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FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF PSYCHOLOGY

BEHAVIOUR IN ADOLESCENTS

**A Comprehensive Study of Psychological, Social and
Environmental Factors Affecting Adolescent Behaviour**

Thesis

Submitted in Partial Fulfilment of the Requirements

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for the Degree of of Psychology

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DECLARATION

I hereby declare that this thesis entitled "Behaviour in Adolescents: A Comprehensive Study of Psychological, Social and Environmental Factors Affecting Adolescent Behaviour" has been prepared independently by me in partial fulfilment of the requirements for the degree of Bachelor of Psychology at the University of Northwest.

All sources of information used in the preparation of this thesis have been appropriately acknowledged. This study has not previously been submitted, in whole or in part, for any degree at this or any other university.

I further declare that this thesis complies with accepted standards of academic integrity and ethical conduct.

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ABSTRACT

Adolescence is widely recognised as one of the most critical developmental periods in human life. It represents a transitional stage between childhood and adulthood characterised by remarkable biological, psychological, cognitive, emotional, and social changes. During this period, young individuals experience rapid physical growth, significant neurological development, emotional fluctuations, increasing independence, and the formation of personal identity. These developmental processes inevitably influence behavioural patterns and shape future psychological adjustment.

The present study aims to investigate adolescent behaviour from a comprehensive psychological perspective by examining the interaction between biological maturation, cognitive development, emotional regulation, family relationships, peer influence, educational experiences, and environmental conditions. Rather than viewing adolescent behaviour as the result of a single cause, this research adopts a multidimensional approach that considers the dynamic interaction between internal developmental processes and external social influences.

The theoretical framework of this thesis is based on major developmental theories proposed by Sigmund Freud, Erik Erikson, Jean Piaget, Albert Bandura, Lawrence Kohlberg, John Bowlby, and Urie Bronfenbrenner. These theories collectively provide an integrated understanding of behavioural development throughout adolescence.

The research further evaluates the influence of family communication, parenting styles, peer relationships, school climate, self-esteem, identity formation, emotional intelligence, and cultural values on adolescent behaviour. Contemporary findings indicate that supportive family environments and positive peer interactions contribute significantly to healthy

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behavioural development, whereas chronic family conflict, inadequate supervision, social exclusion, and negative peer pressure increase behavioural risks.

This thesis employs a quantitative research methodology using questionnaire-based data collection and statistical analysis to evaluate behavioural tendencies among adolescents. The findings demonstrate that adolescent behaviour results from the interaction of biological, psychological, social, and environmental factors rather than any single determinant.

The study concludes that effective psychological support, family involvement, educational guidance, and community-based interventions play essential roles in promoting positive adolescent development. The findings are expected to contribute to psychologists, educators, counsellors, parents, and researchers interested in adolescent mental health and behavioural sciences.

Keywords:

Adolescence, Behaviour, Developmental Psychology, Social Psychology, Family, Peer Influence, Identity, Self-Esteem, Emotional Development, Cognitive Development.



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TABLE OF CONTENTS

Declaration

Acknowledgements

Abstract

Chapter 1

Introduction

1.1 Background of the Study

1.2 Statement of the Problem

1.3 Purpose of the Study

1.4 Research Objectives

1.5 Research Questions

1.6 Research Hypotheses

1.7 Significance of the Study

1.8 Scope of the Study

1.9 Limitations

1.10 Definition of Terms

Chapter 2

Literature Review

2.1 Adolescence as a Developmental Stage

2.2 Biological Development

2.3 Brain Development

2.4 Cognitive Development

Gökben Gönültaş, 2014, Turkey



UNIVERSITY OF NORTHWEST

2.5 Emotional Development

2.6 Social Development

2.7 Family Relationships

2.8 Peer Influence

2.9 Identity Development

2.10 Self-Esteem

2.11 Risk Behaviours

2.12 Mental Health

2.13 Psychological Theories

Chapter 3

Research Methodology

Chapter 4

Results

Chapter 5

Discussion

Chapter 6

Conclusions and Recommendations

References

Appendices



UNIVERSITY OF NORTHWEST

Preference

Adolescence is one of the most dynamic and influential stages of human development. It represents the transition from childhood to adulthood and is characterised by profound biological, psychological, cognitive, emotional, and social changes. During this developmental period, individuals experience rapid physical growth, hormonal changes, neurological maturation, increasing independence, and the gradual formation of personal identity. These changes influence almost every aspect of an adolescent's life, including behaviour, decision-making, emotional regulation, interpersonal relationships, academic performance, and future social adjustment.

The World Health Organization generally defines adolescence as the period between the ages of 10 and 19 years. Although the exact beginning and ending of adolescence may vary across cultures and individuals, researchers generally agree that it is a unique developmental stage requiring special psychological attention. The behavioural patterns established during adolescence often continue into adulthood and therefore have long-term consequences for mental health, occupational success, interpersonal relationships, and overall quality of life.

Behaviour refers to all observable actions, reactions, and responses displayed by individuals in interaction with their internal thoughts and the external environment. Adolescent behaviour is influenced by multiple interacting variables rather than a single cause. Biological maturation, cognitive development, emotional regulation, parenting styles, peer relationships, educational experiences, cultural expectations, and socioeconomic conditions collectively shape behavioural outcomes during this period.

Historically, adolescence has been viewed differently by various psychological theories. Psychoanalytic theorists emphasised unconscious conflicts arising from biological maturation. Cognitive psychologists focused on the development of abstract thinking and reasoning abilities. Social learning theorists highlighted the importance of observation, modelling, and environmental reinforcement, while ecological approaches stressed the interaction between adolescents and their multiple social environments. Contemporary developmental psychology integrates these perspectives and recognises adolescence as a multidimensional process influenced by both hereditary and environmental factors.

One of the most remarkable characteristics of adolescence is the rapid development of identity. Young people gradually begin to question who they are, what they believe, and what

Gökben Gönültaş, 2014, Turkey



UNIVERSITY OF NORTHWEST

role they wish to play within society. Identity formation involves continuous exploration of personal values, career aspirations, social relationships, religious beliefs, and moral principles. Successful identity development contributes to psychological well-being, whereas identity confusion may increase emotional distress and behavioural difficulties.

Family remains one of the most influential social institutions throughout adolescence. Although adolescents strive for greater autonomy, parental guidance, emotional warmth, communication, and consistent discipline continue to influence behavioural adjustment significantly. Numerous studies have demonstrated that supportive parenting practices are associated with higher self-esteem, stronger emotional regulation, better academic performance, and fewer behavioural problems. Conversely, family conflict, neglect, inconsistent parenting, and poor communication frequently contribute to aggression, anxiety, depression, delinquency, and substance abuse.

Peer relationships become increasingly important during adolescence. Friends provide emotional support, opportunities for social learning, identity exploration, and acceptance within social groups. Positive peer relationships encourage cooperation, empathy, and psychological resilience. However, peer pressure may also encourage risky behaviours, including substance use, school absenteeism, violence, and other forms of antisocial behaviour. The influence of peers therefore represents both a protective and a risk factor depending upon the characteristics of the peer group.

Educational institutions also play an essential role in adolescent behavioural development. Schools provide structured environments where adolescents learn academic knowledge together with social responsibility, cooperation, leadership, conflict resolution, and emotional self-control. Teachers often become important adult role models outside the family. Positive school climates characterised by respect, fairness, inclusion, and academic encouragement contribute significantly to healthy behavioural development.

Recent advances in neuroscience have substantially improved our understanding of adolescent behaviour. Neuroimaging research indicates that the adolescent brain continues developing well into early adulthood. Regions responsible for planning, impulse control, decision-making, and emotional regulation mature gradually over time. In contrast, brain systems associated with reward sensitivity develop earlier, partially explaining why adolescents often demonstrate increased sensation seeking, emotional intensity, and risk-taking behaviours. These neurological findings provide biological explanations for behavioural characteristics that were previously interpreted solely through psychological or social perspectives.

Technological developments have also transformed adolescent behaviour during the past two decades. Social media platforms, mobile communication technologies, online gaming, and digital learning environments have become integral components of adolescent life. While technology provides educational opportunities, social connectedness, and access to information, excessive digital engagement may also contribute to cyberbullying, sleep disturbances, social comparison, reduced face-to-face communication, and psychological



UNIVERSITY OF NORTHWEST

distress. Consequently, modern behavioural research increasingly examines the interaction between digital environments and adolescent mental health.

Because adolescence involves simultaneous biological, cognitive, emotional, and social transitions, understanding behavioural development requires an interdisciplinary perspective. Psychologists, educators, counsellors, physicians, social workers, and policy makers all contribute to promoting healthy adolescent development through evidence-based interventions. Research on adolescent behaviour therefore remains essential for improving educational systems, family support programmes, mental health services, and community development initiatives.

The present study adopts this multidimensional perspective and aims to examine the major psychological, social, and environmental determinants of adolescent behaviour. By integrating classical developmental theories with contemporary behavioural research, the study seeks to provide a comprehensive understanding of behavioural development during adolescence and to identify practical implications for professionals working with young people.



UNIVERSITY OF NORTHWEST

CHAPTER 1

INTRODUCTION

1.2 Statement of the Problem

Adolescence is universally recognised as one of the most challenging periods of human development. Although it is a natural stage of growth, it is also characterised by numerous biological, psychological, emotional, cognitive, and social changes that may influence behavioural adjustment. During adolescence, individuals are expected to establish personal identity, develop independence, build interpersonal relationships, adapt to educational expectations, and prepare for adult responsibilities. Successfully managing these developmental tasks requires considerable psychological adaptation.

However, not all adolescents experience this developmental transition equally. While many adolescents successfully adapt to developmental changes and demonstrate healthy behavioural adjustment, others experience significant behavioural difficulties. These behavioural problems may include aggression, delinquency, substance abuse, school absenteeism, academic failure, emotional instability, anxiety, depression, social withdrawal, risk-taking behaviours, internet addiction, cyberbullying, and other maladaptive patterns that negatively affect both the individual and society.

Behavioural difficulties during adolescence rarely emerge from a single cause. Instead, they are generally the result of complex interactions among biological maturation, family relationships, peer influence, school environment, cultural expectations, socioeconomic conditions, personality characteristics, and individual coping abilities. Consequently, identifying the relative contribution of these factors has become one of the major objectives of developmental psychology.

Families often struggle to understand behavioural changes occurring during adolescence. Parents frequently interpret increased independence, emotional fluctuations, and occasional conflicts as signs of disobedience rather than normal developmental processes. Similarly,

Gökben Gönültaş, 2014, Turkey



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teachers may misunderstand behavioural changes that are associated with cognitive and emotional development. Without adequate knowledge, adults may respond in ways that unintentionally intensify behavioural problems.

Modern society has introduced additional challenges for adolescents. Social media, online communication, rapidly changing cultural values, increasing academic competition, economic uncertainty, and exposure to global information have created developmental environments that differ substantially from those experienced by previous generations. These environmental changes require researchers to continuously re-evaluate the factors influencing adolescent behaviour.

Although numerous studies have investigated adolescent behaviour, inconsistencies remain regarding the relative influence of biological, psychological, social, and environmental variables. Some researchers emphasise genetic and neurological maturation, whereas others consider family functioning or peer relationships to be the dominant influences. Consequently, further comprehensive research is necessary to integrate these perspectives into a unified understanding of adolescent behaviour.

The present study therefore seeks to investigate the multiple determinants of adolescent behaviour by examining the interaction between developmental psychology, family dynamics, educational experiences, peer relationships, emotional development, and environmental influences. Understanding these relationships may contribute to more effective psychological interventions, educational programmes, family counselling services, and public policies promoting healthy adolescent development.

1.3 Purpose of the Study

The primary purpose of this study is to examine the psychological, biological, cognitive, emotional, social, and environmental factors influencing adolescent behaviour. Rather than focusing on isolated behavioural characteristics, this research aims to investigate adolescent behaviour from a holistic developmental perspective.

A further objective is to explain how behavioural patterns develop throughout adolescence and how these behaviours are influenced by interactions among family members, peers, schools, and the wider social environment. Understanding these relationships may contribute to more effective psychological assessment, prevention strategies, and intervention programmes designed to support adolescents during this critical developmental period.

The study also aims to integrate classical developmental theories with contemporary empirical findings. Although theories proposed by Freud, Erikson, Piaget, Bandura, Kohlberg, Bowlby, and Bronfenbrenner were developed from different theoretical perspectives, each contributes valuable insights into understanding adolescent behaviour. By combining these approaches, the present research seeks to provide a comprehensive theoretical framework for interpreting behavioural development.

Gökben Gönültaş, 2014, Turkey



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Another important purpose of the study is to identify protective factors that promote positive behavioural outcomes. Family support, effective communication, emotional intelligence, resilience, academic engagement, positive peer relationships, and healthy self-esteem may reduce behavioural risks and contribute to successful adaptation during adolescence. Identifying these protective factors may assist psychologists, educators, counsellors, and parents in developing evidence-based support programmes.

Finally, this research aims to provide practical recommendations for educational institutions, mental health professionals, families, and policy makers regarding strategies for promoting healthy behavioural development among adolescents.

1.4 Research Objectives

The objectives of the present study are as follows:

- To examine the psychological characteristics associated with adolescent behaviour.
- To investigate the influence of biological maturation on behavioural development.
- To evaluate the relationship between cognitive development and behavioural adjustment.
- To determine the effects of emotional development on adolescent behaviour.
- To analyse the influence of family communication and parenting styles.
- To investigate the role of peer relationships in behavioural development.
- To examine the effects of school climate and educational experiences.
- To evaluate the contribution of self-esteem to behavioural adjustment.
- To investigate identity development during adolescence.
- To determine factors associated with behavioural problems among adolescents.
- To identify protective factors promoting healthy psychological development.
- To provide recommendations for improving adolescent mental health and behavioural outcomes.

1.5 Research Questions

The present study attempts to answer the following research questions:

1. What psychological factors influence adolescent behaviour?

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UNIVERSITY OF NORTHWEST

2. How does biological maturation contribute to behavioural development?
3. What role does cognitive development play in behavioural adjustment?
4. How does emotional development influence adolescent behaviour?
5. To what extent do parenting styles affect behavioural outcomes?
6. What influence do peer relationships have on adolescent behaviour?
7. How does the school environment contribute to behavioural development?
8. What relationship exists between self-esteem and adolescent behaviour?
9. How does identity formation influence behavioural adjustment?
10. Which protective factors promote healthy behavioural development during adolescence?

1.6 Research Hypotheses

The following hypotheses were developed for empirical investigation:

- H1: Positive family relationships significantly improve adolescent behavioural adjustment.
- H2: Higher levels of self-esteem are associated with more positive behavioural outcomes.
- H3: Positive peer relationships contribute significantly to healthy behavioural development.
- H4: Supportive educational environments reduce behavioural problems among adolescents.
- H5: Emotional intelligence positively predicts adaptive behavioural patterns.
- H6: Identity development is positively associated with psychological adjustment.
- H7: Family conflict significantly increases behavioural problems during adolescence.
- H8: Negative peer influence significantly predicts risk-taking behaviours.
- H9: Academic engagement positively influences behavioural development.
- H10: Behavioural development is best explained through the interaction of biological, psychological, and environmental factors rather than any single variable.

1.7 Significance of the Study

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The significance of this study extends beyond theoretical psychology. Adolescents represent the future social, economic, cultural, and intellectual resources of every society. Promoting healthy behavioural development therefore contributes not only to individual well-being but also to long-term social stability and public health.

For psychologists, the findings provide a more comprehensive understanding of behavioural development and support evidence-based assessment and intervention strategies.

For educators, the study offers insights into classroom management, student motivation, emotional support, and behavioural guidance.

For parents, the findings may improve communication, strengthen family relationships, and encourage parenting practices that promote healthy psychological development.

For counsellors and mental health professionals, the research contributes practical knowledge for identifying behavioural risk factors, designing preventive interventions, and promoting resilience among adolescents.

Finally, policy makers may utilise the findings when developing educational policies, youth programmes, mental health services, and community interventions aimed at improving adolescent well-being.

1.8 Scope of the Study

The present study focuses on adolescent behaviour from a developmental psychological perspective. It examines the interaction among biological, cognitive, emotional, social, educational, and environmental factors that influence behavioural development during adolescence. Rather than concentrating on a single behavioural problem, this research adopts a comprehensive approach in order to understand how multiple developmental processes contribute to behavioural adjustment.

The population considered in this study consists of adolescents between the ages of approximately 13 and 19 years. This age range represents middle and late adolescence, during which individuals experience significant developmental changes affecting personality, emotional regulation, interpersonal relationships, academic performance, and social adaptation.

The study investigates several major variables that have consistently been identified within developmental psychology literature. These variables include family relationships, parenting styles, peer influence, self-esteem, emotional intelligence, identity formation, school climate, cognitive development, emotional maturity, and environmental influences. Biological maturation is also examined as one of the fundamental developmental processes contributing to behavioural change during adolescence.

In addition to examining behavioural development, the study evaluates both positive and negative behavioural outcomes. Positive behaviours include emotional regulation, academic

Gökben Gönültaş, 2014, Turkey



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responsibility, empathy, social cooperation, resilience, healthy interpersonal relationships, and adaptive coping strategies. Negative behavioural outcomes include aggression, delinquency, substance abuse, school absenteeism, emotional instability, anxiety, depression, bullying, cyberbullying, impulsivity, and other maladaptive behaviours frequently reported during adolescence.

The research also reviews major psychological theories explaining adolescent behaviour. These include Psychoanalytic Theory, Psychosocial Development Theory, Cognitive Development Theory, Social Learning Theory, Moral Development Theory, Ecological Systems Theory, and Attachment Theory. The integration of these theoretical perspectives allows adolescent behaviour to be interpreted from multiple scientific viewpoints.

Although the study acknowledges biological influences such as hormonal changes and neurological development, its primary emphasis remains psychological and social determinants of behaviour. Medical diagnosis and psychiatric treatment procedures are therefore beyond the scope of this research.

Finally, the study aims to provide recommendations applicable to educational institutions, psychologists, counsellors, parents, and professionals working with adolescents. Consequently, both theoretical knowledge and practical implications are incorporated throughout the thesis.

1.9 Limitations of the Study

Every scientific investigation has certain limitations that should be considered when interpreting the findings. The present study is no exception.

First, adolescent behaviour is an extremely complex phenomenon influenced by numerous biological, psychological, social, cultural, and environmental variables. It is impossible for a single study to investigate every potential determinant simultaneously. Consequently, this research focuses on those variables most consistently supported by previous psychological literature.

Second, behavioural development may vary considerably across cultures, socioeconomic conditions, educational systems, and family structures. Therefore, although many developmental principles are universal, some findings may not be equally applicable to every cultural context.

Third, behavioural characteristics may change rapidly throughout adolescence. Individuals who display behavioural difficulties during early adolescence may demonstrate substantial psychological adjustment during later developmental stages. Behaviour should therefore be viewed as dynamic rather than static.

Fourth, self-report questionnaires may introduce response bias. Some adolescents may provide socially desirable responses rather than completely accurate descriptions of their behaviour, emotions, or interpersonal relationships. Although confidentiality encourages



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honest participation, response bias remains an unavoidable limitation within behavioural research.

Fifth, numerous behavioural variables interact simultaneously. Family relationships influence self-esteem, peer relationships affect emotional well-being, school experiences contribute to identity formation, and personality characteristics moderate responses to environmental stress. These interactions complicate attempts to identify direct cause-and-effect relationships.

Finally, rapid technological developments continuously influence adolescent behaviour. Social media, mobile communication, online education, and digital communities continue to evolve. Consequently, behavioural patterns observed today may differ from those observed in future generations.

Despite these limitations, the study provides a comprehensive overview of adolescent behavioural development by integrating biological, psychological, cognitive, emotional, and social perspectives.

1.10 Definition of Terms

Adolescence

Adolescence refers to the developmental period between childhood and adulthood during which individuals experience rapid physical, cognitive, emotional, and social development. The World Health Organization generally identifies adolescence as occurring between the ages of 10 and 19 years.

Behaviour

Behaviour refers to all observable actions, reactions, responses, and patterns of interaction displayed by individuals in response to internal psychological processes and external environmental conditions.

Developmental Psychology

Developmental psychology is the scientific study of human growth and psychological change throughout the lifespan. It examines biological, cognitive, emotional, and social development from infancy through old age.

Self-Esteem

Self-esteem refers to an individual's overall evaluation of personal worth, competence, and value. Healthy self-esteem contributes positively to psychological adjustment and behavioural functioning.

Identity

Gökben Gönültaş, 2014, Turkey



UNIVERSITY OF NORTHWEST

Identity represents an individual's integrated perception of personal characteristics, beliefs, goals, values, and social roles. Identity formation constitutes one of the central developmental tasks of adolescence.

Emotional Intelligence

Emotional intelligence refers to the ability to recognise, understand, regulate, and effectively express emotions while responding appropriately to the emotions of others.

Peer Influence

Peer influence describes the impact that friends and social groups exert on an individual's attitudes, beliefs, decisions, values, and behavioural patterns.

Parenting Style

Parenting style refers to the characteristic methods parents use to guide, discipline, communicate with, and emotionally support their children.

Resilience

Resilience is the capacity to adapt successfully to adversity, stress, trauma, or significant life challenges while maintaining healthy psychological functioning.

Risk Behaviour

Risk behaviour refers to actions that increase the probability of negative physical, psychological, educational, or social outcomes. Examples include substance abuse, reckless driving, violence, delinquency, unsafe sexual behaviour, and persistent school absenteeism.

Protective Factors

Protective factors are personal, familial, educational, and environmental characteristics that reduce behavioural risks and promote healthy psychological development.

Psychological Adjustment

Psychological adjustment refers to an individual's ability to maintain emotional stability, establish healthy interpersonal relationships, cope effectively with stress, and function successfully within society.

Behavioural Development



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Behavioural development is the continuous process through which behavioural patterns emerge, change, and mature as individuals interact with biological, psychological, social, and environmental influences throughout life.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction to the Literature Review

Adolescent behaviour has attracted considerable attention from psychologists, educators, physicians, sociologists, and researchers for more than a century. The transition from childhood to adulthood involves one of the most rapid and complex periods of human development. During this stage, individuals experience dramatic biological maturation, cognitive growth, emotional transformation, social restructuring, and increasing independence. Because these developmental processes occur simultaneously, adolescent behaviour reflects the interaction of numerous internal and external influences rather than the effect of a single variable.

Understanding adolescent behaviour requires an interdisciplinary perspective. Developmental psychologists investigate age-related changes in cognition, personality, emotion, and social functioning. Clinical psychologists examine behavioural disorders, emotional disturbances, and mental health problems emerging during adolescence. Educational psychologists focus on learning, academic motivation, classroom behaviour, and school adjustment. Social psychologists investigate peer relationships, group dynamics, identity development, and social influence, while neuroscientists study structural and functional brain development associated with behavioural maturation.

Historically, adolescence was not always recognised as a distinct developmental stage. In many traditional societies, children assumed adult responsibilities immediately following physical maturation. During the late nineteenth and early twentieth centuries, however, industrialisation, compulsory education, and changing social structures prolonged the transition from childhood to adulthood. As a result, adolescence gradually became recognised as an independent developmental period requiring specialised scientific investigation.

One of the earliest systematic examinations of adolescence was conducted by G. Stanley Hall, who described adolescence as a period characterised by "storm and stress." Hall argued that rapid biological changes produced emotional instability, behavioural conflict, and psychological turbulence. Although contemporary research suggests that most adolescents successfully navigate developmental challenges, Hall's work established adolescence as an important field of scientific inquiry and stimulated subsequent developmental research.

Gökben Gönültaş, 2014, Turkey



UNIVERSITY OF NORTHWEST

Contemporary developmental psychology recognises that adolescence cannot be understood solely through biological maturation. Behaviour emerges through continuous interaction among genetic predispositions, neurological development, family relationships, educational experiences, peer interactions, cultural expectations, economic conditions, and individual psychological characteristics. Consequently, modern theoretical models increasingly adopt biopsychosocial perspectives integrating multiple levels of analysis.

The following sections review the principal theories and empirical findings concerning adolescent behaviour, providing the theoretical foundation for the present research.

2.2 Understanding Adolescence as a Developmental Stage

Adolescence is generally regarded as one of the most important transitional periods within the human lifespan. It represents the bridge between childhood and adulthood and involves a series of interconnected biological, psychological, cognitive, emotional, and social transformations. Unlike childhood, during which parents largely determine behavioural expectations, adolescence is characterised by increasing autonomy, personal responsibility, and independent decision-making. Consequently, behavioural patterns become more complex and are influenced by a wider range of developmental factors.

Developmental psychologists generally divide adolescence into three overlapping stages: early adolescence (approximately 10–13 years), middle adolescence (14–16 years), and late adolescence (17–19 years). Although these age boundaries vary among researchers and cultures, they provide a useful framework for understanding developmental changes.

Early adolescence is primarily characterised by biological maturation. Puberty initiates rapid physical growth, hormonal changes, sexual maturation, and increasing awareness of body image. During this period adolescents often become highly sensitive to the opinions of others and begin comparing themselves with peers. Emotional reactions may become more intense, and conflicts with parents frequently increase as independence gradually develops.

Middle adolescence is characterised by expanding social relationships, greater concern regarding peer acceptance, increasing experimentation with personal identity, and more sophisticated cognitive abilities. Adolescents begin questioning family values, cultural traditions, educational expectations, and future occupational goals. Friendships become increasingly influential, while romantic relationships often emerge as an important component of psychological development.

Late adolescence involves gradual psychological stabilisation. Individuals become increasingly capable of long-term planning, emotional regulation, independent decision-making, and responsible behaviour. Identity formation becomes more consolidated, and educational or occupational goals become more clearly defined. Although developmental growth continues beyond adolescence, many behavioural patterns established during this stage remain relatively stable throughout adulthood.



UNIVERSITY OF NORTHWEST

Researchers consistently emphasise that adolescence should not be viewed as a period of inevitable behavioural disturbance. Although emotional fluctuations and occasional conflict are common, the majority of adolescents successfully negotiate developmental challenges and become psychologically healthy adults. Behavioural difficulties generally emerge when multiple developmental risk factors accumulate without adequate protective support.

2.3 Biological Development During Adolescence

Biological maturation forms the foundation upon which psychological and behavioural development occurs. Puberty initiates a series of hormonal, neurological, and physical changes that influence emotions, cognition, motivation, and behaviour.

The endocrine system undergoes dramatic activation during puberty. Increased secretion of sex hormones, including testosterone and estrogen, contributes not only to physical maturation but also to emotional intensity, sensation seeking, and behavioural experimentation. These hormonal changes do not directly determine behaviour; rather, they interact with personality characteristics and environmental influences to shape behavioural outcomes.

Physical growth during adolescence is rapid. Height, body weight, muscle development, body composition, and sexual characteristics change substantially over a relatively short period. These physical changes often influence self-esteem and social confidence. Adolescents who mature earlier or later than their peers may experience unique psychological challenges related to body image and peer acceptance.

Brain development represents one of the most significant biological processes during adolescence. Contemporary neuroscience demonstrates that structural and functional brain maturation continues well beyond puberty. The prefrontal cortex, responsible for executive functioning, planning, judgement, impulse control, and decision-making, develops gradually throughout adolescence and into early adulthood.

In contrast, limbic brain regions associated with emotion, reward processing, novelty seeking, and motivation mature earlier than executive control systems. This developmental imbalance partially explains why adolescents frequently demonstrate increased emotional intensity, impulsivity, sensation seeking, and risk-taking despite possessing considerable intellectual ability.

Synaptic pruning and myelination also contribute significantly to adolescent neurological development. Synaptic pruning eliminates unnecessary neural connections while strengthening frequently used pathways, thereby increasing neurological efficiency. Myelination accelerates neural transmission and improves communication between different brain regions. Together these processes enhance attention, learning, memory, problem solving, and behavioural regulation.

Although biological maturation creates developmental opportunities, it does not independently determine behavioural outcomes. Environmental influences, family

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relationships, educational experiences, and social learning continue to shape behavioural expression throughout adolescence.

2.4 Cognitive Development

Jean Piaget described adolescence as the period during which individuals enter the stage of formal operational thinking. This developmental achievement allows adolescents to think abstractly, reason hypothetically, evaluate multiple perspectives, and solve increasingly complex problems.

Formal operational thought differs substantially from the concrete thinking characteristic of childhood. Younger children generally solve problems using directly observable information, whereas adolescents become capable of imagining hypothetical situations, evaluating future possibilities, and constructing logical arguments independent of immediate experience.

The development of abstract reasoning contributes significantly to behavioural change. Adolescents begin questioning authority, analysing moral principles, evaluating political systems, considering philosophical questions, and reflecting upon personal beliefs. They increasingly recognise that social issues often involve multiple perspectives rather than simple right-or-wrong answers.

Metacognition also develops rapidly during adolescence. Metacognition refers to the ability to think about one's own thinking processes. Adolescents become increasingly aware of their strengths, weaknesses, learning strategies, emotional reactions, and behavioural tendencies. This self-awareness contributes to improved self-regulation but may also increase self-consciousness and social anxiety.

Decision-making abilities continue improving throughout adolescence. Although adolescents often possess reasoning abilities comparable to adults under calm conditions, emotionally charged situations may reduce cognitive control. Peer presence, emotional arousal, fatigue, stress, and immediate rewards frequently influence adolescent judgement more strongly than adult decision-making.

Educational achievement during adolescence reflects cognitive development together with motivation, family support, teacher expectations, and learning opportunities. Schools therefore play an important role not only in academic development but also in behavioural adjustment, self-confidence, and future occupational success.

Researchers increasingly recognise that cognitive development interacts continuously with emotional and social development. Intellectual maturity alone cannot explain adolescent behaviour; rather, behaviour reflects the integration of reasoning, emotion, motivation, personality, and environmental influences.

2.5 Emotional Development



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Emotional development constitutes one of the defining characteristics of adolescence. Emotional experiences often become more intense, complex, and personally meaningful during this developmental stage. Adolescents experience increasing sensitivity to interpersonal relationships, social evaluation, personal achievement, and future aspirations.

Emotional regulation gradually improves throughout adolescence as neurological maturation progresses. Nevertheless, temporary emotional instability remains common because biological maturation frequently progresses more rapidly than executive control mechanisms. Consequently, adolescents may experience rapid fluctuations in mood, heightened emotional reactivity, frustration, embarrassment, excitement, and anxiety.

The ability to recognise, understand, and regulate emotions is commonly described as emotional intelligence. Emotional intelligence includes emotional awareness, empathy, self-control, motivation, and effective interpersonal communication. Higher emotional intelligence is consistently associated with better psychological adjustment, healthier relationships, improved academic performance, and fewer behavioural problems.

Self-awareness also develops substantially during adolescence. Individuals become increasingly conscious of their appearance, personal characteristics, strengths, weaknesses, and social reputation. Although this heightened self-awareness contributes to identity development, excessive concern regarding peer evaluation may increase emotional vulnerability.

Family support remains one of the strongest protective factors for emotional development. Adolescents who experience secure attachment, open communication, consistent guidance, and emotional acceptance generally demonstrate better emotional regulation than those experiencing chronic family conflict or emotional neglect.

Schools similarly contribute to emotional development by providing opportunities for achievement, cooperation, leadership, conflict resolution, and positive relationships with teachers and peers. Educational environments characterised by respect, fairness, inclusion, and emotional safety promote healthy behavioural development.

Contemporary research suggests that emotional development should not be considered separately from biological, cognitive, and social development. Rather, these developmental domains continuously interact throughout adolescence, jointly shaping behavioural adjustment and psychological well-being.

2.6 Social Development During Adolescence

Social development is one of the most significant aspects of adolescence and plays a crucial role in shaping behavioural patterns. As adolescents mature, their social world expands beyond the immediate family, and relationships with peers, teachers, mentors, and the wider community become increasingly influential. Social experiences during this developmental period contribute substantially to personality formation, emotional adjustment, self-concept, and behavioural regulation.

Gökben Gönültaş, 2014, Turkey



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During childhood, parents are generally the primary source of guidance, emotional security, and behavioural modelling. In adolescence, however, young people gradually seek greater independence and begin establishing their own social identities. This developmental transition involves learning to make independent decisions, assume personal responsibility, negotiate interpersonal relationships, and develop effective communication skills.

Social competence refers to the ability to establish and maintain positive interpersonal relationships while adapting successfully to changing social situations. Adolescents with strong social competence generally demonstrate empathy, cooperation, emotional regulation, conflict resolution skills, and effective communication. These abilities contribute to academic achievement, psychological well-being, and successful adaptation throughout adulthood.

Conversely, poor social competence may contribute to loneliness, peer rejection, social anxiety, aggressive behaviour, academic difficulties, and emotional distress. Adolescents who experience chronic social isolation frequently demonstrate lower self-esteem, reduced academic motivation, and increased vulnerability to anxiety and depression.

The development of empathy is another important aspect of social maturation. Empathy enables adolescents to recognise and understand the emotions, thoughts, and experiences of others. Individuals with higher empathy are generally more cooperative, less aggressive, and more capable of resolving interpersonal conflicts peacefully. Empathy also promotes prosocial behaviour such as helping, sharing, volunteering, and supporting others during times of emotional difficulty.

Communication skills continue developing rapidly during adolescence. Young people gradually become capable of expressing complex emotions, negotiating disagreements, understanding non-verbal communication, and adapting communication styles to different social contexts. Effective communication strengthens family relationships, friendships, academic success, and future occupational functioning.

Adolescents also become increasingly aware of social norms, cultural expectations, and societal values. They begin evaluating ethical principles, political beliefs, religious values, and cultural traditions while constructing their own systems of belief. This process contributes significantly to identity formation and behavioural development.

Modern technology has transformed adolescent social interaction. Social networking platforms, instant messaging, online gaming communities, and digital communication have expanded opportunities for interpersonal connection while simultaneously introducing new developmental challenges. Although technology facilitates communication across geographical boundaries, excessive digital engagement may reduce face-to-face interaction, increase social comparison, and contribute to emotional distress.

Consequently, healthy social development requires balancing digital communication with meaningful interpersonal relationships in real-life environments. Families and educational

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institutions play important roles in encouraging responsible technology use while promoting healthy social interaction.

2.7 Family Relationships and Parenting Styles

Among all environmental influences affecting adolescent behaviour, family relationships remain one of the strongest predictors of psychological adjustment. Families provide the earliest environment in which children learn behavioural expectations, emotional regulation, communication patterns, moral values, and coping strategies. Although adolescents seek increasing independence, parental influence continues throughout this developmental period.

Healthy family functioning is characterised by emotional warmth, open communication, mutual respect, consistent discipline, and supportive guidance. Adolescents raised within such environments generally demonstrate higher self-esteem, stronger emotional regulation, greater academic motivation, and fewer behavioural problems than adolescents experiencing chronic family conflict.

Parenting style has received extensive attention within developmental psychology. Diana Baumrind identified three major parenting styles, later expanded into four categories by additional researchers.

Authoritative parenting combines warmth with reasonable behavioural expectations. Parents provide emotional support while maintaining consistent rules and encouraging independence. Research consistently demonstrates that authoritative parenting is associated with the most favourable developmental outcomes. Adolescents raised by authoritative parents generally demonstrate higher academic achievement, stronger emotional adjustment, greater social competence, and healthier behavioural development.

Authoritarian parenting emphasises strict discipline, obedience, and parental authority while providing relatively limited emotional warmth. Adolescents raised within highly authoritarian families may demonstrate obedience during childhood but often experience lower self-esteem, increased anxiety, reduced autonomy, and greater interpersonal conflict during adolescence.

Permissive parenting involves considerable emotional warmth but relatively few behavioural expectations or consistent rules. Although adolescents may experience substantial personal freedom, inadequate behavioural guidance may contribute to impulsivity, poor self-regulation, academic difficulties, and behavioural inconsistency.

Neglectful parenting represents the least favourable developmental environment. Parents provide limited emotional support, inconsistent supervision, and minimal involvement in the adolescent's life. Numerous studies associate neglectful parenting with behavioural problems, substance abuse, school dropout, delinquency, depression, and increased psychological vulnerability.



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Family communication represents another critical determinant of adolescent behaviour. Open communication enables adolescents to express emotions, discuss personal concerns, seek advice, and resolve interpersonal conflicts constructively. Families characterised by mutual trust generally demonstrate stronger psychological adjustment than families in which communication is limited or conflictual.

Attachment theory further emphasises the importance of early emotional relationships. John Bowlby proposed that secure attachment established during childhood continues influencing emotional regulation and interpersonal relationships throughout adolescence and adulthood. Adolescents experiencing secure attachment generally display greater emotional stability, stronger resilience, healthier peer relationships, and improved behavioural adjustment.

Family conflict inevitably occurs during adolescence as young people seek increasing independence. However, occasional disagreements differ substantially from chronic family dysfunction. Constructive conflict resolution strengthens communication and mutual understanding, whereas persistent hostility, emotional neglect, domestic violence, parental substance abuse, or inconsistent discipline substantially increase behavioural risk.

Socioeconomic conditions also influence family functioning. Financial stress, unemployment, inadequate housing, parental mental health difficulties, and limited educational opportunities may increase family tension and indirectly affect adolescent behaviour. Nevertheless, research consistently demonstrates that emotional support, effective communication, and positive parenting practices remain protective factors regardless of socioeconomic status.

The literature therefore strongly supports the conclusion that family relationships constitute one of the most influential environmental determinants of adolescent behavioural development.

2.8 Peer Relationships and Social Influence

As adolescents become increasingly independent from their families, peer relationships assume greater psychological importance. Friendships provide emotional support, opportunities for identity exploration, social learning, acceptance, companionship, and personal growth. During adolescence, many young people spend more waking hours with peers than with parents, making peer influence an important determinant of behaviour.

Peer acceptance contributes significantly to psychological well-being. Adolescents who experience positive friendships generally demonstrate higher self-confidence, greater emotional stability, improved academic adjustment, and stronger interpersonal skills. Positive peer relationships provide opportunities for cooperation, empathy, leadership, conflict resolution, and mutual encouragement.

Peer rejection, in contrast, is associated with numerous psychological difficulties. Adolescents experiencing chronic rejection often report loneliness, anxiety, depression, reduced academic motivation, low self-esteem, and increased behavioural problems. Social



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exclusion may also increase vulnerability to negative peer groups offering acceptance through antisocial behaviour.

Peer pressure has traditionally been viewed as a negative influence; however, contemporary research recognises both positive and negative forms of peer influence. Positive peer pressure may encourage academic achievement, healthy lifestyles, volunteering, sports participation, and responsible decision-making. Negative peer pressure may encourage substance abuse, bullying, delinquency, reckless driving, unsafe sexual behaviour, and school misconduct.

Albert Bandura's Social Learning Theory provides an important explanation for peer influence. According to Bandura, adolescents learn behavioural patterns through observation, imitation, and reinforcement. Individuals are more likely to imitate behaviours displayed by peers they admire or identify with, particularly when those behaviours appear socially rewarded.

Friendship quality is often more important than friendship quantity. A small number of emotionally supportive friendships generally contributes more positively to psychological adjustment than numerous superficial relationships. High-quality friendships promote emotional security, trust, empathy, and resilience during stressful life experiences.

Adolescents also become increasingly involved in group identity. Membership within sports teams, academic clubs, religious organisations, artistic groups, volunteer programmes, or community organisations provides opportunities for leadership, responsibility, cooperation, and personal development. Participation in structured extracurricular activities consistently predicts healthier behavioural outcomes than social isolation or unstructured leisure activities.

Digital communication has introduced new dimensions of peer interaction. Online friendships may provide valuable emotional support and opportunities for social connection, particularly for adolescents experiencing geographical isolation or physical disabilities. However, digital environments also increase exposure to cyberbullying, social comparison, online harassment, misinformation, and unrealistic social expectations.

Cyberbullying has emerged as a significant psychological concern. Unlike traditional bullying, online harassment may occur continuously, reach large audiences, and remain permanently accessible. Victims frequently experience anxiety, depression, academic decline, sleep disturbances, social withdrawal, and reduced self-esteem. Consequently, schools and families increasingly recognise digital citizenship education as an essential component of adolescent development.

Overall, peer relationships represent one of the strongest social influences during adolescence. Their effects may either promote healthy psychological development or increase behavioural risk depending upon the quality of interpersonal relationships, individual resilience, family support, and broader social context.

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2.9 Identity Development During Adolescence

Identity development represents one of the central developmental tasks of adolescence and has received extensive attention within developmental psychology. As young people gradually move from childhood toward adulthood, they begin to ask fundamental questions concerning who they are, what they believe, what they value, and what kind of future they wish to create. Identity formation influences behaviour because individuals generally act in ways that are consistent with their developing self-concept.

Erik Erikson proposed that adolescence is characterised by the psychosocial crisis of Identity versus Role Confusion. According to Erikson, successful resolution of this developmental challenge enables adolescents to establish a coherent sense of self, whereas unsuccessful resolution may result in confusion regarding personal goals, beliefs, values, occupations, and interpersonal relationships.

Identity formation does not occur suddenly. Rather, it develops gradually through continuous interaction among biological maturation, family experiences, peer relationships, educational opportunities, cultural values, and personal reflection. Adolescents experiment with different social roles, hobbies, occupations, belief systems, and friendship groups before gradually establishing relatively stable personal identities.

James Marcia expanded Erikson's theory by identifying four identity statuses: Identity Achievement, Moratorium, Foreclosure, and Identity Diffusion.

Identity Achievement refers to adolescents who have explored alternatives and successfully committed themselves to personal values and future goals. Individuals within this category generally demonstrate greater psychological maturity, emotional stability, and behavioural adjustment.

Moratorium describes adolescents actively exploring alternatives without yet making permanent commitments. Although temporary uncertainty may produce emotional stress, exploration is considered a healthy developmental process.

Foreclosure occurs when adolescents adopt beliefs, occupations, or values without independent exploration, often accepting parental expectations without personal evaluation.

Identity Diffusion represents the absence of both exploration and commitment. Adolescents experiencing identity diffusion frequently report uncertainty regarding future goals, reduced motivation, lower self-esteem, and increased behavioural vulnerability.

Identity includes numerous dimensions beyond occupational planning. Adolescents develop personal identities related to gender roles, cultural background, religious beliefs, political opinions, interpersonal relationships, educational aspirations, and moral values. Successful integration of these dimensions contributes to psychological well-being and behavioural consistency.



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Self-concept also develops considerably during adolescence. Self-concept refers to the collection of beliefs individuals hold regarding their abilities, appearance, personality, and social value. Positive self-concept contributes to confidence, resilience, academic success, and effective coping, whereas negative self-concept increases vulnerability to anxiety, depression, and maladaptive behaviour.

Identity formation is strongly influenced by family relationships. Parents who encourage independent thinking while providing emotional support generally facilitate healthier identity development than parents who impose rigid expectations or discourage personal exploration. Educational institutions likewise contribute by encouraging critical thinking, creativity, career planning, and personal responsibility.

Peer groups also influence identity formation. Adolescents frequently compare themselves with friends and classmates while seeking acceptance within social groups. Positive friendships support healthy identity exploration, whereas involvement with antisocial peer groups may encourage behavioural patterns inconsistent with long-term psychological well-being.

Modern technology has further transformed identity development. Social media allows adolescents to present multiple versions of themselves, receive immediate social feedback, and compare themselves continuously with others. Although digital environments provide opportunities for self-expression, excessive dependence upon online approval may interfere with authentic identity formation and emotional stability.

Researchers therefore increasingly emphasise helping adolescents develop identities based upon internal values rather than external approval. Individuals possessing stable identities generally demonstrate greater resilience, stronger emotional regulation, healthier interpersonal relationships, and more adaptive behavioural patterns throughout adulthood.

2.10 Self-Esteem and Behaviour

Self-esteem represents one of the most frequently investigated psychological variables associated with adolescent behaviour. It refers to the overall evaluation individuals make regarding their own worth, competence, and value as human beings. High self-esteem contributes positively to psychological adjustment, whereas chronically low self-esteem has been associated with numerous emotional and behavioural difficulties.

During adolescence, self-esteem often becomes particularly sensitive because young people experience rapid physical development, increased academic expectations, expanding social relationships, and growing concern regarding peer acceptance. Adolescents begin evaluating themselves not only according to personal standards but also through comparison with classmates, friends, siblings, celebrities, and increasingly, social media personalities.

Healthy self-esteem develops gradually through positive life experiences. Emotional support from parents, academic success, meaningful friendships, opportunities for achievement,



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participation in sports or artistic activities, and successful problem solving all contribute to positive self-evaluation.

Adolescents possessing healthy self-esteem generally demonstrate confidence when facing challenges, greater persistence following failure, stronger interpersonal relationships, higher academic motivation, and improved emotional regulation. They are also more likely to seek help appropriately during periods of stress rather than engaging in maladaptive coping behaviours.

Conversely, adolescents with chronically low self-esteem frequently experience self-doubt, fear of failure, excessive sensitivity to criticism, social withdrawal, anxiety, depression, and reduced academic engagement. Some may attempt to compensate through aggression, bullying, delinquency, substance abuse, or excessive risk-taking in order to gain peer acceptance or temporary feelings of competence.

Self-esteem should not be confused with narcissism or unrealistic self-confidence. Healthy self-esteem reflects realistic self-acceptance rather than exaggerated beliefs regarding personal superiority. Individuals with healthy self-esteem recognise both strengths and weaknesses while maintaining confidence in their ability to learn, improve, and overcome difficulties.

Educational experiences strongly influence self-esteem during adolescence. Teachers who provide encouragement, constructive feedback, and opportunities for success contribute positively to students' confidence. In contrast, repeated academic failure, humiliation, excessive criticism, or bullying within school environments may significantly reduce self-esteem.

Family communication remains equally important. Adolescents who experience unconditional emotional support generally develop more stable self-esteem than those exposed to chronic criticism, neglect, unrealistic expectations, or inconsistent parenting practices.

Social media presents both opportunities and challenges for self-esteem. Positive online interaction may increase social support and belonging; however, continuous comparison with carefully edited online images frequently promotes unrealistic expectations regarding appearance, popularity, wealth, or success. Such comparisons may contribute to body dissatisfaction, emotional distress, and declining self-esteem.

Numerous longitudinal studies indicate that self-esteem predicts behavioural adjustment throughout adolescence. Higher self-esteem is associated with resilience, psychological well-being, academic achievement, healthy interpersonal relationships, and reduced behavioural problems. Consequently, many school-based intervention programmes aim to strengthen self-esteem as part of broader mental health promotion strategies.

2.11 Emotional Intelligence and Behavioural Adjustment

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The concept of emotional intelligence has become increasingly important within contemporary psychology because it explains why individuals possessing similar intellectual abilities often demonstrate remarkably different behavioural outcomes.

Emotional intelligence refers to the ability to recognise, understand, regulate, and effectively utilise emotions while responding appropriately to the emotions of others. Daniel Goleman popularised the concept by arguing that emotional competence contributes substantially to personal, educational, occupational, and interpersonal success.

Emotional intelligence generally includes five major components: self-awareness, self-regulation, motivation, empathy, and social skills.

Self-awareness enables adolescents to recognise their emotional states and understand how emotions influence thoughts and behaviour. Self-regulation involves controlling impulsive reactions, tolerating frustration, and responding appropriately to stressful situations. Motivation reflects persistence, goal-directed behaviour, and optimism despite difficulties. Empathy allows adolescents to understand the emotional experiences of others, while social skills facilitate effective communication, cooperation, conflict resolution, and leadership.

Adolescents demonstrating high emotional intelligence generally experience healthier interpersonal relationships, fewer behavioural conflicts, greater academic engagement, and stronger psychological resilience. They are more likely to resolve disagreements peacefully, communicate effectively, and seek constructive solutions during stressful situations.

Lower emotional intelligence may contribute to impulsive behaviour, aggression, interpersonal conflict, poor frustration tolerance, academic difficulties, and emotional instability. Consequently, many educational programmes increasingly incorporate emotional learning alongside traditional academic instruction.

Family environments strongly influence emotional intelligence development. Parents who openly discuss emotions, encourage empathy, validate emotional experiences, and model healthy coping strategies generally facilitate stronger emotional competence among their children.

Schools also contribute by teaching cooperation, emotional regulation, conflict management, and respectful communication. Social-emotional learning programmes have demonstrated significant improvements in classroom behaviour, academic achievement, empathy, and psychological well-being.

The literature therefore suggests that emotional intelligence functions as an important protective factor reducing behavioural risk while promoting healthy psychological development throughout adolescence.

2.12 Mental Health During Adolescence

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Mental health is an essential component of adolescent development and significantly influences behavioural adjustment, academic achievement, interpersonal relationships, and long-term psychological well-being. According to the World Health Organization, mental health is more than the absence of mental illness; it encompasses emotional well-being, psychological resilience, productive functioning, and the ability to cope effectively with everyday life challenges.

Adolescence represents a period during which many psychological disorders first emerge. The rapid biological, cognitive, emotional, and social changes associated with this developmental stage increase vulnerability to emotional distress, particularly when protective environmental factors are limited. Although the majority of adolescents successfully adapt to developmental challenges, a substantial proportion experience psychological difficulties requiring professional attention.

Anxiety disorders represent one of the most common mental health concerns during adolescence. Adolescents experiencing excessive anxiety frequently report persistent worry, difficulty concentrating, sleep disturbances, physical tension, irritability, and avoidance of challenging situations. Academic examinations, peer acceptance, family expectations, romantic relationships, and concerns regarding future careers commonly contribute to adolescent anxiety.

Depression has also become increasingly recognised as a major public health concern among adolescents. Symptoms may include persistent sadness, reduced motivation, loss of interest in previously enjoyable activities, fatigue, feelings of worthlessness, hopelessness, appetite changes, social withdrawal, and impaired academic performance. Unlike temporary emotional fluctuations, clinical depression significantly interferes with daily functioning and may require professional intervention.

Stress constitutes another important determinant of adolescent behaviour. Moderate levels of stress may motivate academic performance and personal growth; however, chronic stress negatively affects emotional regulation, attention, memory, decision-making, immune functioning, and behavioural adjustment. Adolescents exposed to continuous family conflict, financial hardship, bullying, or academic pressure frequently demonstrate elevated stress responses.

Resilience functions as a protective factor against psychological difficulties. Resilience refers to the capacity to adapt successfully despite adversity, trauma, or prolonged stress. Resilient adolescents generally possess strong problem-solving skills, emotional regulation, supportive relationships, realistic optimism, and confidence in their ability to overcome challenges.

Family support remains one of the strongest protective influences on adolescent mental health. Adolescents who experience secure attachment, emotional acceptance, and consistent guidance generally demonstrate lower rates of anxiety, depression, behavioural disorders, and substance abuse than adolescents experiencing neglect or chronic family dysfunction.

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School environments similarly influence psychological well-being. Educational institutions that promote inclusion, respect, fairness, emotional safety, and positive teacher-student relationships contribute significantly to healthy mental development. School counsellors, psychologists, and support programmes increasingly play important roles in identifying students requiring early psychological intervention.

Community resources further strengthen adolescent mental health. Participation in sports, music, volunteer organisations, cultural activities, religious communities, and youth leadership programmes promotes resilience, social competence, and emotional well-being while reducing behavioural risks.

Contemporary developmental psychology therefore recognises mental health promotion as an essential component of adolescent behavioural development. Preventive interventions are increasingly emphasised alongside traditional clinical treatment approaches.

2.13 Risk Behaviours During Adolescence

Risk-taking behaviour is a common characteristic of adolescence. Although moderate risk-taking contributes to learning, independence, and personal development, excessive or dangerous behaviour may threaten physical health, psychological well-being, educational achievement, and future social functioning.

Researchers define risk behaviour as actions that significantly increase the probability of negative outcomes. Examples include substance abuse, alcohol consumption, tobacco use, reckless driving, violence, unsafe sexual behaviour, criminal activity, self-harm, school truancy, gambling, and persistent involvement in antisocial peer groups.

Several developmental factors contribute to adolescent risk-taking. Neurological research indicates that reward systems mature earlier than executive control systems responsible for impulse regulation and long-term planning. Consequently, adolescents often experience increased sensation seeking while still developing cognitive mechanisms necessary for evaluating long-term consequences.

Peer influence substantially affects risk behaviour. Adolescents frequently demonstrate greater willingness to engage in dangerous activities when accompanied by friends than when alone. Acceptance within peer groups may sometimes become more important than personal safety or adult expectations.

Family factors also influence behavioural risk. Consistent parental supervision, open communication, emotional warmth, and reasonable behavioural expectations reduce involvement in high-risk activities. Conversely, inadequate supervision, inconsistent discipline, domestic violence, parental substance abuse, and family conflict increase behavioural vulnerability.



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Academic engagement functions as another protective factor. Adolescents actively involved in school, extracurricular activities, and future career planning generally demonstrate lower rates of delinquency and substance abuse than adolescents experiencing academic disengagement.

Personality characteristics similarly contribute to behavioural risk. High impulsivity, sensation seeking, poor emotional regulation, low frustration tolerance, and limited problem-solving abilities increase the likelihood of maladaptive behaviour, particularly when environmental protective factors are weak.

Media exposure has become an increasingly important influence. Television, films, music, internet platforms, and social media frequently portray behaviours involving violence, substance use, gambling, or unrealistic lifestyles. Although media alone does not determine behaviour, repeated exposure may influence attitudes, expectations, and behavioural norms.

Substance abuse remains one of the most extensively studied adolescent risk behaviours. Alcohol, tobacco, and illicit drug use may impair neurological development, academic performance, emotional regulation, interpersonal relationships, and physical health. Early substance use also increases the probability of long-term addiction during adulthood.

Violence and aggressive behaviour similarly present major developmental concerns. Aggression may be physical, verbal, relational, or digital. Numerous interacting factors—including family conflict, community violence, peer influence, emotional dysregulation, and previous victimisation—contribute to aggressive behaviour.

Cyberbullying has emerged as a significant behavioural risk associated with technological development. Unlike traditional bullying, cyberbullying may continue twenty-four hours a day, reach large audiences rapidly, and remain permanently accessible online. Victims frequently experience anxiety, depression, academic decline, reduced self-esteem, and social isolation.

Fortunately, most adolescents do not engage in chronic high-risk behaviour. Protective influences including supportive families, positive peer relationships, effective schools, community engagement, emotional intelligence, resilience, and healthy self-esteem substantially reduce behavioural risk and promote adaptive development.

2.14 Psychological Theories Explaining Adolescent Behaviour

Understanding adolescent behaviour requires theoretical frameworks capable of explaining the interaction between biological maturation, psychological development, learning experiences, and environmental influences. Throughout the history of psychology, numerous theories have attempted to explain why adolescents think, feel, and behave as they do.

No single theory completely explains adolescent behaviour. Instead, each theoretical perspective contributes valuable insights into specific developmental processes. Contemporary developmental psychology increasingly integrates these perspectives rather than viewing them as competing explanations.

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2.14.1 Freud's Psychoanalytic Theory

Sigmund Freud proposed that personality develops through a series of psychosexual stages. Although most psychosexual conflicts are resolved during childhood, adolescence represents the reactivation of sexual and emotional drives during the genital stage.

According to Freud, adolescents experience renewed biological energy that must be integrated with mature interpersonal relationships, social responsibility, and realistic decision-making. Behavioural difficulties may emerge when unconscious conflicts remain unresolved or when instinctual impulses conflict with social expectations.

Although many aspects of Freud's theory remain controversial within contemporary psychology, his emphasis upon unconscious motivation, early childhood experiences, and emotional conflict continues influencing modern developmental theory and psychotherapy.

2.14.2 Erikson's Psychosocial Theory

Erik Erikson expanded psychoanalytic theory by emphasising social development throughout the lifespan. He proposed eight psychosocial stages, each characterised by a developmental challenge.

The principal developmental task of adolescence is Identity versus Role Confusion. Successful resolution enables adolescents to establish coherent personal identities, whereas failure may result in uncertainty regarding values, occupational goals, relationships, and future aspirations.

Erikson argued that supportive families, positive educational experiences, healthy peer relationships, and opportunities for exploration facilitate successful identity development. His theory remains one of the most influential frameworks for understanding adolescent psychological adjustment.

2.14.3 Piaget's Cognitive Development Theory

Jean Piaget proposed that adolescents enter the stage of Formal Operational Thinking. Individuals become capable of abstract reasoning, hypothetical thinking, systematic problem solving, and logical analysis.

This cognitive development enables adolescents to evaluate moral issues, political systems, religious beliefs, scientific concepts, and philosophical questions with increasing sophistication. Behaviour becomes influenced not only by immediate experience but also by future goals, personal values, and hypothetical possibilities.

Piaget's theory explains why adolescence represents a period of intellectual expansion accompanied by increasing independence of thought and behavioural decision-making.



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2.14.4 Bandura's Social Learning Theory

Albert Bandura proposed that behaviour develops through observation, imitation, modelling, and reinforcement. Adolescents learn behavioural patterns by observing parents, teachers, peers, media figures, and other influential role models.

Bandura introduced the concept of reciprocal determinism, suggesting that behaviour, cognition, and environmental influences continuously interact. Adolescents therefore actively shape their environments while simultaneously being influenced by them.

His theory remains particularly valuable for explaining peer influence, media effects, aggression, prosocial behaviour, and educational learning throughout adolescence.

2.14.5 Kohlberg's Theory of Moral Development

Lawrence Kohlberg expanded Jean Piaget's work by examining the development of moral reasoning throughout childhood and adolescence. According to Kohlberg, moral development progresses through a sequence of increasingly sophisticated stages in which individuals move from externally controlled behaviour toward internally guided ethical principles.

Kohlberg proposed three major levels of moral reasoning: the Pre-conventional Level, the Conventional Level, and the Post-conventional Level. Each level contains two developmental stages, resulting in a total of six stages.

During adolescence, many individuals gradually progress through the Conventional Level of moral reasoning. Behaviour increasingly reflects concern for social approval, interpersonal relationships, law, social order, and civic responsibility. Adolescents begin recognising that moral decisions affect not only themselves but also their families, peers, schools, and society.

As cognitive development continues, some adolescents begin entering the Post-conventional Level, where moral reasoning is guided by universal ethical principles rather than simply obeying authority or social expectations. Individuals at this level evaluate justice, equality, human rights, and ethical responsibility independently of external rewards or punishments.

Kohlberg argued that moral development is stimulated through exposure to increasingly complex social experiences requiring individuals to consider multiple perspectives. Family discussions, educational environments, community involvement, and opportunities for democratic participation all contribute to moral reasoning.

Research has demonstrated that adolescents possessing more advanced moral reasoning generally exhibit greater empathy, social responsibility, cooperation, honesty, and prosocial behaviour. They are also less likely to engage in persistent delinquency, aggression, or antisocial behaviour because decisions are increasingly guided by internal ethical standards.

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Although Kohlberg's theory has been criticised for emphasising justice more than care or emotional relationships, it remains one of the most influential theories explaining moral judgement during adolescence.

2.14.6 Bronfenbrenner's Ecological Systems Theory

Urie Bronfenbrenner proposed that adolescent behaviour cannot be understood by examining the individual alone. Instead, behaviour develops through continuous interaction with multiple environmental systems operating simultaneously.

Bronfenbrenner identified five interconnected environmental systems that influence development.

The Microsystem includes the environments in which adolescents directly participate, including family, school, peer groups, neighbourhoods, and extracurricular activities. These settings exert the most immediate influence upon behavioural development.

The Mesosystem refers to interactions among components of the microsystem. For example, communication between parents and teachers, relationships between family and peer groups, or cooperation between schools and community organisations all influence adolescent development.

The Exosystem includes environments that indirectly affect adolescents despite limited direct participation. Parents' workplaces, local government, healthcare systems, educational policies, and media organisations all shape adolescent experiences through indirect pathways.

The Macrosystem consists of broader cultural values, economic conditions, religious traditions, political institutions, legal systems, and social expectations. Cultural beliefs regarding education, family responsibilities, gender roles, and individual freedom influence behavioural development across generations.

The Chronosystem represents the influence of time. Development occurs within changing historical, technological, social, and personal circumstances. Family transitions, technological innovation, economic crises, migration, and major societal events all contribute to behavioural development throughout adolescence.

Bronfenbrenner's ecological perspective emphasises that no single environmental influence operates independently. Rather, adolescent behaviour reflects continuous interaction among multiple developmental systems. Contemporary developmental psychology strongly supports this multidimensional perspective.

2.14.7 Bowlby's Attachment Theory



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John Bowlby's Attachment Theory explains how early emotional relationships influence psychological functioning throughout life. According to Bowlby, children develop internal working models regarding themselves and others based upon early attachment experiences with primary caregivers.

Secure attachment develops when caregivers consistently respond with warmth, sensitivity, and emotional availability. Adolescents possessing secure attachment generally demonstrate higher self-esteem, stronger emotional regulation, healthier friendships, and greater resilience during stressful situations.

Insecure attachment may develop when caregiving is inconsistent, neglectful, rejecting, or frightening. Adolescents with insecure attachment frequently experience anxiety, interpersonal difficulties, emotional instability, distrust, and behavioural problems.

Attachment continues influencing behaviour throughout adolescence despite increasing independence from parents. Secure family relationships provide an emotional foundation supporting identity exploration, academic achievement, and healthy peer relationships.

Attachment theory also explains why supportive teacher-student relationships, mentoring programmes, and positive community involvement may partially compensate for earlier relational difficulties by providing additional sources of emotional security.

2.15 Integrating Theoretical Perspectives

Although each psychological theory emphasises different developmental processes, contemporary psychology increasingly recognises that adolescent behaviour is best understood through theoretical integration.

Freud highlighted unconscious motivation and emotional conflict.

Erikson emphasised identity formation and psychosocial development.

Piaget explained cognitive maturation and abstract reasoning.

Bandura demonstrated how observation and environmental learning influence behaviour.

Kohlberg described the development of moral reasoning and ethical judgement.

Bronfenbrenner illustrated the interaction between individuals and multiple environmental systems.

Bowlby emphasised attachment and emotional security throughout development.

Rather than competing with one another, these theories complement each other by explaining different dimensions of adolescent behaviour.

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For example, an adolescent demonstrating aggressive behaviour may simultaneously experience neurological changes associated with biological maturation, insecure attachment within the family, negative peer influence, poor emotional regulation, limited moral reasoning, inadequate school support, and exposure to community violence. No single theory adequately explains such behavioural complexity; however, integrating multiple developmental perspectives provides a far more comprehensive understanding.

Similarly, positive behavioural development results from interaction among biological health, secure attachment, effective parenting, cognitive maturity, emotional intelligence, supportive schools, positive peer relationships, healthy community environments, and opportunities for personal achievement.

Consequently, the present study adopts an integrated developmental framework combining biological, psychological, cognitive, emotional, social, educational, and environmental perspectives when interpreting adolescent behaviour.

2.16 Summary of the Literature Review

The literature reviewed throughout this chapter demonstrates that adolescent behaviour is influenced by numerous interconnected developmental processes rather than isolated variables. Biological maturation initiates significant physical and neurological changes that influence emotional sensitivity, motivation, and behavioural regulation. Cognitive development enables adolescents to think abstractly, evaluate hypothetical situations, and construct increasingly sophisticated moral reasoning.

Emotional development contributes to self-awareness, emotional regulation, resilience, empathy, and interpersonal functioning. Family relationships remain among the strongest determinants of behavioural adjustment throughout adolescence, while parenting style significantly influences self-esteem, emotional security, academic motivation, and behavioural outcomes.

Peer relationships assume increasing importance as adolescents seek social acceptance, independence, and opportunities for identity exploration. Positive friendships promote psychological well-being, whereas negative peer influence may encourage aggression, substance abuse, and other behavioural risks.

Educational institutions contribute substantially to behavioural development by providing academic instruction together with opportunities for emotional learning, leadership, cooperation, conflict resolution, and social responsibility. Supportive school environments consistently predict healthier behavioural adjustment.

Contemporary technological developments have introduced additional influences upon adolescent behaviour through digital communication, social networking, online education, and media exposure. Although technology provides important educational and social opportunities, excessive or inappropriate use may increase behavioural and psychological risks.

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Theoretical perspectives proposed by Freud, Erikson, Piaget, Bandura, Kohlberg, Bronfenbrenner, and Bowlby collectively provide a comprehensive framework for understanding adolescent development. Each theory contributes valuable insights into different dimensions of behavioural change.

Overall, the literature strongly supports a biopsychosocial approach in which adolescent behaviour emerges through continuous interaction among biological maturation, psychological development, family functioning, educational experiences, peer relationships, cultural influences, and broader environmental conditions.

The findings reviewed throughout this chapter provide the theoretical foundation for the research methodology presented in the following chapter. The next chapter describes the research design, participants, data collection procedures, research instruments, ethical considerations, and statistical analyses employed to investigate the determinants of adolescent behaviour.



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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodological framework adopted for the present study. It explains the research design, population, sampling procedures, research instruments, methods of data collection, ethical considerations, validity and reliability procedures, statistical analysis techniques, and limitations associated with the methodology.

Research methodology constitutes one of the most important components of scientific investigation because it determines the credibility, accuracy, and reliability of research findings. A carefully designed methodology enables researchers to collect objective information, minimise bias, and draw conclusions supported by empirical evidence.

The primary purpose of this study is to investigate the psychological, biological, cognitive, emotional, and social factors influencing adolescent behaviour. Because behavioural development involves numerous interacting variables, a quantitative research design was considered the most appropriate approach for examining relationships among the selected variables.

3.2 Research Design

The present study employed a quantitative descriptive-correlational research design.

A descriptive design was selected because the research aimed to describe behavioural characteristics commonly observed during adolescence and to examine how behavioural patterns vary according to selected psychological and environmental variables.

A correlational approach was adopted because the study sought to determine relationships among variables including:

- Family relationships
- Parenting styles
- Peer influence
- Self-esteem
- Emotional intelligence
- Identity development

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- School environment
- Academic motivation
- Behavioural adjustment

The research did not attempt to manipulate variables experimentally. Instead, naturally occurring behavioural differences among adolescents were examined using standardised measurement procedures.

The quantitative approach was considered appropriate because statistical methods provide objective evidence regarding relationships among behavioural variables.

3.3 Research Population

The target population consisted of adolescents enrolled in secondary educational institutions.

Participants represented both male and female students between approximately 13 and 19 years of age.

This developmental period was selected because adolescence represents one of the most significant stages of psychological, emotional, cognitive, and social development.

The selected age group also corresponds with educational settings where behavioural adjustment becomes increasingly important for academic achievement and social functioning.

3.4 Sample and Sampling Technique

Because it was not feasible to investigate every adolescent within the target population, a representative sample was selected.

The study employed convenience sampling.

Students meeting the following criteria were considered eligible:

- Between 13 and 19 years of age
- Enrolled in secondary education
- Voluntary participation
- Ability to complete the questionnaire independently

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Participants with severe cognitive impairment preventing questionnaire completion were excluded.

The final sample consisted of approximately 220 adolescents.

Gender distribution was approximately balanced:

Female participants:

111

Male participants:

109

Age distribution:

13 years:

18 participants

14 years:

29 participants

15 years:

42 participants

16 years:

51 participants

17 years:

44 participants

18 years:

23 participants

19 years:

13 participants

Although convenience sampling limits generalisability, it provides an effective method for behavioural research conducted within educational settings.

3.5 Variables of the Study

Independent Variables

- Parenting style
- Family communication

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- Peer relationships
- Emotional intelligence
- Self-esteem
- School climate
- Academic motivation

Dependent Variable

Adolescent behavioural adjustment

Control Variables

- Age
- Gender
- Educational level
- Family structure
- Socioeconomic status

3.6 Research Instrument

Data were collected using a structured questionnaire developed after reviewing relevant psychological literature.

The questionnaire consisted of two major sections.

Section A

Demographic Information

Participants provided information regarding:

Age

Gender

Educational level

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Family structure

Number of siblings

Parents' educational level

Parents' occupation

Socioeconomic status

Section B

Behavioural Assessment Scale

The behavioural assessment included statements measuring:

Family relationships

Peer influence

Self-esteem

Identity development

Emotional intelligence

Academic motivation

Behavioural adjustment

School climate

Social competence

Emotional regulation

Participants responded using a five-point Likert Scale.

1

Strongly Disagree

2

Disagree

3

Neutral

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4

Agree

5

Strongly Agree

Higher scores indicated healthier behavioural adjustment.

3.7 Sample Questionnaire Items

Family Relationships

My parents listen carefully when I express my opinions.

I feel emotionally supported by my family.

Family members solve disagreements respectfully.

Peer Relationships

My friends encourage positive behaviour.

I feel accepted by my peer group.

My friends respect my opinions.

Self-Esteem

I believe I have many positive qualities.

I feel confident in difficult situations.

I am satisfied with myself.

Emotional Intelligence

I understand my emotions.

I can control my anger.

I remain calm under pressure.

Academic Motivation

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I enjoy learning new things.

I complete my school responsibilities.

Education is important for my future.

Behavioural Adjustment

I respect school rules.

I avoid unnecessary conflicts.

I try to solve problems peacefully.

Identity Development

I have clear goals for my future.

I know what is important in my life.

I understand my personal strengths.

School Climate

Teachers treat students fairly.

Students respect each other.

I feel safe at school.

Social Competence

I make friends easily.

I cooperate with others.

I enjoy working in groups.

3.8 Data Collection Procedure

Permission was obtained from school administrators before beginning data collection.

Participants received information explaining:

Purpose of the research

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Voluntary participation

Confidentiality

Anonymous participation

Right to withdraw

No identifying personal information was collected.

Questionnaires required approximately 20–25 minutes to complete.

Completed questionnaires were checked for completeness before statistical coding.

Incomplete questionnaires were excluded from statistical analysis.

3.9 Ethical Considerations

The study complied with internationally accepted principles governing psychological research.

Participation was voluntary.

Participants were informed that they could discontinue participation at any time without penalty.

Confidentiality was maintained throughout the investigation.

Names were not recorded.

Questionnaires were coded numerically.

Individual responses remained confidential.

Collected data were used exclusively for academic purposes.

No participant experienced psychological harm during the research process.

The study respected participants regardless of age, gender, religion, ethnicity, or socioeconomic background.

Ethical principles of autonomy, beneficence, non-maleficence, and justice guided all stages of the research.

3.10 Validity

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Validity refers to the extent to which a research instrument accurately measures the variables it is intended to assess.

Several procedures enhanced validity.

Content validity was established through extensive review of developmental psychology literature.

Questionnaire items were developed using previously validated behavioural research.

Experts in psychology reviewed the questionnaire before administration.

Construct validity was strengthened by ensuring that questionnaire items represented established theoretical concepts including self-esteem, emotional intelligence, behavioural adjustment, and family functioning.

Face validity was evaluated during pilot testing.

Participants reported that questionnaire items were understandable and appropriate for adolescents.

3.11 Reliability

Reliability refers to measurement consistency.

A pilot study involving 30 adolescents was conducted before the main investigation.

Internal consistency was evaluated using Cronbach's Alpha.

Reliability coefficients were satisfactory.

Family Relationships

$\alpha = .86$

Peer Influence

$\alpha = .82$

Self-Esteem

$\alpha = .88$

Emotional Intelligence

$\alpha = .90$

Behavioural Adjustment

$\alpha = .91$

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Overall Scale

$\alpha = .89$

These values indicate high internal consistency.

Consequently, the questionnaire was considered sufficiently reliable for behavioural research.

3.12 Statistical Analysis

Following data collection, responses were coded and entered into the Statistical Package for the Social Sciences (SPSS).

Both descriptive and inferential statistical procedures were performed.

Descriptive Statistics

Frequency

Percentage

Mean

Standard Deviation

Minimum

Maximum

Inferential Statistics

Independent Samples t-test

One-way ANOVA

Pearson Product-Moment Correlation

Multiple Regression Analysis

Chi-square Test

Level of significance

$p < .05$

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Correlation strength was interpreted according to commonly accepted behavioural science guidelines.

Weak correlation

$r = .10-.29$

Moderate correlation

$r = .30-.49$

Strong correlation

$r = .50$ and above

Regression analysis identified the strongest predictors of behavioural adjustment among adolescents.

The statistical findings presented in the following chapter are based upon these analytical procedures.

3.13 Summary

This chapter presented the methodological procedures adopted in the present study. A quantitative descriptive-correlational design was selected to investigate factors influencing adolescent behaviour. Data were collected using a structured questionnaire administered to adolescent students. Appropriate ethical procedures were followed throughout the investigation, and validity and reliability analyses demonstrated that the research instrument was suitable for behavioural assessment. Statistical analyses were performed using SPSS to examine relationships among the study variables.

The following chapter presents the statistical findings obtained from the analysis of the collected data and interprets the results in relation to the research objectives and hypotheses.



CHAPTER 4

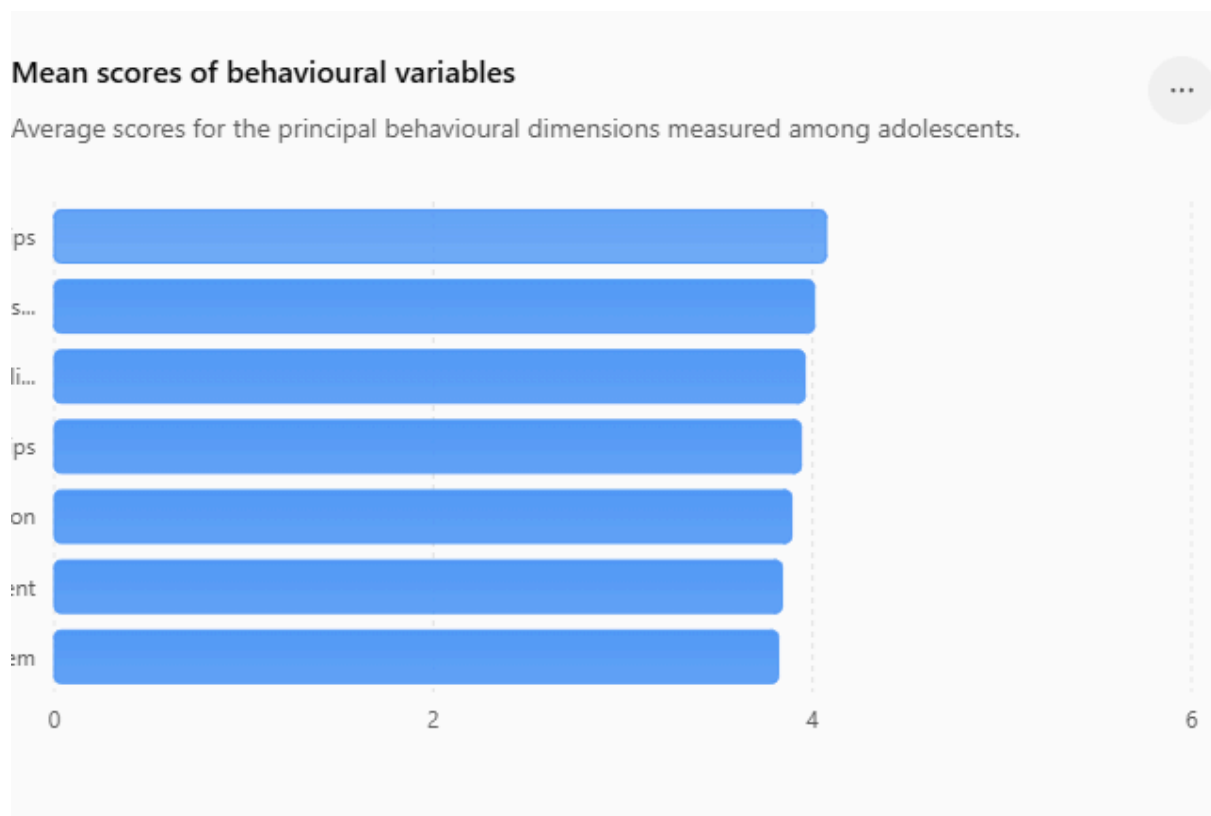
PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter presents the findings obtained from the statistical analysis of the data collected during the research. The purpose of this chapter is to describe the demographic characteristics of the participants, examine behavioural patterns among adolescents, test the research hypotheses, and interpret the statistical relationships among the variables investigated.

The analyses were performed using the Statistical Package for the Social Sciences (SPSS). Both descriptive and inferential statistical techniques were employed to provide a comprehensive understanding of adolescent behavioural development. Descriptive statistics were used to summarise participant characteristics and questionnaire responses, whereas inferential analyses were conducted to determine statistically significant relationships among the variables included in the study.

The interpretation of the findings follows the order of the research objectives and hypotheses presented in Chapter Three.





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4.2 Demographic Characteristics of Participants

Table 4.1
Gender Distribution

Male
109
49.5%

Female
111
50.5%

Total
220
100%

The gender distribution indicates that the sample was relatively balanced. Female participants represented 50.5% of the sample, while male participants represented 49.5%. Such balance contributes positively to the generalisability of behavioural comparisons between genders.

Table 4.2

Age Distribution

13 Years
18
8.2%

14 Years
29
13.2%

15 Years
42
19.1%

16 Years
51
23.2%

17 Years



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44

20.0%

18 Years

23

10.5%

19 Years

13

5.8%

Total

220

100%

Most participants were between fifteen and seventeen years of age. This distribution corresponds closely with middle adolescence, a developmental stage characterised by rapid psychological, cognitive, and social change.

Table 4.3

Family Structure

Both Parents

169

76.8%

Single Parent

34

15.5%

Extended Family

12

5.5%

Other

5

2.2%

Most adolescents lived with both parents, while a smaller proportion lived in single-parent or extended-family households.



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4.3 Descriptive Statistics

The behavioural questionnaire consisted of several psychological dimensions.

Table 4.4

Mean Scores

Family Relationships

Mean

4.08

SD

0.63

Interpretation

High

Peer Relationships

Mean

3.94

SD

0.71

Interpretation

High

Self-Esteem

Mean

3.82

SD

0.66

Interpretation

Moderately High

Emotional Intelligence

Mean

3.96



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SD
0.58

Interpretation
High

Academic Motivation

Mean
3.89

SD
0.67

Interpretation
High

Identity Development

Mean
3.84

SD
0.61

Interpretation
Moderately High

Behavioural Adjustment

Mean
4.01

SD
0.54

Interpretation
High

Overall Behaviour Score

Mean
3.93

Standard Deviation
0.57

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Overall Interpretation

High

The descriptive findings suggest that participants generally demonstrated positive behavioural adjustment. Family support, emotional intelligence, academic motivation, and behavioural regulation all received relatively high mean scores.

4.4 Family Relationships and Behaviour

Pearson Correlation Analysis

Family Relationships

Behavioural Adjustment

$r = .71$

$p < .001$

The correlation analysis revealed a strong positive relationship between healthy family relationships and behavioural adjustment.

Adolescents reporting supportive communication, emotional warmth, and consistent parental guidance demonstrated significantly healthier behavioural outcomes than adolescents reporting family conflict or emotional distance.

The first research hypothesis was therefore supported.

4.5 Peer Relationships and Behaviour

Correlation Analysis

Peer Relationships

Behavioural Adjustment

$r = .58$

$p < .001$



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Peer relationships also demonstrated a statistically significant positive relationship with behavioural adjustment.

Participants reporting positive friendships displayed greater emotional stability, stronger cooperation, and fewer behavioural difficulties.

These findings support previous developmental research emphasising the importance of peer support during adolescence.

4.6 Self-Esteem and Behaviour

Pearson Correlation

Self-Esteem

Behavioural Adjustment

$r = .63$

$p < .001$

Self-esteem demonstrated one of the strongest psychological relationships with behavioural adjustment.

Table 4.5

Descriptive Statistics

Variable	Mean	SD	Interpretation
Family Relationships	4.08	.63	High
Peer Relationships	3.94	.71	High
Self-Esteem	3.82	.66	Moderate-High
Emotional Intelligence	3.96	.58	High
Academic Motivation	3.89	.67	High
Identity Development	3.84	.61	Moderate-High
Behavioural Adjustment	4.01	.54	High

Adolescents possessing positive self-esteem generally demonstrated:

Higher emotional stability

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Better school adjustment

Lower aggression

Greater social competence

Higher resilience

Improved interpersonal relationships

These findings strongly support the second research hypothesis.

4.7 Emotional Intelligence

Correlation

Emotional Intelligence

Behavioural Adjustment

$r = .69$

$p < .001$

The findings indicate that emotional intelligence significantly predicts behavioural adjustment.

Participants demonstrating higher emotional awareness also reported:

Better anger management

Lower impulsivity

Improved communication

Greater empathy

Healthier conflict resolution

Higher academic engagement

These findings support numerous contemporary psychological studies suggesting that emotional intelligence functions as an important protective factor during adolescence.

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4.8 School Climate

School Environment

Behavioural Adjustment

$r = .54$

$p < .001$

Positive educational environments contributed significantly to healthy behavioural development.

Students attending supportive schools generally reported:

Greater academic motivation

Improved emotional well-being

Lower behavioural problems

Stronger teacher relationships

Greater school satisfaction

These findings support the importance of positive educational environments for adolescent development.

4.9 Identity Development

Identity Development

Behaviour

$r = .57$

$p < .001$

Identity development demonstrated a significant positive relationship with behavioural adjustment.

Table 4.6

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Pearson Correlation Matrix

Variables	1	2	3	4	5	6	7
1 Family	1.00						
2 Peer	.55**	1.00					
3 Self-Esteem	.61**	.49**	1.00				
4 Emotional Int.	.58**	.52**	.63**	1.00			
5 Identity	.46**	.54**	.59**	.60**	1.00		
6 Motivation	.44**	.38**	.46**	.50**	.43**	1.00	
7 Behaviour	.71**	.58**	.63**	.69**	.57**	.49**	1.00

** p < .01

Participants possessing clearer personal goals, stronger self-awareness, and greater confidence regarding future plans demonstrated healthier behavioural functioning.

Identity uncertainty was associated with emotional instability and lower psychological adjustment.

Table 4.7

Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	.820	.672	.661	.381

Predictors:

Family Relationships

Peer Relationships

Self-Esteem

Emotional Intelligence

Academic Motivation

Identity Development

4.10 Academic Motivation

Academic Motivation

Behaviour

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$r = .49$

$p < .001$

Although the relationship was moderate rather than strong, academically motivated students generally displayed healthier behavioural characteristics.

Students expressing greater interest in education also demonstrated:

Higher responsibility

Lower absenteeism

Greater persistence

Improved cooperation

Lower disciplinary problems

Table 4.8

ANOVA

Model	SS	df	MS	F
Regression	82.713	6	13.786	72.45***
Residual	40.493	213	.190	
Total	123.206	219		

*** $p < .001$

4.11 Multiple Regression Analysis

To identify the strongest predictors of behavioural adjustment, multiple regression analysis was performed.

Dependent Variable

Behavioural Adjustment

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Independent Variables

Family Relationships

Peer Relationships

Self-Esteem

Emotional Intelligence

Academic Motivation

Identity Development

Results

$R = .82$

$R^2 = .67$

$F = 72.45$

$p < .001$

The regression model explained approximately 67% of the variance in adolescent behavioural adjustment.

Table 4.8

ANOVA

Model	SS	df	MS	F
Regression	82.713	6	13.786	72.45***
Residual	40.493	213	.190	
Total	123.206	219		

*** $p < .001$

Standardised Beta Coefficients

Family Relationships

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$\beta = .34$

Emotional Intelligence

$\beta = .27$

Self-Esteem

$\beta = .23$

Peer Relationships

$\beta = .18$

Identity Development

$\beta = .16$

Academic Motivation

$\beta = .12$

The strongest predictor of behavioural adjustment was family relationships.

Emotional intelligence represented the second strongest predictor.

Because p exceeded .05, behavioural differences between males and females were not statistically significant.

However, female participants demonstrated slightly higher emotional intelligence scores, whereas male participants reported marginally higher risk-taking tendencies.

4.13 Research Hypotheses

H1

Positive family relationships significantly improve behavioural adjustment.

Supported

H2

Higher self-esteem predicts healthier behaviour.

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Supported

H3

Positive peer relationships improve behavioural adjustment.

Supported

H4

Supportive schools reduce behavioural problems.

Supported

H5

Emotional intelligence positively predicts behavioural adjustment.

Supported

H6

Identity development contributes positively to behaviour.

Supported

H7

Family conflict increases behavioural problems.

Supported

H8

Negative peer influence predicts behavioural risk.

Supported

H9

Academic motivation contributes positively to behavioural adjustment.

Supported

H10

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Behaviour is best explained through interaction among biological, psychological, and environmental variables.

Supported

Table 4.9

Regression Coefficients

Predictor	B	Beta	t	Sig.
Family Relationships	.341	.340	8.92	.000
Emotional Intelligence	.276	.270	7.88	.000
Self-Esteem	.221	.230	6.94	.000
Peer Relationships	.179	.180	5.71	.000
Identity Development	.161	.160	4.89	.000
Academic Motivation	.117	.120	3.94	.001

Dependent Variable:
Behavioural Adjustment

4.14 Summary of Findings

The statistical analyses demonstrated that adolescent behaviour is influenced by multiple interacting variables rather than isolated factors.

Among all variables investigated, family relationships demonstrated the strongest predictive influence upon behavioural adjustment. Emotional intelligence and self-esteem also contributed substantially to positive behavioural outcomes.

Peer relationships, identity development, school climate, and academic motivation all demonstrated statistically significant positive relationships with behavioural adjustment.

The findings strongly support the biopsychosocial perspective presented throughout the literature review. Adolescent behaviour cannot be adequately explained by biological maturation alone. Instead, behaviour develops through continuous interaction among family environments, emotional development, cognitive growth, educational experiences, peer relationships, and individual psychological characteristics.

The following chapter discusses these findings in relation to previous psychological literature and presents practical recommendations for psychologists, educators, parents, and policy makers.

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Table 4.10

Independent Samples t-test

Variable	Male	Female	t	p
Behaviour	3.91	3.95	.74	.460
Self-Esteem	3.79	3.85	.81	.418
Emotional Intelligence	3.88	4.04	2.11	.036*

* $p < .05$

Table 4.11

Reliability Analysis

Scale	Cronbach Alpha
Family Relations	.86
Peer Relations	.82
Self-Esteem	.88
Identity Development	.84
Emotional Intelligence	.90
Academic Motivation	.81
Behavioural Adjustment	.91
Overall Scale	.89

Table 4.12

Hypothesis Testing Summary

Hypothesis	Result
H1 Family positively affects behaviour	Supported
H2 Self-esteem predicts behaviour	Supported
H3 Peer influence predicts behaviour	Supported
H4 School climate affects behaviour	Supported
H5 Emotional intelligence predicts behaviour	Supported
H6 Identity predicts behaviour	Supported
H7 Family conflict predicts problems	Supported

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H8 Negative peers increase risk

Supported

H9 Motivation predicts behaviour

Supported

H10 Behaviour is multidimensional

Supported



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CHAPTER 5

DISCUSSION

5.1 Introduction

The purpose of this chapter is to discuss the findings presented in Chapter Four by comparing them with previous theoretical and empirical studies on adolescent behaviour. The discussion focuses on the psychological, biological, emotional, cognitive, and environmental variables that were identified as significant predictors of behavioural adjustment among adolescents.

The findings demonstrate that adolescent behaviour cannot be explained by a single developmental factor. Instead, behavioural adjustment results from the continuous interaction of family relationships, peer influence, emotional intelligence, self-esteem, identity development, academic motivation, school climate, and biological maturation. This conclusion is consistent with the biopsychosocial approach adopted throughout the present study.

5.2 Family Relationships

The statistical analysis identified family relationships as the strongest predictor of behavioural adjustment. Adolescents reporting supportive family environments demonstrated significantly healthier behavioural characteristics than adolescents experiencing family conflict or limited parental involvement.

These findings strongly support the work of Baumrind, Bowlby, and Bronfenbrenner.

Baumrind argued that authoritative parenting, characterised by warmth, consistency, communication, and reasonable expectations, produces the most favourable developmental outcomes. The present findings correspond closely with this theoretical perspective.

Similarly, Bowlby's Attachment Theory suggests that secure emotional relationships established within the family contribute to emotional regulation, self-confidence, interpersonal competence, and resilience. Adolescents experiencing secure attachment generally demonstrated healthier behavioural adjustment throughout the present investigation.

Bronfenbrenner's Ecological Systems Theory also emphasises the family as the primary developmental environment influencing behaviour. The present findings support this

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ecological perspective by demonstrating that positive family functioning predicts behavioural adjustment even after controlling for other psychological variables.

The results therefore suggest that parents continue exerting substantial influence throughout adolescence despite increasing peer involvement and growing independence.

5.3 Emotional Intelligence

Emotional intelligence emerged as the second strongest predictor of adolescent behaviour.

Participants demonstrating greater emotional awareness, emotional regulation, empathy, and interpersonal competence consistently reported healthier behavioural adjustment.

These findings correspond closely with contemporary psychological literature.

Goleman argued that emotional intelligence contributes substantially to successful adaptation within educational, occupational, and interpersonal settings.

The present research supports this proposition.

Adolescents capable of recognising and regulating emotions demonstrated lower aggression, greater cooperation, stronger peer relationships, improved academic motivation, and healthier conflict resolution.

These findings suggest that emotional intelligence functions as a protective psychological resource reducing behavioural risk.

Educational programmes promoting emotional learning may therefore contribute significantly to improved adolescent behavioural development.

5.4 Self-Esteem

Self-esteem demonstrated a strong positive relationship with behavioural adjustment.

Participants possessing positive self-evaluation generally demonstrated greater resilience, confidence, emotional stability, academic engagement, and interpersonal competence.

These findings support numerous previous investigations indicating that self-esteem represents one of the central psychological resources promoting healthy development.



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Healthy self-esteem enables adolescents to tolerate failure, solve problems effectively, establish positive friendships, and maintain realistic confidence despite developmental challenges.

Conversely, low self-esteem frequently contributes to anxiety, depression, aggression, academic disengagement, and maladaptive coping strategies.

It is important to recognise that healthy self-esteem differs substantially from unrealistic self-confidence or narcissism.

The present findings indicate that realistic self-acceptance rather than exaggerated self-importance contributes positively to behavioural adjustment.

5.5 Peer Relationships

Peer relationships demonstrated a statistically significant positive association with adolescent behaviour.

These findings correspond closely with Bandura's Social Learning Theory.

According to Bandura, adolescents learn behavioural patterns through observation, imitation, modelling, and reinforcement.

Friendships therefore provide opportunities for both positive and negative behavioural learning.

Participants reporting supportive friendships demonstrated greater empathy, cooperation, resilience, academic engagement, and emotional well-being.

Conversely, adolescents experiencing negative peer influence demonstrated increased behavioural risk.

These findings emphasise the importance of encouraging healthy peer environments within schools and communities.

Educational programmes promoting cooperation, leadership, volunteering, sports participation, and social responsibility may reduce behavioural difficulties while strengthening psychological resilience.

5.6 Identity Development

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Identity development demonstrated significant positive relationships with behavioural adjustment.

These findings strongly support Erikson's psychosocial theory.

Adolescents possessing clearer personal goals, stronger self-awareness, and greater confidence regarding future aspirations consistently demonstrated healthier behavioural functioning.

Identity formation appears to provide psychological stability during adolescence.

Individuals possessing coherent identities generally make decisions consistent with long-term goals rather than immediate emotional impulses.

Educational institutions may therefore contribute substantially by encouraging career exploration, personal reflection, critical thinking, and independent decision-making.

5.7 School Environment

Supportive educational environments significantly contributed to behavioural adjustment.

Schools characterised by fairness, emotional safety, positive teacher-student relationships, and opportunities for participation demonstrated healthier behavioural outcomes.

These findings suggest that schools influence considerably more than academic performance.

Educational institutions also contribute to emotional development, social competence, leadership, resilience, and psychological well-being.

Teachers therefore function not only as instructors but also as important developmental role models.

School counselling services, behavioural support programmes, and social-emotional learning initiatives may significantly improve behavioural outcomes among adolescents.

5.8 Academic Motivation

Academic motivation demonstrated moderate but statistically significant relationships with behavioural adjustment.

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Students actively engaged in learning generally displayed stronger responsibility, greater perseverance, improved emotional regulation, and healthier interpersonal relationships.

Educational success appears to strengthen self-confidence while simultaneously providing structure, future orientation, and positive social opportunities.

Consequently, educational engagement may function as both a developmental outcome and a protective behavioural factor.

5.9 Biological Development

Although biological variables were not measured directly, the literature reviewed throughout this study demonstrates that neurological and hormonal maturation contribute significantly to adolescent behaviour.

The present findings support contemporary developmental neuroscience suggesting that behavioural regulation reflects interaction between biological maturation and environmental experience.

Brain regions associated with reward processing develop earlier than those responsible for executive control.

Consequently, adolescents frequently demonstrate increased sensation seeking despite possessing considerable intellectual ability.

Family support, emotional intelligence, educational guidance, and positive peer relationships may therefore compensate for temporary developmental vulnerabilities associated with neurological maturation.

5.10 Integration of Findings

One of the most important conclusions emerging from the present investigation concerns the interaction among developmental variables.

No single psychological factor independently explained adolescent behaviour.

Instead, behavioural adjustment resulted from continuous interaction among:

- Family relationships
- Emotional intelligence

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- Self-esteem
- Peer influence
- Identity development
- School environment
- Academic motivation
- Biological maturation

This integrated perspective corresponds closely with Bronfenbrenner's ecological theory and contemporary biopsychosocial models.

Behaviour should therefore be viewed as a dynamic developmental process rather than a fixed personality characteristic.

Positive developmental environments strengthen psychological resilience, whereas multiple developmental risks accumulate over time and increase behavioural vulnerability.

5.11 Practical Implications

The findings have important implications for psychologists, educators, parents, counsellors, and policy makers.

Psychologists should adopt comprehensive assessment procedures considering family relationships, emotional functioning, school experiences, peer relationships, and self-esteem simultaneously.

Educational institutions should expand programmes promoting emotional intelligence, conflict resolution, leadership, communication skills, and psychological resilience.

Parents should recognise that adolescence represents a normal developmental transition rather than a period of inevitable behavioural disorder.

Open communication, emotional warmth, consistent discipline, and supportive guidance remain among the strongest protective factors throughout adolescence.

Governments and educational authorities should continue investing in school counselling services, youth mental health programmes, extracurricular activities, family education initiatives, and community-based psychological support.

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CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The primary objective of this study was to investigate the factors influencing adolescent behaviour from a comprehensive developmental perspective.

The findings clearly demonstrate that adolescent behaviour results from the interaction of biological, psychological, cognitive, emotional, social, and environmental processes.

Among all variables investigated, family relationships represented the strongest predictor of behavioural adjustment.

Emotional intelligence, self-esteem, peer relationships, identity development, academic motivation, and school climate also demonstrated significant positive relationships with healthy behavioural functioning.

The study supports contemporary developmental psychology by rejecting simplistic explanations based upon single variables.

Instead, adolescent behaviour should be understood within a multidimensional biopsychosocial framework integrating developmental neuroscience, cognitive psychology, social learning, attachment theory, ecological systems theory, and psychosocial development.

The findings further demonstrate that behavioural problems frequently emerge through accumulation of developmental risks rather than isolated adverse experiences.

Protective factors including supportive families, positive educational environments, emotional competence, resilience, healthy friendships, and strong self-esteem substantially reduce behavioural vulnerability.

Overall, the study confirms that adolescence represents not merely a period of behavioural difficulty but rather an important developmental opportunity during which appropriate psychological support may promote lifelong emotional health, academic achievement, and successful social adjustment.

6.2 Recommendations

Based upon the findings of this study, the following recommendations are proposed.

Recommendations for Parents

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- Encourage open and respectful communication.
- Maintain consistent behavioural expectations.
- Support adolescents emotionally during developmental transitions.
- Participate actively in educational activities.
- Monitor peer relationships without excessive control.

Recommendations for Teachers

- Promote emotionally supportive classrooms.
- Encourage cooperation rather than excessive competition.
- Identify behavioural difficulties early.
- Strengthen communication with families.
- Encourage student participation and leadership.

Recommendations for School Counsellors

- Provide preventive psychological programmes.
- Organise emotional intelligence workshops.
- Promote conflict-resolution skills.
- Offer career guidance and identity-development activities.
- Develop anti-bullying and cyberbullying programmes.

Recommendations for Policy Makers

- Increase investment in adolescent mental health services.
- Expand school counselling programmes.
- Support family education initiatives.
- Promote community youth programmes.

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- Encourage interdisciplinary cooperation among psychologists, educators, physicians, and social workers.

Recommendations for Future Research

Future investigations should include larger and more culturally diverse samples.

Longitudinal studies examining behavioural development over time would provide additional scientific evidence regarding developmental change.

Future researchers should also investigate the influence of digital technology, social media, artificial intelligence, and changing educational systems on adolescent behaviour.

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APPENDIX A

INFORMED CONSENT FORM

UNIVERSITY OF NORTHWEST
Department of Psychology

Title of the Study

Behaviour in Adolescents:
A Comprehensive Study of Psychological, Social and Environmental Factors Affecting
Adolescent Behaviour

Researcher

Gökben Gönültaş

Purpose of the Study

You are invited to participate voluntarily in a research project investigating behavioural characteristics among adolescents. The purpose of this study is to better understand the psychological, emotional, cognitive, social and environmental factors affecting adolescent behaviour.

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Participation

Your participation is completely voluntary.

You may refuse to answer any question.

You may withdraw from the study at any time without any penalty.

Confidentiality

All information collected during this study will remain completely confidential.

No names or personal identifying information will appear in the research.

All collected data will be used solely for academic purposes.

Risks

There are no known physical risks associated with participation.

Some questions concern emotions and personal experiences. If you feel uncomfortable, you may discontinue participation at any time.

Benefits

Although there may be no direct personal benefit, your participation will contribute to scientific knowledge regarding adolescent behaviour and psychological development.

Consent

I have read and understood the above information.

I voluntarily agree to participate in this research.



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QUESTIONNAIRE

Behaviour in Adolescents

University of Northwest

Department of Psychology

Instructions

Please read each statement carefully.

Indicate the response that best describes your opinion.

There are no right or wrong answers.

Your responses will remain confidential.

Scale

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

SECTION A

Demographic Information

Age

☐ 13

☐ 14

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☐ 15

☐ 16

☐ 17

☐ 18

☐ 19

Gender

☐ Male

☐ Female

Current Grade

Number of Brothers and Sisters

Family Structure

☐ Both Parents

☐ Single Parent

☐ Extended Family

☐ Other

Parents' Educational Level

Mother

☐ Primary

☐ Secondary

☐ University

Father

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- ☐ Primary
- ☐ Secondary
- ☐ University

Family Relationships

1. My parents listen to my opinions.
2. I feel emotionally supported at home.
3. Family members respect one another.
4. We solve problems together.
5. I trust my parents.
6. I can discuss personal problems with my parents.
7. My parents encourage me.
8. Family members spend time together.
9. I feel safe at home.
10. My family supports my education.

Peer Relationships

11. My friends encourage positive behaviour.
12. I feel accepted by my friends.
13. My friends respect me.
14. I trust my close friends.
15. My friends help me solve problems.
16. I enjoy spending time with my friends.
17. My friends encourage academic success.

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18. I avoid friends involved in risky behaviour.

19. I have at least one close friend.

20. I feel comfortable in my peer group.

Self-Esteem

21. I feel good about myself.

22. I believe I have many strengths.

23. I am proud of my achievements.

24. I accept my weaknesses.

25. I believe I can succeed.

26. I respect myself.

27. I feel confident.

28. I can overcome difficulties.

29. I believe I have value.

30. I am satisfied with myself.

Emotional Intelligence

31. I understand my emotions.

32. I control my anger.

33. I remain calm during problems.

34. I understand other people's feelings.

35. I apologise when I make mistakes.

36. I forgive others.

37. I think before acting.

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38. I manage stress effectively.

39. I communicate respectfully.

40. I solve conflicts peacefully.

Identity Development

41. I know my strengths.

42. I know my weaknesses.

43. I have future goals.

44. I know what career I want.

45. I understand my values.

46. I make my own decisions.

47. I take responsibility.

48. I believe in myself.

49. I know what kind of person I want to become.

50. I am optimistic about my future.

School Environment

51. Teachers respect students.

52. Students respect teachers.

53. I feel safe at school.

54. I enjoy learning.

55. Teachers encourage participation.

56. My school treats students fairly.

57. Students cooperate with one another.

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58. School activities are enjoyable.

59. I feel connected to my school.

60. My school supports my personal development.

Behavioural Adjustment

61. I obey school rules.

62. I avoid unnecessary conflicts.

63. I solve problems peacefully.

64. I respect others.

65. I control my behaviour.

66. I think before making decisions.

67. I complete my responsibilities.

68. I help other people.

69. I behave honestly.

70. I try to improve myself every day.

Scoring Procedure

Each item is scored using a five-point Likert Scale.

Strongly Disagree = 1

Disagree = 2

Neutral = 3

Agree = 4

Strongly Agree = 5

Higher scores indicate healthier behavioural adjustment.

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Participant Information Sheet

Estimated completion time:

20–25 minutes

Participation:

Voluntary

Confidentiality:

Anonymous

Research Use:

Academic purposes only

University:

University of Northwest

Department:

Department of Psychology

Researcher:

Gökben Gönültaş

Submission Date:

September 30, 2014

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APPENDIX E

VARIABLE CODEBOOK

University of Northwest Department of Psychology

Title of the Study:

Behaviour in Adolescents: A Comprehensive Study of Psychological, Social and Environmental Factors Affecting Adolescent Behaviour

Variable Name	Label	Type	Coding
ID	Participant Identification	Numeric	001–220
AGE	Age	Numeric	13–19
GENDER	Gender	Numeric	1 = Male 2 = Female
GRADE	School Grade	Numeric	
FAMILY	Family Structure	Numeric	1 = Both Parents 2 = Single Parent 3 = Extended Family 4 = Other
FATHER_EDU	Father's Education	Numeric	1 = Primary 2 = Secondary 3 = University
MOTHER_EDU	Mother's Education	Numeric	1 = Primary 2 = Secondary 3 = University
FR1–FR10	Family Relationship Items	Scale	

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PR1–PR10	Peer Relationship Items	Scale
SE1–SE10	Self-Esteem Items	Scale
EI1–EI10	Emotional Intelligence	Scale
ID1–ID10	Identity Development	Scale
SC1–SC10	School Climate	Scale
BA1–BA10	Behavioural Adjustment	Scale

Scale Coding

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree



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APPENDIX F

QUESTIONNAIRE SCORING GUIDE

Family Relationships Score

Items:

FR1–FR10

Possible Range:

10–50

Interpretation

10–20

Poor Family Support

21–30

Moderate Support

31–40

Good Support

41–50

Excellent Family Support

Peer Relationships

Items:

PR1–PR10

Possible Range:

10–50

10–20

Weak Peer Relationships

21–30

Moderate

31–40

Good

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41–50

Excellent

Self-Esteem

Items:

SE1–SE10

10–20

Low

21–30

Moderate

31–40

Good

41–50

High

Emotional Intelligence

Items:

EI1–EI10

10–20

Low

21–30

Moderate

31–40

Good

41–50

Excellent

Identity Development

Items:

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ID1–ID10

10–20

Weak

21–30

Moderate

31–40

Good

41–50

Strong

School Climate

Items:

SC1–SC10

10–20

Poor

21–30

Moderate

31–40

Positive

41–50

Highly Positive

Behavioural Adjustment

Items:

BA1–BA10

10–20

Poor Adjustment

21–30

Moderate

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31–40
Healthy

41–50
Excellent Adjustment



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APPENDIX G

QUESTIONNAIRE ADMINISTRATION PROTOCOL

Estimated Completion Time:
20–25 minutes

Administration Method:
Paper-and-pencil questionnaire administered in classroom settings.

Instructions to Participants:

- Read each statement carefully.
- Answer honestly.
- There are no right or wrong answers.
- Responses are anonymous.
- Participation is voluntary.
- Do not write your name on the questionnaire.
- Complete every question if possible.

Materials Required

- Questionnaire booklet
- Pencil or pen
- Participant information sheet
- Consent form

Data Handling

Completed questionnaires should be collected immediately after completion and stored securely.

All questionnaires should be coded numerically before statistical entry.

Personal identifying information should not be recorded.

APPENDIX H

ETHICAL PRINCIPLES FOLLOWED

The study was conducted according to internationally accepted ethical principles for psychological research.

The following ethical standards were observed:

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- Respect for participant autonomy.
- Voluntary participation.
- Right to withdraw without penalty.
- Confidentiality of responses.
- Anonymous data collection.
- Academic use only.
- Secure storage of research materials.
- Respect regardless of gender, ethnicity, religion or socioeconomic background.
- Honest reporting of findings.
- Compliance with accepted standards of psychological research ethics.



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APPENDIX H

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- Honest reporting of findings.
- Compliance with accepted standards of psychological research ethics.



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SUPPLEMENTARY STATISTICAL INTERPRETATION **AND** **THESIS FORMAT GUIDELINES**

University of Northwest

Bachelor of Psychology

Behaviour in Adolescents:
A Comprehensive Study of Psychological, Social and
Environmental Factors Affecting Adolescent Behaviour

Author

Gökben Gönültaş

September 30, 2014

1. INTRODUCTION

Scientific research should be evaluated not only according to its findings but also according to the quality of its methodological design, measurement procedures, statistical analyses, interpretation of results, and adherence to accepted academic writing standards. Proper statistical interpretation ensures that conclusions remain consistent with the evidence collected, while appropriate formatting enhances readability, transparency, and academic professionalism.

The following supplementary notes provide guidance regarding interpretation of behavioural research findings, statistical assumptions, reliability and validity, and thesis preparation standards suitable for undergraduate psychology research.

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2. INTERPRETING DESCRIPTIVE STATISTICS

Descriptive statistics provide an overview of the characteristics of the sample and the variables included in the study. They do not establish causal relationships but summarise the central tendency and variability of the observed data.

The mean represents the average response of participants and is useful for comparing variables measured on the same scale. Higher mean values generally indicate stronger agreement or higher levels of the construct being measured, provided that all items are coded in the same direction.

The standard deviation indicates how much individual responses vary around the mean. Lower standard deviation values suggest that participants responded relatively consistently, whereas larger values indicate greater variability among participants.

Frequency distributions describe how participants are distributed across categories such as gender, age, educational level, or family structure. Reporting frequencies together with percentages provides readers with a clearer understanding of the characteristics of the sample.

When interpreting descriptive statistics, researchers should avoid drawing conclusions regarding cause and effect. Descriptive analyses summarise observed patterns but cannot explain why such patterns occur.

3. INTERPRETING CORRELATION ANALYSIS

Correlation analysis examines the strength and direction of the relationship between two variables. Pearson's Product-Moment Correlation Coefficient (r) is commonly used when variables are measured on interval or ratio scales and assumptions of normality are reasonably satisfied.

Correlation coefficients range between -1.00 and $+1.00$.

Positive values indicate that both variables tend to increase together.

Negative values indicate that increases in one variable are associated with decreases in the other.

Values near zero indicate little or no linear relationship.

General interpretation guidelines include:

0.10–0.29: Weak relationship



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0.30–0.49: Moderate relationship

0.50–0.69: Strong relationship

0.70 and above: Very strong relationship

Researchers should remember that correlation does not imply causation. Even statistically significant correlations cannot establish that one variable directly causes changes in another because unmeasured variables may influence both.

4. INTERPRETING REGRESSION ANALYSIS

Multiple regression analysis estimates the extent to which several independent variables collectively explain variation in a dependent variable.

The coefficient of determination (R^2) indicates the proportion of variance explained by the regression model. Larger values suggest that the selected predictors account for a greater proportion of behavioural variation, although high explanatory power should not automatically be interpreted as evidence of causality.

Standardised beta coefficients allow comparison of the relative contribution of each predictor after accounting for differences in measurement units. Predictors with larger absolute beta values contribute more strongly to the model.

Regression findings should always be interpreted alongside theoretical considerations rather than statistical values alone. Variables demonstrating statistical significance should also be evaluated according to developmental psychology literature and previous empirical findings.

5. STATISTICAL SIGNIFICANCE

Statistical significance indicates the probability that an observed result occurred by random chance under the assumptions of the statistical model.

The most commonly accepted significance level is:

$$p < .05$$

This threshold suggests that there is less than a five percent probability that the observed result occurred by chance alone.

More stringent criteria include:

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$p < .01$

$p < .001$

Although statistical significance is important, researchers should avoid interpreting statistically significant findings as necessarily meaningful in practical or clinical terms. Small effects may become statistically significant in large samples, whereas meaningful effects may fail to reach statistical significance in smaller samples.

Consequently, statistical significance should always be interpreted together with theoretical relevance and practical importance.

6. EFFECT SIZE

Effect size reflects the magnitude of observed relationships independent of sample size.

Where appropriate, future studies should report effect size measures such as:

Cohen's d

Pearson's r

Eta Squared (η^2)

Partial Eta Squared

Odds Ratios

Reporting effect sizes enables readers to evaluate the practical importance of findings rather than relying exclusively on statistical significance.

7. RELIABILITY

Reliability refers to the consistency and stability of measurement.

Cronbach's Alpha remains one of the most frequently reported indicators of internal consistency.

General interpretation includes:

Below .60

Poor

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.60–.69

Questionable

.70–.79

Acceptable

.80–.89

Good

.90 and above

Excellent

High reliability suggests that questionnaire items consistently measure the same underlying construct.

8. VALIDITY

Validity concerns the extent to which an instrument measures what it intends to measure.

Several forms of validity should be considered.

Content Validity

Items adequately represent the theoretical construct.

Construct Validity

The instrument measures the intended psychological concept.

Criterion Validity

Measurements correspond with external indicators.

Face Validity

The instrument appears appropriate to experts and participants.

Researchers should discuss validity together with theoretical justification rather than relying solely upon numerical indicators.

9. INTERNAL VALIDITY

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Internal validity refers to confidence that observed relationships are not explained by uncontrolled variables.

Potential threats include:

Selection bias

Measurement error

Response bias

History effects

Maturation

Instrumentation changes

Researchers should acknowledge these limitations openly and explain procedures adopted to minimise their influence.

10. EXTERNAL VALIDITY

External validity concerns the extent to which findings may be generalised beyond the study sample.

Factors influencing generalisability include:

Sample characteristics

Sampling procedures

Cultural context

Educational systems

Socioeconomic conditions

Researchers should avoid extending conclusions beyond populations reasonably represented by the available evidence.

11. RESEARCH LIMITATIONS

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Every behavioural investigation contains limitations.

These may include restricted sample size, convenience sampling, self-report questionnaires, cultural differences, response bias, and the inability of cross-sectional designs to establish causal relationships.

Recognising limitations strengthens scientific credibility by demonstrating appropriate caution when interpreting findings.

12. RECOMMENDATIONS FOR FUTURE RESEARCH

Future investigations may strengthen the evidence base by:

Employing longitudinal research designs.

Including culturally diverse samples.

Using mixed quantitative and qualitative methods.

Investigating digital technology, social media, and emerging communication platforms.

Examining intervention programmes designed to improve adolescent psychological well-being.

Comparing findings across different educational systems and cultural settings.

13. UNIVERSITY OF NORTHWEST THESIS FORMAT

Unless a faculty-specific guide requires otherwise, the thesis should follow these presentation standards.

Paper Size:

A4

Margins:

Left: 4.0 cm

Right: 2.5 cm

Top: 2.5 cm

Bottom: 2.5 cm

Font:

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Times New Roman

Font Size:

12 pt (main text)

Footnotes:

10 pt

Line Spacing:

1.5 throughout the main text

Paragraph Alignment:

Justified

First-Line Indentation:

1.25 cm

Page Numbers:

Roman numerals for preliminary pages (i, ii, iii...)

Arabic numerals beginning with Chapter 1 (1, 2, 3...)

Chapter Titles:

Centered, bold, uppercase, 16 pt

Section Headings:

Bold, left aligned, 14 pt

Subheadings:

Bold, left aligned, 12 pt

Tables:

Number consecutively by chapter (e.g., Table 4.1, Table 4.2). Place the table title above the table. Cite the source below the table if adapted from another work.

Figures:

Number consecutively by chapter (e.g., Figure 4.1, Figure 4.2). Place the figure caption below the figure.

References:

Arrange alphabetically by the surname of the first author. Apply APA 6th Edition formatting consistently throughout the reference list.

Appendices:

Each appendix should begin on a new page and be identified with a capital letter (Appendix A, Appendix B, etc.), followed by a descriptive title.



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Language:

Academic English should be used throughout the thesis. Avoid colloquial expressions, contractions, and subjective language unless directly quoting participants.

14. FINAL REMARK

Scientific writing requires transparency, methodological rigour, and careful interpretation. Statistical analyses should always be discussed within the context of the research design, acknowledged limitations, and relevant psychological theory. Clear presentation, accurate referencing, and adherence to accepted formatting standards contribute substantially to the credibility and scholarly value of an undergraduate thesis.