 40 groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on their mother's age was not rejected.

Table 43 indicated that the comparison of mental health of pre-primary students for age group 4-5 based on mother's age was significant, F (3, 535) = 3.475, p<.05, η^2=.02, though the effect was small. The assumption of homogeneity of variances was tested and found tenable using Levene's test, F (3, 535) = .763, p>.05. Thus, there is significant evidence to reject the null hypothesis and conclude that there is a significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on their mother's age. However, the actual difference in the mean scores between the groups was quite small.

Post hoc comparisons to evaluate pair wise differences among group means were conducted with the use of the Tukey HSD test. Post hoc analysis is then used to identify the groups that differ significantly. The results of Tukey's post hoc analysis revealed that the mean scores on mental health were significantly different between the groups. The significant pair wise differences between the mean scores of pre-primary students of their mother's age group between 21-25 and 31-35 differ significantly, $p<.05$. The pre-primary students of their mother's age between 21–25 and 36-40 also differ significantly. Compared to the students in the mother's age groups of 31-35 and 36-40, the students in the mother's age group of 21–25 have better mental health.

- There is no significant difference in mental health among pre-primary students of age group 3-4 based on their mother's age, F (3,327) = 1.811, $p>.05$.
- There is a significant difference in mental health among pre-primary students in age group 4-5 based on their mother's age, F (3, 535) = 3.475, $p<.05$, students in the mother's age range 21-25 have better mental health than those in mother's age group 31–35. Furthermore, students in the mother's age range 21-25 have better mental health than those in mother's age group 36-40.

The result indicated that the mean scores of mental health of pre-primary students in age groups 3-4 did not differ significantly. Moreover, the mental health of pre-primary students in age group of 4-5 belonging to the mother's age differs significantly. The mean score indicated that students in the mother's age range 21-25 have better mental health than those in mother's age groups 31–35 and 36-40.

Comparison of the Mental Health of Pre-primary Students based on their Father's Education

One-way ANOVA can determine the significant difference in mental health between pre-primary students in age group 3-4 and those in age group 4-5. The father's education can be divided into four categories: High school level, Higher secondary level, Graduate level, and Postgraduate level. The outcome of the descriptive statistics of the mental health of pre-primary students in age groups 3-4 and 4-5 is shown in table 44.

Table 44

Descriptive Statistics of Mental Health of Pre-primary Students based on Father's Education

Variable	Age Group	Father's Education	N	Mean	*SD*	SE
Mental Health	3-4	High school level	150	310.93	32.47	2.652
		Higher secondary level	62	307.58	39.00	4.954
		Graduate level	98	309.97	34.83	3.519
		Post Graduate level	21	313.33	32.44	7.079
	4-5	High school level	255	310.51	34.64	2.170
		Higher secondary level	98	304.65	35.80	3.617
		Graduate level	160	310.73	34.21	2.705
		Post Graduate level	26	316.50	27.17	5.330

Table 44 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of the one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on father's education are summarised in table 45.

Table 45

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students based on Father's Education

Age Group	Source of Variance	Sum of Squares	df	Mean Square	*F*	Sig.
3-4	Between groups	717.179	3	239.060	.201	.896
	Within groups	388752.005	327	1188.844		
	Total	389469.184	330			
4-5	Between groups	4027.206	3	1342.402	1.133	.355
	Within groups	633836.345	535	1184.741		
	Total	637863.551	538			

From table 45 it can be seen that the comparison of the mental health of pre-primary students for age group 3-4 based on the father's education was not significant, F (3,327) = .201, p>.05. The F-value indicated that the mean scores of mental health of pre-primary students in age group 3-4 belonging to the father's education of high school level, higher secondary level, graduate level, and postgraduate level groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on their father's education was not rejected.

Table 45 indicated that the comparison of mental health of pre-primary students for age group 4-5 based on father's education was not significant, F (3, 535) = 1.133, p>.05. The F-value indicated that the mean scores of mental health of pre-primary students in age group 4-5 belonging to the father's education of high school level, higher secondary level, graduate level, and postgraduate level groups did not differ significantly. Thus, the hypothesis that there is no significant

difference in the mean scores of mental health among pre-primary students in age group 4-5 based on father's education was not rejected.

- There is no significant difference in mental health among pre-primary students of age group 3-4 based on their father's education, F (3, 327) = .201, p>.05).
- There is no significant difference in mental health among pre-primary students of age group 4-5 based on their father's education, F (3, 535) = 1.133, p>.05).

The result indicated that the mean scores of mental health of pre-primary students of age groups 3-4 and 4-5 belonging to the father's education of high school level, higher secondary level, graduate level, and postgraduate level groups did not differ significantly.

Comparison of Mental Health based on Mother's Education

A one-way ANOVA can determine whether there is a significant difference in pre-primary students' mental health based on their mother's education. The investigator specifically focused on students who were in the age group 3-4 and 4-5, and it divided the mother's education into four groups: High school level, Higher secondary level, Graduate level, and Post-graduate level. Table 46 displays the findings of the descriptive statistics of the mental health of pre-primary students based on mother's education.

Table 46

Descriptive Statistics of Mental Health among Pre-primary Students based on Mother's Education

Variables	Age Group	Mother's Education	N	Mean	*SD*	SE
Mental Health	3-4	High school level	59	305.81	34.86	4.539
		Higher secondary level	87	308.69	33.15	3.555
		Graduate level	155	312.95	35.62	2.862
		Post Graduate level	30	308.70	30.13	5.501
	4-5	High school level	73	314.16	33.21	3.887
		Higher secondary level	161	308.98	36.70	2.893
		Graduate level	236	308.84	33.84	2.203
		Post Graduate level	69	310.33	32.53	3.916

Table 46 gives the descriptive statistics such as mean, standard deviation and standard error of mental health among pre-primary students of age groups 3-4 and 4-5. The results of the one-way analysis of variance for comparing mental health among pre-primary students of age group 3-4 and 4-5 based on mother's education are summarised in table 47.

Table 47

The Results of the Analysis of the Variance of Mental Health among Pre-primary Students based on Mother's Education

Age Group	Source of Variance	Sum of Squares	df	Mean Square	*F*	Sig.
3-4	Between groups	2571.727	3	857.242	.725	.538
	Within groups	386897.457	327	1183.173		
	Total	389469.184	330			
4-5	Between groups	1734.047	3	578.016	.486	.692
	Within groups	636129.504	535	1189.027		
	Total	637863.551	538			

From table 47 it can be seen that the comparison of the mental health of pre-primary students for age group 3-4 based on the mother's education was not significant, F (3,327) = .725, p>.05. The F-value indicated that mean scores of mental health of pre-primary students in age group 3-4 belonging to the mother's education of high school level, higher secondary level, graduate level, and postgraduate level groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on mother's education was not rejected.

Table 47 indicated that the comparison of mental health of pre-primary students for age group 4-5 based on mother's education was not significant, F (3, 535) = .486, p>.05. The F-value indicated that the mean scores of mental health of pre-primary students in age group 4-5 belonging to the mother's education of high school level, higher secondary level, graduate level, and postgraduate level groups did not differ significantly. Thus, the hypothesis that there is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on mothers' education was not rejected.

- There is no significant difference in mental health among pre-primary students in age group 3-4 based on their mother's education, F (3,327) = .725, p>.05.
- There is no significant difference in mental health among pre-primary students in age group 4-5 based on their mother's education, F (3, 535) = .486, p>.05.

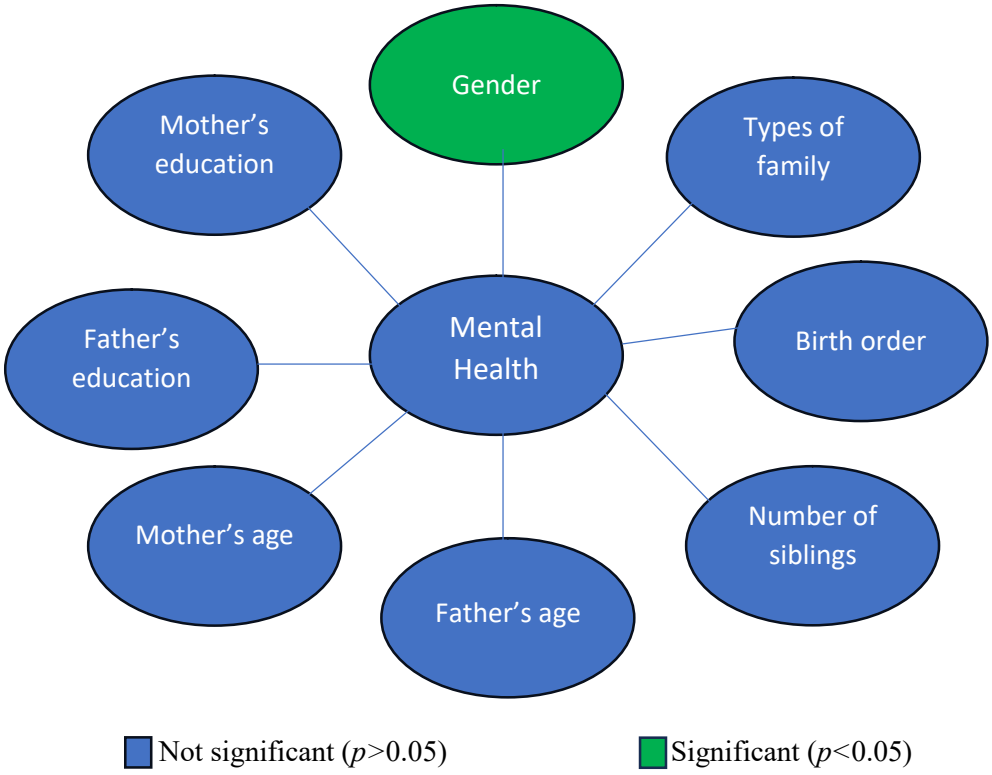
The result indicated that the mean scores of mental health of pre-primary students of age groups 3-4 and 4-5 belonging to mother's education such as high school level,

higher secondary level, graduate level, and postgraduate level groups did not differ significantly.

Figure 13 presented the representation of the overall mean difference analysis of the mental health of pre-primary students for age groups 3-4 and 4-5.

Figure 13

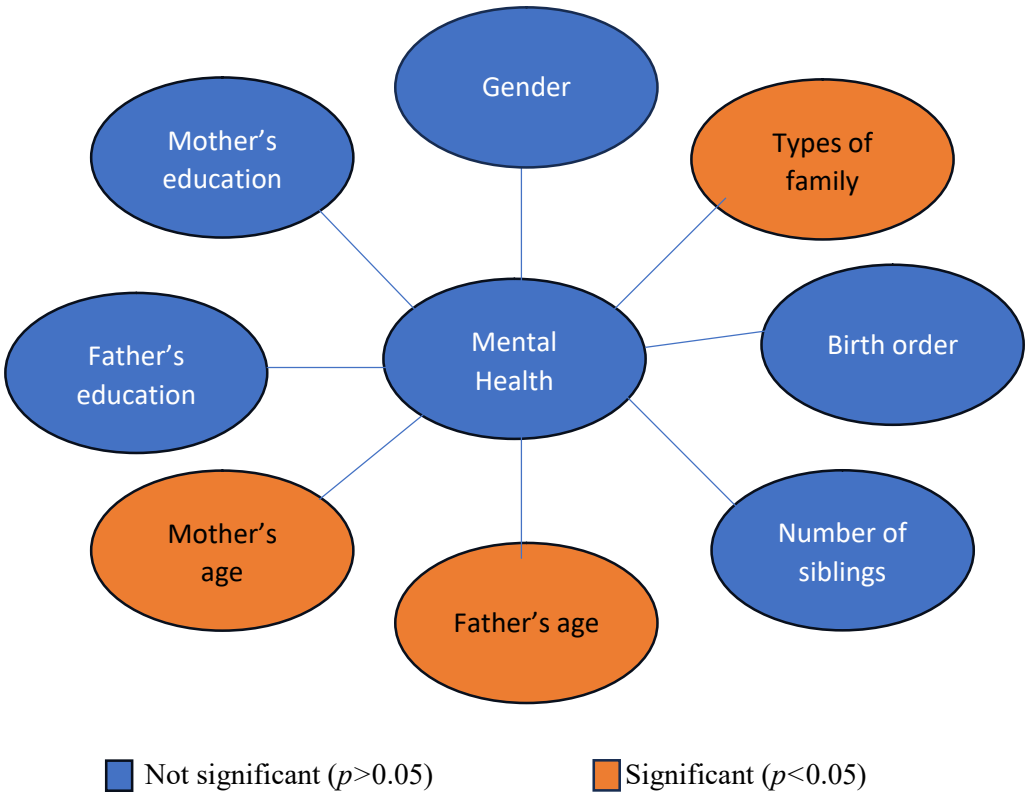
Overall Results of the Mean Difference Analysis of Pre-primary Students in Age Group 3-4



From figure 13 it was clear that the comparison of mean scores of mental health of pre-primary students of age group 3-4 was significant only for gender. The categorical variables such as types of family, birth order, number of siblings, father's age, mother's age, father's education and mother's education did not differ significantly.

Figure 14

Overall Results of the Mean Difference Analysis of Pre-primary Students in Age Group 4-5



From figure 14 it was clear that the comparison of mean scores of mental health of pre-primary students in age group 4-5 was significant for types of family, father's age, and mother's age. The categorical variables such as gender, birth order, number of siblings, father's education and mother's education did not differ significantly.

Correlation Analysis

Correlation analysis was used to determine the relationships between mental health and its dimensions. The investigator used Karl Pearson's product-moment co-efficient of correlation analysis, the interrelationship between mental health and its dimensions in pre-primary students of age groups 3-4 and 4-5 was obtained.

Relationship between Mental Health and its Dimensions

The correlation was computed to determine the relationship between mental health and its dimensions such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. Table 48 illustrates the interrelationship between mental health and its dimensions of pre-primary students of age groups 3-4.

Table 48

Interrelationship of Mental Health and its Dimensions among Pre-primary Students in Age Group 3-4

Dimensions	PF	EC	IR	IS	BR	CF	LS
PF							
EC	.492**						
IR	.449**	.463**					
IS	.580**	.551**	.687**				
BR	.449**	.539**	.559**	.698**			
CF	.517**	.479**	.605**	.665**	.605**		
LS	.497**	.436**	.523**	.614**	.566**	.612**	
Mental health	.701**	.684**	.812**	.886**	.793**	.834**	.765**

PF- Physical Functioning; EC-Emotional Competence; IR-Interpersonal Relations;
IS-Intrapersonal Skills; BR-Behaviour Regulation; CF- Cognitive Functioning; LS-Language Skills

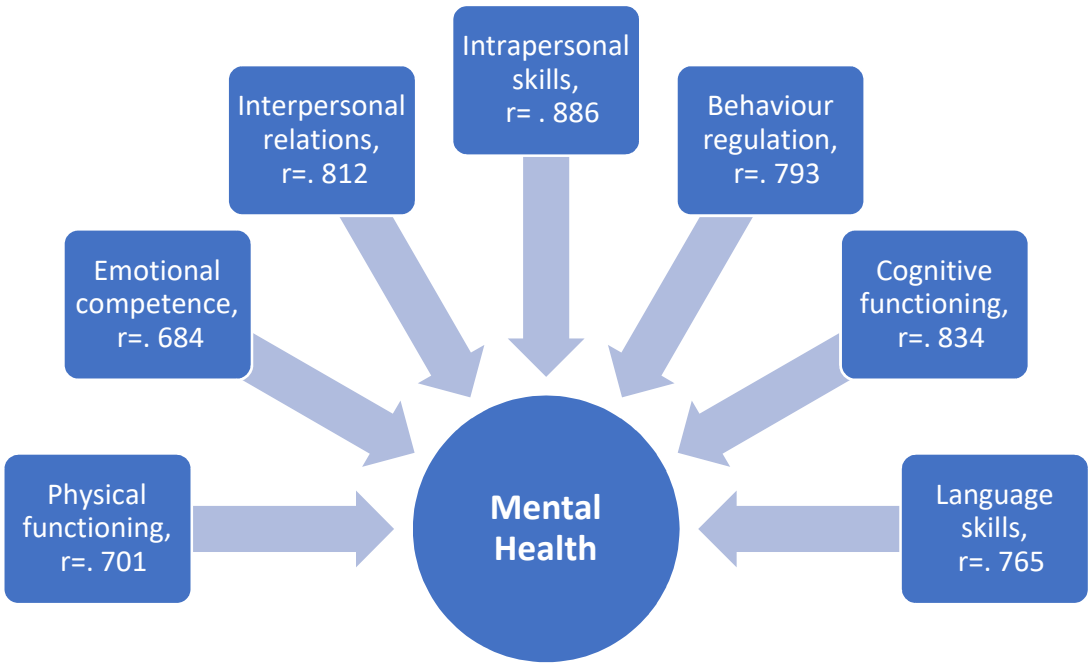
** correlation is significant at the 0.01 level (2-tailed)

Table 48 indicates a significant positive relationship between mental health and its dimensions. There was a high positive correlation between intrapersonal skills and mental health r (331) = .886, p<.01. The correlation between cognitive functioning and mental health was found to be high and positive, r (331) = .834, p<.01. There was a high positive correlation between interpersonal relations and mental health, r (331) = .812, p<.01. The correlation between behaviour regulation

and mental health was found to be highly correlated, r (331) = .793, p<.01. There was a high positive correlation between language skill and mental health, r (331) = .765, p<.01. The correlation between physical functioning and mental health was found to be highly correlated, r (331) = .701, p<.01. There was a substantial correlation between emotional competence and mental health, r (331) = .684, p<.01.The overall results of the correlation analysis were summarised in figure 15.

Figure 15

The Results of the Interrelationship between Mental Health and its Dimensions among Pre-primary Students in Age Group 3-4



Thus, the correlation matrix revealed that mental health and its seven dimensions have a significant and positive relationship. Physical functioning, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills have a high relationship, whereas there was a substantial correlation between emotional competence and mental health. The results imply that as mental health changes, the seven dimensions, physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour

regulation, cognitive functioning and language skills - also change in the same direction.

Table 49

Interrelationship of Mental Health and its Dimensions in Pre-primary Students in Age Group 4-5

Dimensions	PF	EC	IR	IS	BR	CF	LS
PF							
EC	.400**						
IR	.452**	.459**					
IS	.588**	.582**	.697**				
BR	.444**	.451**	.500**	.701**			
CF	.492**	.378**	.578**	.649**	.585**		
LS	.477**	.444**	.502**	.644**	.579**	.669**	
MH	.688**	.647**	.798**	.906**	.775**	.815**	.788**

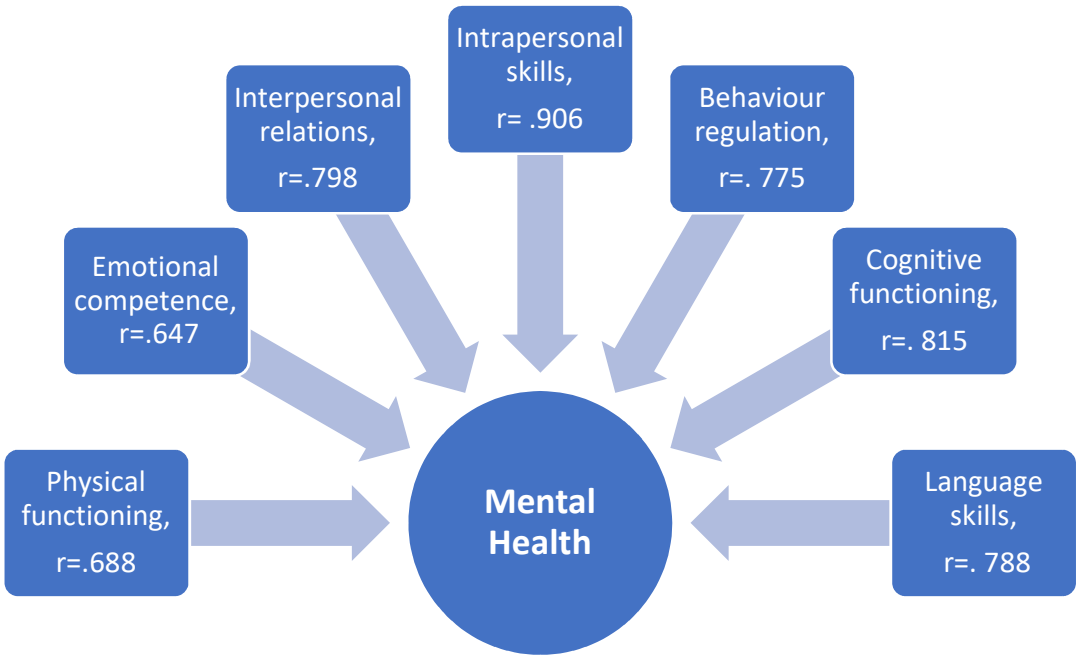
PF- Physical Functioning; EC-Emotional Competence; IR-Interpersonal Relations; IS-Intrapersonal Skills; BR-Behaviour Regulation; CF- Cognitive Functioning; LS-Language Skills

** correlation is significant at the 0.01 level (2-tailed)

Table 49 indicated a positive and significant relationship between mental health and its dimensions. There was a high correlation between intrapersonal skills and mental health r(539) = .906, $p<.01$. The correlation between cognitive functioning and mental health was found to be highly correlated, r (539) = .815, $p<.01$. There was a high correlation between interpersonal relations and mental health, r (539) = .798, $p<.01$. The correlation between language skills and mental health was found to be highly correlated, r (539) = .788, $p<.01$. There was a high correlation between behaviour regulation and mental health, r (539) = .775, $p<.01$. The correlation between physical functioning and mental health was found to be substantially correlated, r (539) = .688, $p<.01$. There was a substantial correlation between emotional competence and mental health, r (539) = .647, $p<.01$.The overall results of the correlation analysis were summarised in figure 16.

Figure 16

The Results of the Interrelationship between Mental Health and its Dimensions among Pre-primary students in age group 4-5



Thus, the correlation matrix revealed that mental health and its seven dimensions have a significant and positive relationship. Interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills have a high relationship, whereas physical functioning and emotional competence were substantially correlated. The results pointed out that as mental health changes, the seven dimensions, physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills-also change in the same direction.

Discussions

The study was aimed at assessing the levels of mental health of pre-primary students and comparing the mean scores of mental health among pre-primary students in age groups 3-4 and 4-5 based on categorical variables such as gender, types of family, number of siblings, birth order, father's age, mother's age, father's

education and mother's education. Additionally, examined the interrelationship between mental health and its dimensions including physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills.

The findings of the study revealed that 20.54% of pre-primary students in age group 3-4 were in the low mental health group, 49.55% and 29.91% were in the average and high mental health groups, respectively. Moreover, 28.94% of pre-primary students in age group 4-5 were in the low mental health group, 47.68% and 23.38% were in the average and high mental health groups, respectively. According to recent research conducted by Charach et al. (2020), mental health problems were identified in 17.6% of preschoolers by primary and community healthcare practitioners and psychiatric diagnosis were identified in 18.4% of preschoolers.

The result indicated that the mean scores of mental health among pre-primary students in age group 3-4 differ significantly, indicating girls have better mental health than boys. The findings of the present study are line with the previous results of Finch et al. (2018). Girls had fewer externalizing behaviour problems and more prosocial behaviours. The findings stand in contrast with prior work by Sawa and Hagibara (2023), indicating girls were found to have worse mental health than boys. Furthermore, the present study demonstrated that the mean scores of mental health among pre-primary students in age group 4-5 do not differ significantly. These results supported previous study in which Wu et al. (2014) found no significant gender differences on the overall mental health score and all its subscale scores, except for aggressive behaviour. Boys had a higher mean score on aggressive behaviour, compared to girls. This means that boys tend to be more aggressive than girls.

Among 3-4 age group students, joint family and nuclear family do not differ significantly. Nevertheless, among the 4-5 age group of students, students from joint families show better mental health than students from nuclear families. The results support the previous study among adolescents (Panchal, 2013). The students in age groups 3-4 and 4-5 have no significant difference in the number of siblings. The results contrast with the previous study by Finch et al. (2018), indicating children with more siblings had fewer externalizing behaviour problems and more prosocial behaviours at four years. Additionally, the present study implies that there is no significant difference in the birth order of students. The result is in contrast with the prior study of Fukuya et al. (2021) with 9-10-year-old students, in which Last-born children showed the lowest total mental health difficulties score and the highest prosocial behaviours score among Last-born children.

The findings indicated that the mean scores of mental health among pre-primary students in age group 3-4 did not differ significantly. Additionally, the mental health of pre-primary students in age group 4-5 based on the categorical variable father's age differs significantly, indicating pre-primary students of their father's age group 31-35 have better mental health than the age group of 36-40. The previous study by McGrath et al. (2014) revealed that the children of teenage fathers had a 28% of increased risk for a psychiatric disorder whereas the offspring of fathers 45 years of age or older had a 34% increased risk.

The results showed that the mean scores of mental health of pre-primary students in age group 3-4 did not differ significantly. Moreover, the mean scores of mental health of pre-primary students in the age group of 4-5 belonging to the mother's age differ significantly. The mean score indicated that students in the mother's age group 21-25 have better mental health than those in the age groups between 31-35 and between 36-40. The study by McGrath et al., 2014 gives

extended results showing that children of mothers aged 12 to 19 years had a 51% of increased risk of having a mental disorder. The children of teenaged and older (40-44 years old) mothers had significantly increased risks for mental retardation.

The result indicated that the mean scores of mental health among pre-primary students of age groups 3-4 and 4-5 based on the categorical variable father's education belonging to the high school level, higher secondary level, graduate level, and post graduate level groups did not differ significantly. Furthermore, the study revealed that the mean scores of mental health among pre-primary students of age groups 3-4 and 4-5 based on the categorical variable of mother's education belonging to high school level, higher secondary level, graduate level, and post graduate level groups did not differ significantly. The result from the previous study of Fakhrunnisak and Patria, (2022) indicated that parent's education levels were associated with their children's mental health, which is contrary to the result of the present study.

There is a positive and significant relationship between mental health and its dimensions such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills of pre-primary students of age groups 3-4 and 4-5. The relationship between physical functioning and mental health is supported by the study of (Biddle & Asare, 2011). The study of Shi et al., 2021, lines up with the relationship between emotional competence and mental health. The relationship between interpersonal relationships and mental health was in line with the study of Morales-murillo et al. (2020). The intrapersonal skills and mental health are significantly associated with the mental health, as suggested by the existing literature studied in adolescence (Chang et al., 2021). A previous study suggests the relationship between behaviour regulation and mental health as infants with multiple moderate-to-severe regulatory

problems are at a greatly increased risk of later mental health concerns during childhood (Cook et al., 2019). The relationship between the cognitive functioning and mental health is supported by the study of Gale et al. (2012). Language skills and mental health are positively related. The study by St Clair et al., 2019, supports the results.

Conclusions

The present study mainly focused on the mental health of pre-primary students. The analysis had gone through three phases, the qualitative phase, the tool development phase and the quantitative phase.

In the qualitative phase, seven indicators of mental health were identified from the thematic analysis. Physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. Subthemes of physical functioning that emerged comprised sleeping patterns, pain, appetite, bowel and bladder functioning, breathing patterns, gross motor functioning, and fine motor functioning. Emotional understanding, emotional expression, emotional regulation and positive emotions are the subthemes of emotional competence. Interaction, relationship, participation, communication, play, co-operation, adaptation, and leadership quality were the components of interpersonal skills. Autonomy, empathy, self-esteem and problem-solving are the critical factors of intrapersonal skills. Behaviour regulation includes self-control, rule compliance, asking for consent, taking turns, waiting, self-management, withdrawal from harmful situations, and the approval of others. Cognitive functioning was described as questioning, imitation, role play, identification, classification, memory, attention, imagination, and time concepts. Language skills included receptive and expressive language. Furthermore, the construct mental health of pre-primary students is defined

as the optimal development of physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills.

The second phase is tool development, the dimensions of the scale were confirmed with thematic analysis, and a thorough literature review. Then, seven dimensions of the mental health scale are selected. The items of the mental health scale were prepared based on the themes, codes and child development theories. The final mental health scale consisted of 75 items after the item analysis. Moreover, the reliability and validity of the scale are estimated. The reliability of the mental health scale was .942 and the construct validity was measured using factorial validity. Additionally, established the norms of mental health scale for pre-primary students separately for age groups 3-4 and 4-5.

In the quantitative phase, the mental health of pre-primary students was assessed to find the level of mental health of pre-primary students, compared based on the categorical variables, and interrelationships between the mental health and its dimensions were examined. The results revealed that, of the 3-4 age group students and the 4-5 age group students, 20.54% and 28.94% have low mental health respectively. For 3-4 age group students, girls have better mental health than boys. But, for the 4-5 age group students show no significant difference between girls and boys. Among 3-4 age group students, joint family and nuclear family do not differ significantly. Nevertheless, among the 4-5 age groups of students, students from joint families show better mental health than students from nuclear families. The students in age group 3-4 and 4-5 have no significant difference in mean scores of mental health based on the number of siblings and birth order. Based on their father's age and mother's age students in 3-4 age group have no significant difference. The mental health of pre-primary students in the age group of 4-5

belonging to the father's age differs significantly, indicating that fathers in the age group 31–35 have better mental health than those in age group 36-40. In the case of mother's age the mental health of pre-primary students in age group of 4-5 differs significantly. The mean score indicated that students in the mother's age range 21-25 have better mental health than those in the age group between 31–35 and 36-40. Father's education and mother's education have no significant difference in mental health among students in age groups 3-4 and 4-5. There is a positive and significant relationship between mental health and its dimensions such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning and language skills.

Chapter 5

SUMMARY, FINDINGS & CONCLUSIONS

- Study in retrospect
- Major findings of the study
- Tenability of Hypotheses
- Conclusions
- Limitations of the study
- Suggestions for further research

SUMMARY, FINDINGS AND CONCLUSIONS

The present study is focused on the mental health of pre-primary students. This chapter summarises the important details of the study, and provides a brief description of the various stages of the present study, major findings, conclusions, limitations and suggestions for further research. A brief description of the important details of the present study is the following.

Study in Retrospect

Study in retrospect includes the major stages of study such as the restatement of the problem, variables, objectives, hypotheses, and methodology in brief.

Restatement of the Problem

The current study identified indicators of mental health of pre-primary students. A standardised mental health scale for pre-primary students was developed, and norms were established. The levels of mental health of pre-primary students were assessed. Furthermore, compared the mental health of pre-primary students based on categorical variables and examined the interrelationship between mental health and its dimensions. Hence, the study was restated as an exploratory study on mental health among pre-primary students.

Variable of the Study

The following variable was used for the present study.

- ✶ Mental Health

Categorical Variables

1. Gender
2. Types of family

3. Number of siblings
4. Birth order
5. Father's age
6. Mother's age
7. Father's education
8. Mother's education

Objectives of the Study

The present study aimed to achieve the following objectives.

1) To identify the indicators of mental health in pre-primary students.
2) To construct and standardise a mental health scale for pre-primary students.
3) To find out the levels of mental health among pre-primary students in age groups 3-4 and 4-5.
4) To compare the mean scores of mental health among pre-primary students in age groups 3-4 and 4-5 for the subsamples based on
    - ✧ Gender
    - ✧ Types of family
    - ✧ Number of siblings
    - ✧ Birth order
    - ✧ Father's age
    - ✧ Mother's age
    - ✧ Father's education
    - ✧ Mother's education
5) To study the interrelationship between mental health and its dimensions among pre-primary students in age groups 3-4 and 4-5.

Hypotheses of the Study

The present study employed the following hypotheses.

1. There exist different levels of mental health among pre-primary students in age group 3-4.
2. There exist different levels of mental health among pre-primary students in age group 4-5.
3. There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on
   - Gender
   - Types of family
   - Number of siblings
   - Birth order
   - Father's age
   - Mother's age
   - Father's education
   - Mother's education
4. There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on
   - Gender
   - Types of family
   - Number of siblings
   - Birth order
   - Father's age
   - Mother's age
   - Father's education
   - Mother's education

5. There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 3-4.
6. There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 4-5.

Methodology

The study employed an exploratory sequential mixed method design. The study has three phases: qualitative, tool development and quantitative phases. The qualitative phase was used to explore the indicators of mental health of pre-primary students through interviewing pre-primary teachers, special teachers, and experts in psychology and education. In the tool development phase, based on the mental health indicators that emerged from the qualitative phase and literature review, a standardised mental health scale for pre-primary students was developed, and norms were established. Then, a quantitative phase was used to assess the levels of mental health of pre-primary students in age groups 3-4 and 4-5, compared mental health based on categorical variables and measured the interrelationship of mental health and its dimensions among pre-primary students.

Sample Selected for the Study

For the qualitative phase, interviews were done with fifty pre-primary teachers, fifty special teachers, and twenty-eight experts in psychology and education. In addition, sixty pre-primary students and thirty parents were observed to ensure credibility of data through data triangulation. In the second phase of the study, a mental health scale was developed based on the indicators identified through the qualitative phase and literature review. Subsequently, the mental health scale for pre-primary students was standardized, and norms were established, for which 1000 pre-primary students were selected. The quantitative phase, which deals

with both preliminary and major data analysis, was the third phase. A sample of 870 pre-primary students was chosen for the analysis of data.

Tools and Techniques used for the Study

The following tools and techniques were used for the study.

1. Semi-structured interview schedule for pre-primary teachers
2. Semi-structured interview schedule for special teachers
3. Semi-structured interview schedule for experts
4. Semi-structured interview schedule for parents
5. Observation schedule for pre-primary students
6. General data sheet
7. Mental health scale for pre-primary students

The techniques used for the study.

1. Interview
2. Participant observation

Analysis Procedure used for the Study

The following are the analysis procedures employed for the study.

1. Thematic analysis
2. Percentile
3. Descriptive statistics
4. Percentage analysis
5. Test of significance of the difference between means for a large independent sample
6. Analysis of variance
7. Pearson's product moment coefficient of correlation

Major Findings of the Study

The major findings discussed about the indicators of mental health of pre-primary students, the development of standardised mental health scale and establishment of norms. Additionally, the investigator assessed the levels of mental health, compared the mental health based on categorical variables and examined the interrelationship between mental health and its dimensions. The findings of the study were summarised and presented on the basis of three phases: Qualitative analysis, Tool development and Quantitative analysis.

Phase 1: Qualitative Analysis

1. Physical functioning in pre-primary students includes their sleeping pattern, appetite, pain, bowel and bladder functioning, breathing pattern, gross motor functioning, and fine motor functioning.

    - A sleeping pattern means an adequate amount of sleep during the night and day.
    - Pain involves not always complaining of severe pain.
    - Appetite refers to no change in the eating habits of the child.
    - Bowel and bladder functioning involves acquiring control over both the bowel and bladder.
    - The breathing pattern comprised the child's normal breathing pattern during the day and night.
    - Gross motor functioning included running, jumping, climbing, walking up and down stairs, and participating in sports.
    - Fine motor functioning consisted of buttoning off the shirt, threading beads onto a lace, and controlling a pencil in a preferred hand.

2. Emotional competence was based on a number of aspects, including emotional understanding, emotional expression, emotional regulation, and positive emotions.
    - Emotional understanding implies an understanding of others' emotions and their own.
    - Emotional expression entails expressing emotions and feelings appropriately.
    - Emotional regulation is the ability of children to learn to control their emotions and emotionally react in a way that is acceptable to others.
    - Positive emotions encompassed a child who always displayed positive feelings, indicating that he or she was primarily happy.
3. Interpersonal relations included interaction, relationship, participation, communication, play, cooperation, adaptation, and leadership quality.
    - Interaction consisted of children easily mingling with other children and interacting with adults.
    - Relationships involve children making friendships with other children and showing attachment to the teacher.
    - Participation refers to a child being constantly active in groups and showing interest in one thing after another.
    - Communication means children talk with others and share their experiences with others.
    - Play is comprised of the child loving and enjoying playing, playing with friends using their favourite toys, and playing by himself or herself.
    - Co-operation encompasses children sharing things with others, sharing toys while playing, and helping others while playing.

- Adaptation means the child adapts to the situations, can take part in social situations, and adjusts to other children in the group.
- Leadership quality entailed that the child take leadership in groups.

4. Intrapersonal skills incorporated autonomy, empathy, self-esteem, and problem-solving.
    - Autonomy refers to the child keeping their things in a proper place (bag, books, water bottle, shoes, toys, lunch box), being independent in daily activities, having definite choices for food and dressing, having their own opinions, asking for their needs (water, food, toys), and getting up by themselves when they fall down.
    - Empathy is comprised of a love for each other and a helping mentality.
    - Self-esteem involves having the child be confident, have the courage to tell their opinions, express their ideas, praise themselves, have the courage to try, have the courage to fail, and have a preference for their things.
    - Problem-solving entailed that the child solves the issues on his or her own while playing.
5. Self-control, rule compliance, asking for consent, taking turns, waiting, self-management, and approval of others were all part of the behaviour regulations.
    - Self-control consisted of the child controlling themselves according to the situation and expressing their anger through words.
    - Rule compliance involved having the child obey the instructions of others, understand the norms of the class, follow rules, and correct others to follow rules.
    - Asking for consent entailed that the child ask consent to take things.

- Taking turns means that the child will keep turn while playing.
- Waiting was described as the child's willingness to wait until their needs were met.
- Self-management included having neatness, doing things in a disciplined manner, being punctual in their activities, and withdrawal from negative situations.
- The term ‘approval of others’ describes a child’s preference for acceptance from others, particularly from friends.

6. Cognitive functioning was identified as questioning, imitation, role play, identification, classification, memory, attention, imagination, and time concepts.
   - Questioning meant the child would express their doubts based on the situation, respond to inquiries, and ask about stories while being told.
   - Imitation indicates that the child imitates others.
   - Role play implied that the child would act as cartoon characters, parents, or teachers.
   - Identification meant that the child recognised colours, the alphabet, gender, body parts, and drawings.
   - Classification involved the child classifying objects of the same colour, objects of the same shape, and big and small objects.
   - Memory entailed the child remembering and discussing prior occurrences and having an excellent memory.
   - Attention meant that the child needed to pay attention to the instructions and concentrate on their activity.
   - Imagination encompassed the idea that the child would use their imagination when conversing and to further elaborate on the stories they were telling.

- Time concepts consisted of the child's understanding of time, including when to eat and when parents reach home from work.

7. Language skills comprise receptive and expressive language.

- Receptive language means that the child can understand what others say, listening to the surrounding sounds; listening to the class for at least 10 minutes; and paying close attention to the directions provided to the child.
- Expressive language implies that the child can express their thoughts into words by naming family members, naming familiar things, speaking clearly, telling stories, singing songs, and using sentences of four or more words. Even strangers could comprehend what a child was saying.

Phase 2: Tool Development

8. The dimensions of mental health were derived from the thematic analysis, and through literature review. The mental health scale comprised 75 questions covering seven dimensions after the item analysis procedure.
9. The reliability of the mental health scale was measured using Cronbach's alpha method, and the value was found to be .942.
10. The face validity and construct validity of the mental health scale were estimated. The construct validity was established using factorial validity, showing that the mental health scale has good construct validity.
11. The norms were established separately for pre-primary students using percentiles in age groups 3-4 and 4-5.
12. For pre-primary students in age groups 3-4, the low mental health group had scores less than or equal to 285; the high mental health group had scores greater than or equal to 331, and the average group had scores in between the scores of 285 and 331.

13. For pre-primary students in age groups 4-5, the low mental health group had scores less than or equal to 293, the high mental health group had scores greater than or equal to 337 and the average group had scores between 293 and 337.

Phase 3: Quantitative Analysis

14. From the study, it was evident that 20.54% students in age group 3-4 have low mental health, 29.91% have high mental health, and 49.55% have average mental health.
15. Among students in age group 4-5, 28.94% have low mental health, 23.38% have high mental health, and 47.68% have average mental health.
16. There is a significant difference in mental health among pre-primary students in age group 3-4 based on gender, t = -2.70, p <.01. It showed the dominance of girls over boys in the mental health of pre-primary students in the age group of 3-4.
17. There is no significant difference in mental health among pre-primary students in age group 4-5 based on gender, t = -1.559, p > 0.05.
18. There is no significant difference in mental health among pre-primary students in age group 3-4 based on the types of family, t = 1.799, p>.05.
19. There is a significant difference in mental health among pre-primary students in age group 4-5 based on types of family, t = 2.409, p<0.05. It showed that the pre-primary students in the age group 4-5 from joint families have better mental health than those from nuclear families.
20. There is no significant difference in mental health among pre-primary students in age group 3-4 based on the number of siblings, F (2,328) = .436, p>.05.
21. There is no significant difference in mental health among pre-primary students in age group 4-5 based on the number of siblings, F (2, 536) = .739, p>.05.

22. There is no significant difference in mental health among pre-primary students in age group 3-4 based on birth order, F (2,328) = .240, p>.05.
23. There is no significant difference in mental health among pre-primary students in age group 4-5 based on birth order, F (2, 536) = 1.729, p>.05.
24. There is no significant difference in mental health among pre-primary students in age group 3-4 based on their father's age, F (2,328) = 2.432, p>.05.
25. There is a significant difference in mental health among pre-primary students in age group 4-5 based on their father's age, F (2, 536) = 3.803, p<.05, indicating students in father's age group 31–35 have better mental health than those in father's age group 36-40.
26. There is no significant difference in mental health among pre-primary students in age group 3-4 based on their mother's age, F (3,327) = 1.811, p>.05.
27. There is a significant difference in mental health among pre-primary students in age group 4-5 based on their mother's age, F (3, 535) = 3.475, p<.05. Students in mother's age group 21-25 have better mental health than those in mother's age groups 31-35 and 36-40.
28. There is no significant difference in mental health among pre-primary students in age group 3-4 based on their father's education, F (3,327) = .201, p>.05.
29. There is no significant difference in mental health among pre-primary students in age group 4-5 based on their father's education, F (3, 535) = 1.133, p>.05.
30. There is no significant difference in mental health among pre-primary students in age group 3-4 based on their mother's education, F (3,327) = .725, p>.05.
31. There is no significant difference in mental health among pre-primary students in age group 4-5 based on their mother's education, F (3, 535) = .486, p>.05.

32. There is a positive and significant relationship between mental health and its dimensions, such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills among pre-primary students in age groups 3-4 and 4-5.

Tenability of Hypotheses

Tenability of hypothesis is verified according to the findings of the study. Table 50 gives the details of the accepted hypothesis in the present study.

Table 50

Tenability of Hypotheses

Sl. No.	Hypotheses	Status
1.	There exist different levels of mental health among pre-primary students in age group 3-4.	Not rejected
2.	There exist different levels of mental health among pre-primary students in age group 4-5.	Not rejected
3.1	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on gender	Rejected
3.2	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on types of family	Not rejected
3.3	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on number of siblings	Not rejected
3.4	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on birth order	Not rejected
3.5	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on father's age	Not rejected
3.6	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on mother's age	Not rejected

Sl. No.	Hypotheses	Status
3.7	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on father's education	Not rejected
3.8	There is no significant difference in the mean scores of mental health among pre-primary students in age group 3-4 based on mother's education	Not rejected
4.1	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on gender	Not rejected
4.2	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on types of family	Rejected
4.3	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on number of siblings	Not rejected
4.4	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on birth order	Not rejected
4.5	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on father's age	Rejected
4.6	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on mother's age	Rejected
4.7	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on father's education	Not rejected
4.8	There is no significant difference in the mean scores of mental health among pre-primary students in age group 4-5 based on mother's education	Not rejected
5	There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 3-4.	Not rejected
6	There is a significant interrelationship between mental health and its dimensions among pre-primary students in age group 4-5.	Not rejected

Conclusions

The mental health of pre-primary students was studied through a sequential exploratory mixed methods design. The present study mainly focused on the mental health of pre-primary students. The analysis had gone through three phases, qualitative phase, the tool development phase and the quantitative phase.

In the qualitative phase, seven indicators of mental health were identified from the thematic analysis: Physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. Subthemes related to physical functioning that emerged were sleeping patterns, pain, appetite, bowel and bladder functioning, breathing patterns, gross motor functioning, and fine motor functioning. Emotional understanding, emotional expression, emotional regulation, and positive emotions were the subthemes of emotional competence. The elements of interpersonal relations were interaction, relationship, participation, communication, play, cooperation, adaptation, and leadership quality. The essential components of interpersonal skills include autonomy, empathy, self-esteem, and problem-solving. Behaviour regulation includes self-control, rule compliance, asking for consent, taking turns, waiting, self-management, and the approval of others. Cognitive functioning was described as questioning, imitation, activities, identification, classification, memory, attention, imagination, and time concepts. Language skills included receptive and expressive language. Furthermore, the construct mental health of pre-primary students is defined as the optimal development of physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills.

The second phase is tool development; the dimensions of the scale were confirmed with thematic analysis, and a thorough literature review. Then, seven dimensions of the mental health scale were selected. The final mental health scale

consisted of 75 items. The reliability and validity of the scale was established. The reliability of the mental health scale was .942, and the construct validity was measured using factorial validity, was found satisfactory. Additionally, the established norms of the mental health scale for pre-primary students separately for age groups 3-4 and 4-5.

In the quantitative phase, the mental health of pre-primary students was assessed to find the level of mental health of pre-primary students, compared based on the categorical variables, and interrelationships between the mental health and its dimensions were examined. The results revealed that, of the 3-4 age group students and the 4-5 age group students, 20.54% and 28.94% have low mental health, respectively. For 3-4 age group students, girls have better mental health than boys. But, for the 4-5 age group, students show no significant difference between girls and boys. Among 3-4 age group students, joint family and nuclear family do not differ significantly. Nevertheless, among the 4-5 age groups of students, students from joint families show better mental health than students from nuclear families. The students in age group 3-4 and 4-5 have no significant difference based on number of siblings and birth order. Based on their father's age and mother's age, students in 3-4 age group have no significant difference. Students in the 4-5 age group showed better mental health for fathers aged between 31-35 than those aged between 36-40. In the case of students in the age group 4-5, there is a significant difference between the mother's age groups 21-25, 31-35 and 36-40. Students in mother's age group 21-25 shows better mental health than other groups. For students in age groups 3-4 and 4-5, father's education and mother's education have no significant difference. There is a positive and significant relationship between mental health and its dimensions, such as physical functioning, emotional competence, interpersonal relations, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills.

Overall, the study has provided valuable insights into the mental health of pre-primary students, which in turn can aid the stakeholders and authorities in taking initiatives towards the development of programmes for effective interventions.

Limitations of the Study

It is imperative to recognise the limitations of the research that require careful consideration. The present study has the following limitations.

1. The sample of the study consisted of pre-primary students, making it impossible to gather self-reported data on mental health. To address this limitation, the investigator developed a standardised teacher-reporting mental health scale for pre-primary students.
2. The study only included pre-primary students belonging to the age group of 3-5 years.
3. The study does not include a dimension-wise analysis since the required analysis would be excessively long.
4. Due to an insufficient amount of data, important categorical variables like parents' occupation could not be included in the study.

In spite of the study's limitations, the knowledge it provides about the mental health of pre-primary students is beneficial and enlightening. However, the study offers an excellent starting point for understanding the mental health of pre-primary students in Kerala. It is vital to take these limitations into account in any analysis.

Suggestions for Further Research

Based on the current study, it has been highlighted that there is a crucial need to delve deeper into the mental health of pre-primary students in Kerala. Indeed, there is still much more to learn about the various factors that affect their mental health. This field of study offers many opportunities for further investigation, and there is a lot of scope for related studies. The following are the suggestions for the further research based on the present study.

1. Deeper understanding of pre-primary students' mental health can be attained through the conduct of a longitudinal study. Through long-term follow-up, researchers can monitor changes in children's mental health.
2. In order to provide a more thorough understanding of the factors that may contribute to pre-primary students' mental health, researchers might consider including more independent and dependent variables.
3. Researchers may consider comparing categorical variables, such as working and non-working parents, which can help to understand how these factors may impact the mental health of pre-primary students with different family backgrounds.
4. A study can be conducted to prepare intervention programs for teachers and parents. The intervention programs can help teachers and parents identify and address the specific needs of individual children, leading to better academic performance, increased engagement in learning, and improved behaviour. The study can be conducted on other age group of children
5. An investigation into the mental health difficulties faced by pre-primary students in Kerala could be carried out. It could provide valuable insights into children's unique difficulties and help to form strategies for addressing them.
6. Conducting a comparative study to evaluate students' mental health across various types of preschools in Kerala could be a valuable research pursuit.
7. Conduct a study to prepare a comprehensive educational module that ensures awareness of mental health among teachers and parents to equip them to provide the children with the best possible care and education. This module could cover essential topics such as child development, mental health, and common mental health problems.

Chapter 6
RECOMMENDATIONS

- Educational implications of the study

RECOMMENDATIONS

The formative years are critical in shaping a child's overall developmental trajectory. The mental health assists the child in developing the necessary social, emotional, and cognitive skills for a happy future. When mental health issues are addressed at an early stage, their impact can be mitigated. Early intervention and proper care can help the child grow up and have a productive life. It is necessary to raise awareness among parents, teachers, and other policymakers to identify the issues early on.

The mental health of pre-primary students was explored through interviewing pre-primary teachers, special teachers and experts in psychology and education. The indicators of mental health were identified through thematic analysis of interview data. Based on the themes and literature review, seven dimensions of mental health were generated and a mental health scale for pre-primary students was developed. The scale was standardised and norms were established. Further, the data was collected from a representative sample in Kerala to assess the mental health of pre-primary students. The study revealed the prevalence of low mental health among pre-primary students. Gender has a significant difference in mental health of pre-primary students for age group 3-4. And, types of family, father’s age and mother’s age have a significant difference in mental health among pre-primary students in the age group 4-5. Intrapersonal skills have a higher positive correlation with mental health than other dimensions. Based on the current research, the following recommendations are given as educational implications.

Educational Implications

The following educational implications are given based on the findings of the study.

1. The study highlighted the significance of pre-primary students' mental health. It discovered that seven indicators emerged from the thematic analysis of interview data. Every theme has a unique importance. For this reason, pre-primary teachers ought to be well-versed in the indicators of mental health as well as the early signs and symptoms of mental health problems in children. Furthermore, the pre-primary teacher education curriculum ought to place a strong emphasis on the significance of indicators, including physical functioning, emotional competence, interpersonal relationships, intrapersonal skills, behaviour regulation, cognitive functioning, and language skills. The teacher should also be knowledgeable about both theoretical and applied aspects of mental health.

2. The findings showed that, for the age groups of 3–4 and 4-5, respectively, 20.54% and 28.94% of students had low mental health. It is essential to identify and treat mental health issues early on. Teachers play an important part in this process since they are the initial point of contact for children experiencing difficulties. Teachers must, therefore, possess a thorough understanding of mental health concerns and the variables that may impact children's mental health. Strategies for strengthening teachers' ability to referral services should be included in in-service training programmes.

3. There is a need for significant enhancements to the existing programme, Nutrition and Health Education for Parents. It is essential to hold the awareness classes more frequently and ensure all parents can attend them.

The focus of the sessions needs to be on mental health, including the variables that influence mental health and the most common mental health problems that pre-primary students face. The pervasive stigma and discrimination around mental health issues also need to be eradicated, and parents need to be given the information to support their child's mental health.

4. Pre-primary children should be prioritised in parenting clinics offered by the Women and Child Development Department. Comprehensive support for parents must be provided by a professional team comprising pediatricians, child psychologists, psychiatrists, and special teachers. Furthermore, every panchayath should have at least one parenting clinic.

5. Our Responsibility to Children (ORC) is an innovative concept started by the Integrated Child Protection Scheme (ICPS). This programme should place special emphasis on pre-primary children to identify and address mental health issues at an early age. It is essential to implement gender-specific programmes to improve pre-primary students' mental health.

6. Compared to children in nuclear families, children in joint families of age group 4-5 exhibit superior mental health. This result demonstrates how a child's mental health is positively impacted by interaction with more family members. Therefore, district mental health professionals should organise appropriate and prompt awareness campaigns to inform family members about the importance of mental health since this can assist in improving the healthy home environment and promote children's mental health.

7. In order to eradicate the stigma that exists in society and to raise awareness of the importance of pre-primary children's mental health, the Department of

Women and Child Development should host workshops for parents, grandparents, and other family members. In today's world, grandparents play a vital role in raising children. Therefore, it is essential to provide a healthy home environment for the child and to educate the family members.

8. Parents' age has a significant difference in mental health among pre-primary students in age group 4-5. Awareness programmes should be given at the panchayat level to married couples and couples who are planning to start a family about the importance of parents' age and the mental health of their children.
9. Intrapersonal skills are highly correlated with mental health among pre-primary students. The school should ensure an healthy environment to improve the intrapersonal skills of children. Teachers should give appropriate awareness to parents about the importance of intrapersonal skills.
10. Proper monitoring is required to ensure that children attending government, private, or aided pre-primary schools in Kerala are shielded from activities that negatively affect their mental health.

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APPENDICES

Appendix A1

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR PRE-PRIMARY TEACHERS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview :

Date :

Place :

Interviewer :

Interviewee :

Type of School :

1. മാനസികാരോഗ്യമുള്ള കുട്ടിയെ എങ്ങനെ തിരിച്ചറിയാം?

2. പ്രീ-പ്രൈമറി കുട്ടികളുടെ മാനസികാരോഗ്യത്തിന്റെ സൂചകങ്ങൾ എന്തൊക്കെയാണ്?

3. കുട്ടികളിലെ മാനസികാരോഗ്യപ്രശ്നങ്ങൾ തിരിച്ചറിയാൻ നിങ്ങൾ എന്ത് നടപടികളാണ് സ്വീകരിക്കുന്നത്?

Appendix A2

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR PRE-PRIMARY SCHOOL TEACHERS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview :

Date :

Place :

Interviewer :

Interviewee :

Type of School :

Questions

1) How can we identify mentally healthy child?

2) What are the indicators of mental health of pre-primary students?

3) What actions do you take to identify the mental health issues in children?

Appendix B1

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR SPECIAL TEACHERS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview :

Date :

Place :

Interviewer :

Interviewee :

1. മാനസികാരോഗ്യമുള്ള കുട്ടിയെ എങ്ങനെ തിരിച്ചറിയാം?

2. പ്രീപ്രൈമറി കുട്ടികളുടെ മാനസികാരോഗ്യത്തിന്റെ സൂചകങ്ങൾ എന്തൊക്കെയാണ്?

3. കുട്ടികളിലെ മാനസികാരോഗ്യ പ്രശ്നങ്ങളുടെ ലക്ഷണങ്ങൾ എന്തൊക്കെയാണ്?

Appendix B2

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR SPECIAL TEACHERS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview :

Date :

Place :

Interviewer :

Interviewee :

Questions

1) How can we identify mentally healthy child?

2) What are the indicators of mental health of pre-primary students?

3) What are the symptoms of mental health issues in children?

Appendix C1

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR EXPERTS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview:

Date:

Place:

Interviewer:

Interviewee:

Type of School:

1. കുട്ടികളുടെ മാനസികാരോഗ്യത്തെ എങ്ങനെ നിർവചിക്കാം?

2. പ്രീപ്രൈമറി കുട്ടികളുടെ മാനസികാരോഗ്യത്തിന്റെ സൂചകങ്ങൾ എന്തൊക്കെയാണ്?

3. കുട്ടികളിലെ മാനസികാരോഗ്യ പ്രശ്നങ്ങളുടെ ലക്ഷണങ്ങൾ എന്തൊക്കെയാണ്?

Appendix C2

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR EXPERTS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview:

Date:

Place:

Interviewer:

Interviewee:

Type of School:

Questions

1) How can you define mental health of pre-primary children?

2) What are the indicators of mental health of pre-primary students?

3) What are the symptoms of mental health issues in children?

Appendix D1

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR PARENTS

Dr. Vasumathi T. — Assistant Professor
Reshma P.M. — Research Scholar

Time of Interview:

Date:

Place:

Interviewer:

Interviewee:

Age of the child:

Gender of the child:

1. നിങ്ങളുടെ കുട്ടി സാധാരണയായി ഏർപ്പെടുന്ന ശാരീരിക പ്രവർത്തനങ്ങൾ എന്തൊക്കെയാണ്?
2. കുട്ടി ഏതൊക്കെ രീതിയിലാണ് അവരുടെ വികാരങ്ങൾ പ്രകടിപ്പിക്കാറുള്ളത്?
3. കുട്ടി വീട്ടിലുള്ളവരോടും പുറത്തുള്ളവരോടും എങ്ങനെയാണ് ഇടപഴകുന്നത്?
4. കുട്ടിയുടെ ഇഷ്ടങ്ങളും അഭിപ്രായങ്ങളും ആവശ്യങ്ങളും തുറന്ന് പറയാറുണ്ടോ?
5. കുട്ടിയുടെ ദൈനംദിന പ്രവർത്തനങ്ങൾ സ്വന്തമായി ചെയ്യാറുണ്ടോ?
6. കുട്ടിക്ക് വ്യത്യസ്തതകൾ തിരിച്ചറിയാൻ സാധിക്കുന്നുണ്ടോ [ലിംഗം, ആകൃതി, നിറം]? വിശദമാക്കുക.
7. കളികളിൽ ഏർപ്പെടുമ്പോൾ കുട്ടി പ്രകടിപ്പിക്കുന്ന സ്വഭാവസവിശേഷതകൾ എന്തൊക്കെയാണ്?
8. കൃത്യമായി ആശയവിനിമയം നടത്താൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ടോ?
9. പൊതുസ്ഥലങ്ങളിൽ കൊണ്ടുപോകുമ്പോൾ കുട്ടി എങ്ങനെ പ്രതികരിക്കും?
10. കുട്ടി കൈവരിച്ച വൈജ്ഞാനിക നേട്ടങ്ങൾ എന്തൊക്കെയാണ്?

Appendix D2

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

SEMI-STRUCTURED INTERVIEW SCHEDULE FOR PARENTS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Time of Interview :

Date :

Place :

Interviewer :

Interviewee :

Age of the child :

Gender of the child :

Questions

1. What are the physical activities does your child generally do?
2. How does the child express his/her feelings?
3. How does the child interact with family members and others?
4. Does the child openly discuss about his/her likes, opinions and needs? What are they?
5. Does the child do daily activities on their own? Which are they?
6. Does the child recognise the differences [gender, shape, colour]? Explain.
7. What are the characteristics that the child exhibits while engaging in play?
8. Does the child able to communicate effectively? Explain.
9. How does the child react when taken to public places?
10. What are the cognitive achievements accomplished by the child?

Appendix E

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

OBSERVATION SCHEDULE FOR PRE-PRIMARY STUDENTS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Type of observation :

Time :

Place :

Observer :

Physical Development (ശാരീരിക വികസനം)	♦ Gross motor activities ♦ Fine motor activities ♦ Pain ♦ Bowel and bladder functioning ♦ Appetite
Emotional Development (വൈകാരിക വികസനം)	♦ Emotional understanding ♦ Emotional regulation ♦ Emotional expression ♦ Positive emotions
Social Development (സാമൂഹിക വികസനം)	♦ Interpersonal relations ♦ Intrapersonal skills
Cognitive Development (വൈജ്ഞാനിക വികസനം)	♦ Questioning ♦ Identification ♦ Classification ♦ Memory ♦ Attention ♦ Time concept
Language Development (ഭാഷാ വികസനം)	♦ Receptive language ♦ Expressive language

Exploration of Mental Health among Pre-primary Students

Appendix F

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

GENERAL DATA SHEET

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

1. Name of the Child : (Optional)
2. Age of the Child :
3. Gender : ☐ Boy
   ☐ Girl
4. Name of the School :
5. Number of Siblings :
6. Birth Order : ☐ First - born
   ☐ Middle - born
   ☐ Last - born

Background Information of Parents

7. Father's Age :
8. Father's Education :
9. Mother's Age :
10. Mother's Education :
11. Type of Family :

Exploration of Mental Health among Pre-primary Students

Appendix G1

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

MENTAL HEALTH SCALE FOR PRE-PRIMARY STUDENTS

Dr. Vasumathi T. — Assistant Professor
Reshma P.M. — Research Scholar

നിർദ്ദേശങ്ങൾ

ഈ പ്രസ്താവനകൾ പ്രീപ്രൈമറി കുട്ടികളുടെ മാനസികാരോഗ്യം വിലയിരുത്തുന്നതിനാണ്. മൂന്ന് മാസമെങ്കിലും കുട്ടിയെ അടുത്ത് അറിയുന്ന ടീച്ചർ മാത്രമാണ് ഈ പ്രസ്താവനകളോട് പ്രതികരിക്കേണ്ടത്. താഴെ കൊടുത്തിരിക്കുന്ന 5 തരത്തിലുള്ള പ്രതികരണങ്ങളിൽ ഏറ്റവും അനുയോജ്യമായവയാണ് അടയാളപ്പെടുത്തേണ്ടത്. 'ഒരിക്കലുമില്ല', 'അപൂർവ്വമായി മാത്രം', 'വല്ലപ്പോഴും', 'മിക്കപ്പോഴും', 'എല്ലായ്പ്പോഴും' എന്നിങ്ങനെ ഓരോ പ്രസ്താവനയും ശ്രദ്ധാപൂർവ്വം വായിച്ചതിനുശേഷം അനുയോജ്യമായ കോളത്തിൽ നിങ്ങളുടെ പ്രതികരണം ശരി (✓) ചിഹ്നം കൊണ്ട് രേഖപ്പെടുത്തുക. നിങ്ങളുടെ പ്രതികരണങ്ങൾ ഗവേഷണാവശ്യങ്ങൾക്ക് മാത്രമേ ഉപയോഗിക്കുകയുള്ളൂ.

ക്രമ നമ്പർ	പ്രസ്താവനകൾ	ഒരിക്കലുമില്ല	അപൂർവ്വമായി മാത്രം	വല്ലപ്പോഴും	മിക്കപ്പോഴും	എല്ലായ്പ്പോഴും
	Part A					
1.	ഓരോ പടിയിൽ കാൽ വെച്ച് കയറുവാനും ഇറങ്ങുവാനും കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
2.	വലിയ പന്ത് പിടിക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
3.	ഊഞ്ഞാലിൽ ഇരുന്ന് ആടാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
4.	വീതി കുറഞ്ഞ പ്രതലത്തിലൂടെ വീഴാതെ നടക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
5.	നിശ്ചിത ദൂരത്തിൽ ചാടാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
6.	വട്ടം വരയ്ക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
7.	പേന/പെൻസിൽ/ബ്രഷ് ശരിക്ക് പിടിച്ച് വരയ്ക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					

ക്രമ നമ്പർ	പ്രസ്താവനകൾ	ഒരിക്കലുമില്ല	അപൂർവ്വമായി	ചിലപ്പോൾ	മിക്കപ്പോഴും	എല്ലായ്പ്പോഴും
8.	ക്ലാസ്സിൽ വെച്ച് കുട്ടി നിന്ന നിൽപ്പിൽ മൂത്രം ഒഴിക്കാറുണ്ട്.					
9.	തലവേദന, വയറുവേദന തുടങ്ങിയ അസുഖങ്ങൾ അനുഭവപ്പെടുന്നതായി കുട്ടി പറയാറുണ്ട്.					
10.	ഭക്ഷണശീലത്തിൽ അടുത്ത കാലത്തായി കുട്ടി മാറ്റങ്ങൾ (വിശപ്പില്ലായ്മ, അമിത ഭക്ഷണം) കാണിക്കാറുണ്ട്.					
PART B						
11.	സുഹൃത്തുക്കൾ സങ്കടപ്പെട്ടിരിക്കുമ്പോൾ കുട്ടിക്ക് അത് മനസ്സിലാകാറുണ്ട്.					
12.	മറ്റുള്ളവർ ദേഷ്യം കാണിക്കുമ്പോൾ കുട്ടി അത് മനസ്സിലാക്കി അതിനനുസരിച്ച് പെരുമാറാറുണ്ട്.					
13.	മറ്റുള്ളവരുടെ (സുഹൃത്തുക്കൾ/രക്ഷിതാക്കൾ/അധ്യാപകർ) വൈകാരിക അവസ്ഥകൾ (സന്തോഷം/സങ്കടം) കുട്ടി തിരിച്ചറിയാറുണ്ട്.					
14.	സങ്കടം വന്നാൽ കുട്ടിയുടെ മുഖത്ത് അത് കാണാറുണ്ട്.					
15.	മാതാപിതാക്കളിൽ നിന്നും വിട്ടുനിൽക്കേണ്ട സാഹചര്യങ്ങൾ വരുമ്പോൾ കുട്ടിക്ക് അത് ബുദ്ധിമുട്ട് ഉണ്ടാക്കാറില്ല.					
16.	കളിക്കുന്നതിനിടയിൽ സുഹൃത്തിന്റെ കൈ അറിയാതെ തട്ടി വേദനിച്ചാലും അത് മനസിലാക്കി കുട്ടി കളി തുടരും.					
17.	കുട്ടി എപ്പോഴും സന്തോഷവാനാണ്/സന്തോഷവതിയാണ്.					
Part C						
18.	മറ്റു കുട്ടികളുമായി പെട്ടെന്ന് കൂട്ടുകൂടാറുണ്ട്.					
19.	കുട്ടി മുതിർന്നവരുമായി എളുപ്പത്തിൽ ഇടപഴകാറുണ്ട്.					
20.	കുട്ടി ടീച്ചറോട് നല്ല അടുപ്പം കാണിക്കാറുണ്ട്.					
21.	കുട്ടി ഗ്രൂപ്പിൽ സജീവമായി ഇടപഴകാറുണ്ട്.					
22.	എപ്പോഴും എന്തെങ്കിലും കാര്യങ്ങളിൽ കുട്ടി ഏർപ്പെട്ടുകൊണ്ടിരിക്കും.					
23.	മറ്റു കുട്ടികളോടും, മുതിർന്നവരോടും കുട്ടി നന്നായി സംസാരിക്കും.					
24.	ടീച്ചറോട് കുട്ടിയുടെ അനുഭവങ്ങളൊക്കെ പങ്കുവെക്കും.					
25.	കളിക്കുന്നതിനിടയിൽ മറ്റു കുട്ടികളെയും സഹായിക്കാറുണ്ട്.					

ക്ര നമ്പർ	പ്രസ്താവനകൾ	ഒരിക്കലുമില്ല	അപൂർവ്വമായി	ചിലപ്പോൾ	മിക്കപ്പോഴും	എല്ലായ്പ്പോഴും
26.	ഇഷ്ടപ്പെട്ട കളിപ്പാട്ടങ്ങളുമായി സുഹൃത്തുക്കൾക്കൊപ്പം കൂട്ടി കളിക്കാറുണ്ട്.					
27.	കൂട്ടി മറ്റുള്ളവരുമായി ഭക്ഷണം പങ്കുവെക്കാറുണ്ട്.					
28.	കൂട്ടിക്ക് കളിക്കാൻ ഇഷ്ടമാണ്.					
29.	പൊതുസ്ഥലങ്ങളിൽ കൊണ്ടുപോയാൽ ആ സാഹചര്യത്തിന് അനുസരിച്ച് കൂട്ടി പെരുമാറാറുണ്ട്.					
30.	കളിക്കുന്നതിനിടയിൽ ഗ്രൂപ്പിന്റെ നേതൃത്വം കൂട്ടി ഏറ്റെടുക്കാറുണ്ട്.					
	Part D					
31.	കൂട്ടി സ്വന്തമായി ടോയ്ലെറ്റ് ഉപയോഗിക്കാറുണ്ട്.					
32.	കൂട്ടി സ്വന്തമായി ഭക്ഷണം കഴിക്കാറുണ്ട്.					
33.	കൂട്ടി സ്വന്തമായി ഷൂസ്/ചെരുപ്പ് ഇടാറുണ്ട്.					
34.	കൂട്ടി സ്വന്തമായി കൈ കഴുകാറുണ്ട്.					
35.	കൂട്ടിക്ക് ആവശ്യമുള്ളത് (വെള്ളം/ഭക്ഷണം/കളിപ്പാട്ടങ്ങൾ) ചോദിക്കാറുണ്ട്.					
36.	വീണു പോയാൽ സ്വന്തമായി എണീക്കാൻ കൂട്ടി ശ്രമിക്കാറുണ്ട്.					
37.	കൂട്ടി എല്ലാവരോടും സ്നേഹം കാണിക്കാറുണ്ട്.					
38.	മറ്റുള്ളവരെ കൂട്ടി സഹായിക്കാറുണ്ട്.					
39.	കളിക്കുന്നതിനിടയിൽ സുഹൃത്തുക്കൾ വീണാൽ അവരെ കൂട്ടി ആശ്വസിപ്പിക്കാറുണ്ട്.					
40.	ഏത് കാര്യവും ആത്മവിശ്വാസത്തോടെ കൂട്ടി ചെയ്യാറുണ്ട്.					
41.	കൂട്ടിക്ക് സ്വന്തം അഭിപ്രായം പ്രകടിപ്പിക്കാനുള്ള കഴിവുണ്ട്.					
42.	സ്വന്തമായി സാധനങ്ങൾ (പുസ്തകങ്ങൾ, വസ്ത്രങ്ങൾ, കളിപ്പാട്ടങ്ങൾ) കൂട്ടി തെരഞ്ഞെടുക്കാറുണ്ട്.					
43.	കളിയിൽ തോറ്റാലും അത് കൂട്ടി അംഗീകരിക്കാറുണ്ട്.					
44.	കൂട്ടി സ്വന്തം സാധനങ്ങൾ തിരിച്ചറിയാറുണ്ട്.					
45.	ചെറിയ പ്രശ്നങ്ങൾ നേരിടാൻ കൂട്ടിക്ക് സാധിക്കാറുണ്ട്.					

ക്രമ നമ്പർ	പ്രസ്താവനകൾ	ഒരിക്കലുമില്ല	അപൂർവ്വമായി	ചിലപ്പോൾ	മിക്കപ്പോഴും	എല്ലായ്പ്പോഴും
Part E						
46.	മറ്റുള്ളവർ നൽകുന്ന നിർദ്ദേശങ്ങൾ കുട്ടി അനുസരിക്കാറുണ്ട്.					
47.	ക്ലാസിലെ മാനദണ്ഡങ്ങൾ മനസ്സിലാക്കി കുട്ടി പെരുമാറാറുണ്ട്.					
48.	കളിക്കുന്നതിനിടയിൽ മറ്റു കുട്ടികൾ നിയമം തെറ്റിച്ചാൽ അവരെ തിരുത്താറുണ്ട്.					
49.	കളിക്കുമ്പോൾ സ്വന്തം ഊഴത്തിനായി കുട്ടി കാത്തിരിക്കാറുണ്ട്.					
50.	സാഹചര്യത്തിന് അനുസരിച്ച് കുട്ടി പ്രതികരിക്കാറുണ്ട്.					
51.	കുട്ടി എല്ലാ സാധനങ്ങളും വൃത്തിയായി സൂക്ഷിക്കാറുണ്ട്.					
52.	ഇഷ്ടപ്പെടാത്ത സന്ദർഭങ്ങളിൽനിന്നും കുട്ടി മാറി നിൽക്കാറുണ്ട്.					
53.	ആവശ്യങ്ങൾ (കളിപ്പാട്ടങ്ങൾ വാങ്ങുവാൻ/പാർക്കിൽ പോകുവാൻ) സാധിക്കാൻ കുട്ടി കാത്തിരിക്കാറുണ്ട്.					
Part F						
54.	കുട്ടി ചോദ്യങ്ങൾ ചോദിക്കാറുണ്ട്.					
55.	ചോദിക്കുന്ന ചോദ്യത്തിന് കുട്ടി കൃത്യമായി മറുപടി തരാറുണ്ട്.					
56.	കുട്ടി നിറങ്ങൾ തിരിച്ചറിയാറുണ്ട്.					
57.	കുട്ടി അക്ഷരങ്ങൾ തിരിച്ചറിയാറുണ്ട്.					
58.	കുട്ടി ലിംഗവ്യത്യാസം തിരിച്ചറിയാറുണ്ട്.					
59.	ശരീരഭാഗങ്ങൾ ഏതൊക്കെയെന്നു പറയാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
60.	കുട്ടി ചിത്രങ്ങൾ തിരിച്ചറിയാറുണ്ട്.					
61.	ഒരേ നിറത്തിലുള്ള സാധനങ്ങൾ തരംതരിക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
62.	ഒരേ ആകൃതിയിലുള്ള സാധനങ്ങൾ തരംതിരിക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
63.	വലുതും ചെറുതുമായ വസ്തുക്കൾ തരംതിരിക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					

ക്ര മ നമ്പർ	പ്രസ്താവനകൾ	ഒരിക്കലുമില്ല	അപൂർവ്വമായി	ചിലപ്പോൾ	മിക്കപ്പോഴും	എപ്പോഴും
64.	കഴിഞ്ഞുപോയ സംഭവങ്ങൾ ഓർത്തെടുത്ത് പറയാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
65.	നിർദ്ദേശങ്ങൾ നൽകുമ്പോൾ കുട്ടി ശ്രദ്ധിച്ചിരിക്കാറുണ്ട്.					
66.	സമയത്തെകുറിച്ച് കുട്ടിക്ക് ധാരണയുണ്ട് (ഭക്ഷണം കഴിക്കുന്ന സമയം, മാതാപിതാക്കൾ ജോലിയിൽ നിന്നു വരുന്ന സമയം).					
Part G						
67.	മറ്റുള്ളവർ പറയുന്ന കാര്യങ്ങൾ മനസ്സിലാക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
68.	വീട്ടിലെ അംഗങ്ങളുടെ പേര് പറയാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
69.	പരിചയമുള്ള വസ്തുക്കളുടെ പേര് പറയാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
70.	കുട്ടി കഥകൾ പറയാറുണ്ട്.					
71.	കുട്ടി പാട്ടുകൾ പാടാറുണ്ട്.					
72.	കുട്ടി സംസാരിക്കുന്നത് അപരിചിതരായ ആളുകൾക്ക് വരെ മനസ്സിലാക്കാൻ സാധിക്കുന്നുണ്ട്.					
73.	നാലോ അതിലധികമോ വാക്കുകൾ ഉപയോഗിച്ച് വാചകങ്ങൾ ഉണ്ടാക്കാൻ കുട്ടിക്ക് സാധിക്കുന്നുണ്ട്.					
74.	ചുറ്റുപാടുള്ള ശബ്ദങ്ങൾ കുട്ടി ശ്രദ്ധിക്കാറുണ്ട്.					
75.	കുട്ടിക്ക് ക്ലാസിൽ 10 മിനിറ്റ് വരെ ശ്രദ്ധിച്ചിരിക്കാൻ സാധിക്കുന്നുണ്ട്.					

Exploration of Mental Health among Pre-primary Students

Appendix G2

DEPARTMENT OF EDUCATION
UNIVERSITY OF CALICUT

MENTAL HEALTH SCALE FOR PRE-PRIMARY STUDENTS

Dr. Vasumathi T.
Assistant Professor

Reshma P.M.
Research Scholar

Instructions

These statements are intended to assess the mental health of pre-primary students. The teacher who has known the child closely for at least three months should respond to these statements. Read the statements carefully and mark the most appropriate responses. For each statement, five responses, namely 'Never', 'Rarely', 'Sometimes', 'Often' and 'Always' are given in the response sheet. Mark your response in the appropriate column with a tick (✓) mark. Your responses will be kept strictly confidential and used for research purposes only.

Sl. No	Statements	Never	Rarely	Sometimes	Often	Always
	Part A					
1	The child can place one foot on each step and go up and down the stairs.					
2	The child can catch a big ball.					
3	The child can sit and use the swing.					
4	The child can walk through the narrow surface without falling.					
5	The child can jump a certain distance.					
6	The child can draw a circle.					
7	The child can hold the brush/pen/pencil properly and draw.					
8	The child urinates inside the classroom.					
9	The child complains about stomach-ache, headache, or other pains.					
10	The child has been showing changes in eating habits recently (overeating/lack of appetite).					

Sl. No	Statements	Never	Rarely	Sometimes	Often	Always
Part B						
11	The child can understand when friends are sad.					
12	When others are angry, the child understands and acts accordingly.					
13	The child recognises the emotional states (happy/sad) of others (friends/parents/teachers).					
14	When the child is sad, it is evident on the child's face.					
15	When the child needs to be away from his or her parents, he or she does this.					
16	Even if the friend unintentionally hits the child with their hand, the child understands and continues playing.					
17	The child is happy and cheerful.					
Part C						
18	The child quickly mingles with other children.					
19	The child interacts with adults easily.					
20	The child shows attachment to the teacher.					
21	The child actively participates in the group.					
22	The child is busy with some activities.					
23	The child communicates well with other children and adults.					
24	The child shares his/her experience with teacher.					
25	The child helps other children while playing.					
26	The child shares beloved toys with friends.					
27	The child shares food with others.					
28	The child likes playing.					
29	When the child taken in public places, they behave accordingly.					
30	The child takes leadership of the group while playing.					

Sl. No	Statements	Never	Rarely	Sometimes	Often	Always
Part D						
31	The child uses the toilet by her/himself.					
32	The child eats independently.					
33	The child puts on footwear by her/himself.					
34	The child washes hands by her/himself.					
35	The child asks for what he/she want (water, food, toys etc).					
36	If the child falls, he/she tries to get up on his/her own.					
37	The child shows love to everyone.					
38	The child help others.					
39	If friends fall while playing, he/she shows concern.					
40	The child does anything with confidence.					
41	The child has the ability to express his/her own opinion.					
42	The child chooses things (books/clothes/ toys) on his/her own.					
43	Even if the child loses the game, it will be accepted.					
44	The child recognizes his/her own things.					
45	Small problems can be faced by the child.					
Part E						
46	The child follows instructions given by others.					
47	The child behaves according to the norms of the class.					
48	If other children break the rules, they are corrected.					
49	While playing, the child waits for his/her turn.					
50	The child reacts according to the situation.					
51	The child keeps everything clean.					
52	The child stays away from situations he/she doesn't like.					
53	The child waits for the needs (purchase toys/go to the park) to be met.					

Sl. No	Statements	Never	Rarely	Sometimes	Often	Always
Part F: Cognitive Functioning						
54	The child keeps asking questions.					
55	The child answers the question.					
56	The child can identify colours.					
57	The child recognizes letters.					
58	The child recognizes gender differences.					
59	The child can tell the body parts.					
60	The child recognises pictures.					
61	The child can identify objects of the same colour.					
62	The child can sort objects of the same shape.					
63	The child can classify the large and small objects.					
64	The child is able to recall past events.					
65	The child pays attention when giving instructions.					
66	The child has the time concept (meal time/ time of parents come back from their work).					
Part G: Language skills						
67	The child can understand what others are saying.					
68	The child is able to name the members of the house.					
69	The child can name familiar objects.					
70	The child can tell stories.					
71	The child can sing.					
72	Even strangers can understand what the child is talking about.					
73	The child can make sentences using four or more words.					
74	The child listens to the surrounding sounds.					
75	The child can pay attention in class for up to 10 minutes.					