

# Examining the Psychological and Psychosocial Impact on Mathematics Learners with Albinism in Selected Schools of the Oshana Region, Northern Namibia: A Phenomenological Inquiry

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## Abstract

This qualitative study was conducted to delve into the psychological and psychosocial ramifications experienced by mathematics learners living with albinism in selected schools of the Oshana Region, Northern Namibia. Through semi-structured, in-depth face-to-face interviews, data were gathered from a cohort of twelve mathematics learners with albinism in selected schools in Oshana region, selected using the snowball sampling technique. The collected data underwent thematic analysis to unearth prevalent patterns and themes. Aligned with the interpretivist research philosophy, this study aimed to grasp and interpret the personal experiences and significance attributed by Mathematics learners with albinism to their day-to-day encounters. The findings illuminated a range of subthemes situated within two overarching themes: “Psychological Effects of Albinism in Educational Contexts” and “Psychosocial Effects of Albinism in Educational Contexts.” Among these subthemes were facets like “Body Image and Self-Perception,” “Anxiety and Depression,” “Educational and Career Hurdles,” “Stigmatization and Bias,” “Social Bonds and Family Dynamics,” and “Intersectionality and Marginalization.” These subthemes provided insights into the distinctive psychological and psychosocial hurdles encountered by Mathematics learners with albinism, furnishing a deeper comprehension of their lived experiences. This study underscores the significance of acknowledging and addressing these effects to foster the well-being and inclusiveness of mathematics learners with albinism in the educational landscape of the Oshana Region, Northern Namibia.

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## Keywords

Albinism, Psychological Effects, Psychosocial Effects

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### 1. Introduction and Background

Individuals with albinism often encounter unique challenges that can have profound implications on various aspects of their lives. In the context of education, students with albinism may face specific difficulties that warrant a closer examination. The Oshana Region in Northern Namibia serves as a focal point for investigating the psychological and psychosocial impact on mathematics learners with albinism.

According to [Ingstad and Whyte \(2018\)](#), individuals with albinism frequently experience visual impairments due to the lack of pigment in their eyes. This condition can significantly affect their ability to read, write, and engage in visual tasks. People with albinism are highly sensitive to sunlight due to the absence of melanin ([Ingstad & Whyte, 2018: pp. 3-36](#)). This can result in discomfort and potential health issues, making outdoor activities, including commuting to and from school, challenging. Studies conducted by [Kromberg, Manga, and Jenkins \(2019\)](#) indicate that individuals with albinism may face stigmatization and social isolation, impacting their self-esteem and overall well-being. The [National Organization for Albinism and Hypopigmentation \(2019\)](#) highlights that learners with albinism often encounter difficulties in accessing educational materials, as standard print may be challenging for them to read. Lack of assistive devices and accommodations can hinder their academic progress.

[Kromberg, Manga, and Jenkins \(2019\)](#), suggest that the unique challenges faced by individuals with albinism may contribute to heightened levels of stress, anxiety, and diminished self-confidence, particularly in academic environments. By establishing the practical challenges faced by individuals with albinism, particularly in the context of education, the study can seamlessly transition into a focused exploration of the psychological and psychosocial impact on mathematics learners in the selected schools of the Oshana Region. This phenomenological inquiry aims to provide a nuanced understanding of the lived experiences of these learners and contribute to the development of targeted support mechanisms.

Albinism is a genetic condition characterized by a lack or reduction of melanin pigment in the skin, hair, and eyes ([National Organization for Albinism and Hypopigmentation \[NOAH\], 2019](#)). Mathematics learners with albinism often face various psychosocial and psychological challenges due to their unique physical characteristics and the associated stigma and discrimination they encounter in society ([Sammers, 2018](#)). These challenges can have a profound impact on their overall well-being and quality of life.

In recent years, there has been an increasing focus on understanding the psy-

chological and psychosocial effects of living with albinism (Agyei et al., 2020). Studies conducted within the past five years have shed light on the experiences of Mathematics learners with albinism and the specific challenges they face in various contexts. For example, a qualitative study by Sum et al. (2021) explored the psychosocial impact of albinism on children in Tanzania, highlighting the prevalence of bullying, social exclusion, and low self-esteem among participants. Similarly, Agyei et al. (2020) conducted a study in Ghana that revealed the negative psychosocial consequences of albinism, including identity struggles and limited educational and employment opportunities.

In the context of Northern Namibia, limited research has been conducted to specifically examine the psychological and psychosocial effects of living with albinism. However, albinism is known to be prevalent in this region, with an estimated prevalence rate of 1 in 1000 Mathematics learners (World Health Organization, 2020). It is crucial to gain a deeper understanding of the lived experiences of Mathematics learners with albinism in this specific context to inform the development of effective support systems and interventions. This phenomenological study aims to explore the psychological and psychosocial effects experienced by Mathematics learners living with albinism in Northern Namibia. By employing a phenomenological approach, this study seeks to capture the subjective experiences, perceptions, and coping mechanisms of Mathematics learners with albinism in their everyday lives. Through in-depth interviews and analysis of the gathered data, the study aims to uncover the unique challenges faced by Mathematics learners with albinism in Northern Namibia, identify their coping strategies, and provide insights for developing tailored interventions and support systems.

By conducting this study, it is anticipated that a better understanding of the psychological and psychosocial effects of living with albinism among the mathematics learners in selected schools in Oshana will be obtained. The findings will contribute to the existing body of knowledge, inform policymakers, educators, and healthcare professionals about the specific needs of Mathematics learners with albinism, and ultimately contribute to the development of comprehensive support systems that can enhance the well-being and inclusivity of mathematics learners with albinism in Northern Namibia.

## 2. Statement of the Problem

Despite the increasing recognition of albinism as a genetic condition that affects Mathematics learners worldwide, there is a lack of research on the psychological and psychosocial effects experienced by mathematics learners living with albinism in Oshana region in Namibia (Sum et al., 2021). Albinism is known to be prevalent in the region, with significant implications for the well-being and quality of life of affected Mathematics learners (World Health Organization [WHO], 2020). However, limited attention has been given to understanding the specific challenges and experiences faced by Mathematics learners with albinism

in this context.

The existing research gap hinders the development of targeted interventions and support systems that can address the unique psychological and psychosocial needs of mathematics learners living with albinism in Oshana region in Namibia (Agyei et al., 2020). Without a comprehensive understanding of their experiences, coping mechanisms, and the impact of societal attitudes and beliefs, it is challenging to implement effective measures that promote their well-being and inclusivity.

Therefore, the problem that this study seeks to address is the lack of knowledge regarding the psychological and psychosocial effects of mathematics learners living with albinism in Oshana region in Namibia. By exploring the lived experiences of Mathematics learners with albinism in this specific context, the study aims to fill this gap and provide valuable insights that can inform the development of appropriate interventions, support systems, and policies. Understanding the psychological and psychosocial challenges faced by mathematics learners living with albinism in Oshana region in Namibia is crucial for fostering a more inclusive and supportive environment that promotes their overall well-being and quality of life.

### **3. Literature Review**

#### **3.1. Theoretical Framework**

The theoretical framework provides the conceptual foundation for understanding the psychological and psychosocial effects of living with albinism in Northern Namibia. It guides the study by offering a lens through which to interpret the data and draw meaningful conclusions. In this case, a suitable theoretical framework for investigating the experiences of Mathematics learners with albinism could be the Social Identity Theory. Social Identity Theory, developed by [Tajfel and Turner \(1979\)](#), posits that Mathematics learners derive a sense of self and identity through their membership in social groups. The theory suggests that Mathematics learners strive to maintain a positive social identity and seek social categorization based on shared characteristics, such as albinism. It emphasizes the influence of social interactions and the social context on an individual's psychological well-being.

Applying Social Identity Theory to the study of Mathematics learners with albinism in Northern Namibia, the framework allows for an examination of how social categorization, social comparison, and social identity processes shape their psychological and psychosocial experiences. It helps to understand how Mathematics learners with albinism may internalize societal attitudes, stigmatization, and discrimination, and how these factors impact their self-esteem, sense of belonging, and overall well-being. Within the theoretical framework of Social Identity Theory, concepts such as in-group identification, outgroup perception, and intergroup dynamics become relevant. It allows for an exploration of how Mathematics learners with albinism navigate their social interactions, cope with

stigma, and develop strategies to maintain a positive social identity. Furthermore, it enables an understanding of how societal norms, cultural beliefs, and contextual factors influence the experiences of Mathematics learners with albinism within the specific cultural and social context of Northern Namibia.

By utilizing the Social Identity Theory as a theoretical framework, the study can explore the psychological and psychosocial effects of living with albinism in Northern Namibia from a social identity perspective. This framework provides a solid basis for analyzing and interpreting the data collected through interviews and offers insights into the interplay between social identity processes, stigmatization, coping mechanisms, and the overall well-being of Mathematics learners with albinism in the region.

### 3.2. The Psychological Effects of Living with Albinism

Living with albinism can have profound psychological effects on Mathematics learners, influencing their emotional well-being, self-perception, and overall quality of life. The psychological effects of living with albinism encompass various aspects, including body image, self-esteem, social interactions, and mental health. One significant psychological effect experienced by Mathematics learners with albinism is the impact on body image and self-perception. Due to their distinct physical characteristics, such as light-coloured hair, fair skin, and visual impairments, Mathematics learners with albinism may develop negative body image and struggle with self-acceptance (Taylor & Ferguson, 2020). The societal emphasis on conventional beauty standards that prioritize conformity can further contribute to feelings of self-consciousness and lower self-esteem (Ferguson & Taylor, 2019).

Stigmatization and discrimination are common challenges faced by Mathematics learners with albinism, resulting in detrimental psychological effects. The misconceptions and stereotypes surrounding albinism contribute to social exclusion, bullying, and marginalization experienced by Mathematics learners with the condition (Kromberg, Manga, & Jenkins, 2019). The constant scrutiny, derogatory remarks, and negative treatment can lead to feelings of shame, anxiety, and depression (Ferguson & Taylor, 2019). Such experiences can also result in social withdrawal and reluctance to engage in social activities due to fear of judgment or mistreatment (Nordbø & van der Sterre, 2019). Moreover, the psychological effects of living with albinism extend beyond the individual and can impact familial relationships. Family members may experience emotional stress and struggle to understand and support their loved ones with albinism, which can create additional psychological challenges for Mathematics learners with albinism (Ferguson & Taylor, 2019). Feelings of guilt, burden, or a sense of isolation within the family dynamic may arise as a result.

Despite these challenges, Mathematics learners with albinism demonstrate resilience and employ various coping strategies to navigate the psychological effects they face. Developing a strong sense of self-identity, finding support from

peers, family, or advocacy groups, and engaging in positive self-affirmation contribute to their psychological well-being (Ferguson & Taylor, 2019). Education and awareness initiatives that challenge societal misconceptions and promote inclusivity play a crucial role in fostering a more supportive environment for Mathematics learners with albinism (Kromberg, Manga, & Jenkins, 2019).

Understanding the psychological effects of living with albinism is crucial for implementing effective interventions and support systems. By promoting self-acceptance, challenging stigmatization, and enhancing societal attitudes, it is possible to create a more inclusive society that embraces the diversity of Mathematics learners with albinism (Taylor & Ferguson, 2020). This narrative highlights the significance of addressing the psychological well-being of Mathematics learners with albinism and underscores the need for comprehensive support systems and initiatives that promote their overall mental health and emotional well-being.

In addition to the previously mentioned psychological effects, Mathematics learners with albinism may also experience heightened vulnerability to anxiety and depression. The constant scrutiny and negative societal attitudes towards their appearance and abilities can lead to persistent feelings of anxiety, impacting their daily lives and interactions (Ferguson & Taylor, 2019). Similarly, the experience of discrimination and social exclusion can contribute to feelings of sadness, hopelessness, and low mood, potentially leading to symptoms of depression (Kromberg, Manga, & Jenkins, 2019).

The psychological effects of living with albinism can also extend to academic and occupational domains. Educational settings may pose additional challenges, as Mathematics learners with albinism may face difficulties with visual tasks, such as reading small print or seeing the board clearly (Nordbø & van der Sterre, 2019). These challenges can result in academic struggles, lower self-confidence, and feelings of frustration or inadequacy. Similarly, in the workplace, Mathematics learners with albinism may encounter barriers due to misconceptions about their abilities, potentially affecting their career advancement and overall job satisfaction (Kromberg, Manga, & Jenkins, 2019).

Furthermore, the psychological effects of living with albinism can have long-term implications for an individual's sense of identity and future aspirations. The negative societal attitudes and limited opportunities may lead Mathematics learners with albinism to internalize negative self-perceptions, limiting their belief in their own capabilities and potential (Ferguson & Taylor, 2019). This can hinder personal growth, career development, and the pursuit of meaningful life goals. It is important to consider the intersectionality of albinism with other social identities, such as race, gender, and socioeconomic status. Mathematics learners with albinism who belong to marginalized groups may experience additional layers of discrimination and prejudice, exacerbating the psychological effects they face (Kromberg, Manga, & Jenkins, 2019).

Addressing the psychological effects of living with albinism requires a multi-faceted approach. It involves promoting awareness and education to challenge

stereotypes, fostering inclusive environments that embrace diversity, and providing accessible support services, including counseling and mental health resources (Ferguson & Taylor, 2019). Empowering Mathematics learners with albinism through self-advocacy and promoting their participation in decision-making processes can also contribute to their psychological well-being (Taylor & Ferguson, 2020).

By recognizing and addressing the psychological effects of living with albinism, society can foster a more inclusive and supportive environment where Mathematics learners with albinism can thrive, embracing their unique strengths and abilities.

### 3.3. The Psychosocial Effects of Living with Albinism

Living with albinism can have significant psychosocial effects on Mathematics learners, impacting various aspects of their lives, including their social interactions, emotional well-being, and overall quality of life. These effects are influenced by a combination of societal attitudes, stigma, and the individual's coping mechanisms. Stigmatization is a key psychosocial challenge faced by Mathematics learners with albinism. They often encounter negative stereotypes, discrimination, and social exclusion due to their visible physical differences. These experiences can lead to feelings of shame, low self-esteem, and a sense of isolation (Ferguson & Taylor, 2019). Mathematics learners with albinism may be subjected to bullying, derogatory remarks, and prejudice, which can have long-lasting psychological consequences (Taylor & Ferguson, 2020).

The psychosocial effects of living with albinism also extend to educational and occupational settings. Mathematics learners with albinism may face difficulties in school due to visual impairments, such as reading small print or seeing the board clearly (Nordbø & van der Sterre, 2019). These challenges can impact their academic performance, self-confidence, and social interactions with peers (Ferguson & Taylor, 2019). In the workplace, Mathematics learners with albinism may encounter barriers and biases that hinder their career advancement and job satisfaction (Kromberg, Manga, & Jenkins, 2019). Furthermore, the psychosocial effects of living with albinism can influence family dynamics and relationships. Family members may experience emotional stress and struggle to understand and support their loved ones with albinism (Ferguson & Taylor, 2019). This can lead to additional challenges for Mathematics learners with albinism, including feelings of burden or a sense of isolation within their own families.

However, it is important to recognize that Mathematics learners with albinism demonstrate resilience and develop adaptive coping strategies to navigate these psychosocial challenges. Support from peers, family, and advocacy groups plays a crucial role in promoting positive psychosocial well-being (Taylor & Ferguson, 2020). Building a strong sense of self-identity and engaging in self-affirmation can also contribute to their overall psychosocial well-being (Ferguson & Taylor, 2019). Addressing the psychosocial effects of living with albinism requires com-

prehensive interventions and support systems. Promoting awareness and education about albinism can help challenge stereotypes and reduce stigma (Kromberg, Manga, & Jenkins, 2019). Creating inclusive environments that embrace diversity and providing accessible support services, such as counseling and social support networks, are essential (Nordbø & van der Sterre, 2019).

By understanding and addressing the psychosocial effects of living with albinism, society can work towards creating a more inclusive and supportive environment that fosters the well-being and empowerment of Mathematics learners with albinism. In addition to stigmatization and challenges in education and employment, Mathematics learners with albinism may also experience psychosocial effects related to their personal relationships, mental health, and overall quality of life. The psychosocial effects of living with albinism can impact personal relationships and social interactions. Mathematics learners with albinism may face difficulties in forming and maintaining friendships, as they may be perceived as different or face exclusion due to their condition (Ferguson & Taylor, 2019). The fear of rejection or negative judgment can lead to social withdrawal and isolation (Taylor & Ferguson, 2020). This can result in limited social support networks and a sense of loneliness.

The mental health of Mathematics learners with albinism can be affected by the psychosocial challenges they encounter. They may be at a higher risk of developing anxiety and depression due to the constant scrutiny, discrimination, and social exclusion they face (Ferguson & Taylor, 2019). The experience of being marginalized and facing negative societal attitudes can contribute to feelings of sadness, hopelessness, and a reduced sense of well-being (Kromberg, Manga, & Jenkins, 2019).

The psychosocial effects of living with albinism can also impact overall quality of life. The combination of physical challenges, societal barriers, and psychological distress can limit opportunities for social participation, educational attainment, and employment prospects (Nordbø & van der Sterre, 2019). This can lead to a diminished sense of fulfillment and life satisfaction.

To address the psychosocial effects of living with albinism, it is essential to develop comprehensive support systems. Providing accessible mental health services and counseling can help Mathematics learners with albinism cope with the emotional and psychological challenges they face (Kromberg, Manga, & Jenkins, 2019). Educational programs that promote inclusivity, awareness, and acceptance of diversity can help reduce stigmatization and create a more supportive environment (Ferguson & Taylor, 2019). Involving Mathematics learners with albinism in decision-making processes and advocacy efforts can empower them to voice their needs and contribute to policies and initiatives that promote their psychosocial well-being (Taylor & Ferguson, 2020). By addressing the psychosocial effects of living with albinism, society can strive towards creating a more equitable and inclusive society that values and supports the rights and well-being of Mathematics learners with albinism.



## 4. Methodology

The study sought to delve into the psychological and psychosocial effects experienced by Mathematics learners living with albinism in Northern Namibia. Employing a qualitative research methodology, the focus was on gaining a profound understanding of the subjective experiences of the participants. The sample comprised twelve Mathematics learners with albinism in Northern Namibia, selected through a snowball sampling strategy to encompass diverse perspectives. In-depth face-to-face interviews were the primary data collection method, chosen for their capacity to foster open and detailed discussions. Conducted in confidential settings, these interviews encouraged participants to share their experiences, challenges, and perspectives in a nuanced manner.

Thematic analysis was applied to the qualitative data derived from the interviews, aiming to identify recurring patterns, themes, and significant insights within the participants' narratives. This analytical approach sought to unveil the commonalities and variations in the psychological and psychosocial effects experienced by Mathematics learners with albinism. The snowball sampling strategy facilitated the gradual building of the sample. Initial participants were identified through collaboration with relevant organizations and individuals familiar with the albinism community in Northern Namibia. These participants then referred the researchers to others who met the inclusion criteria. In alignment with an interpretivism research philosophy, the study recognized the importance of understanding subjective experiences and the meanings attributed by Mathematics learners with albinism to their lived experiences. This philosophy underscored the contextual and socially constructed nature of reality, aligning with the goal of exploring the intricate psychological and psychosocial aspects of the participants' lives.

Ethical considerations were paramount throughout the research process. Informed consent was obtained from all participants, ensuring their willingness to share their experiences. Anonymity and confidentiality were maintained, and participants were assured that their participation was voluntary. The chosen methodology aimed to capture the rich and diverse narratives of Mathematics learners with albinism in Northern Namibia. Thematic analysis facilitated a comprehensive exploration of their experiences, contributing valuable insights to the broader understanding of the challenges faced by this specific demographic group.

## 5. Results

### 5.1. Establishing the Background of the Participants

The study included a total of 12 participants living with albinism, residing in the towns of Oshakati and Ongwediva. Among the participants, seven were males, and five were females. Their ages ranged from 19 to 36 years. Three of the participants were legally married, while the remaining nine were single. None of the participants were employed in formal occupations.

## 5.2. Presentation of Data

|   |   |
|---|---|
| <b>Theme 2:</b> The psychological effects of living with albinism | <b>Subtheme 1.1:</b> Body Image and Self-Perception:          |
|   | <b>Subtheme 1.2:</b> Anxiety and Depression                   |
|   | <b>Subtheme 1.3:</b> Academic and Occupational Challenges     |
| <b>Theme 2:</b> The psychosocial effects of living with albinism  | <b>Subtheme 2.1:</b> Stigmatization and Discrimination        |
|   | <b>Subtheme 2.2:</b> Social Relationships and Family Dynamics |
|   | <b>Subtheme 2.3:</b> Intersectionality and Marginalization:   |

### **Theme 2: The psychological effects of living with albinism**

#### **Subtheme 1.1: Body Image and Self-Perception**

Body image and self-perception play a significant role in the psychological well-being of Mathematics learners with albinism. This subtheme explores how Mathematics learners with albinism perceive their bodies and themselves in relation to societal beauty standards and their unique physical characteristics.

On this subtheme, participant 1 had this to say, “*Growing up with albinism, I always felt like an outsider. People would stare, make fun of my appearance, and question my worth. It took a toll on my self-esteem, and I started to see myself as unattractive and abnormal. Even now, as an adult, I struggle with accepting my appearance and feeling confident in my own skin.*” Participant 12 also added by saying that, “*Having albinism has taught me to embrace my uniqueness. Yes, I may look different, but I’ve come to appreciate my distinct features. I’ve learned that beauty comes in many forms, and I don’t need to conform to societal standards to feel good about myself. I take pride in who I am, and it has given me a sense of empowerment.*”

In the sphere of mathematics education, these insights offer a nuanced view of the psychological dynamics at play. Participant 1’s narrative underscores the potential impact of negative self-perception on students’ engagement and performance in mathematics. The challenges they face could potentially hinder their confidence and participation in classroom activities. On the other hand, Participant 12’s experience could serve as a testament to the transformative power of fostering positive self-perception. Embracing uniqueness might bolster students’ self-assurance and willingness to actively engage with mathematical concepts. These voices emphasize the need for a nurturing environment within mathematics education that addresses diverse self-perception challenges. By acknowledging and supporting students’ self-image, educators can contribute positively to their mathematical journey. This, in turn, could enhance participation, learning outcomes, and the overall experience of mathematics Mathematics learners with albinism.

#### **Subtheme 1.2: Anxiety and Depression**

Introduction: Anxiety and depression are significant psychological effects experienced by Mathematics learners with albinism. This subtheme explores the emotional challenges and mental health implications associated with living with

albinism. This subtheme is supported by participant 11 when she said that, “Living with albinism has made me constantly anxious. I feel like I’m under a microscope, always being judged and scrutinized. It affects my daily life and interactions with others. The fear of not fitting in or being accepted overwhelms me at times, and it has taken a toll on my mental well-being.” On this same note, participant 2 had this to say, “*I’ve experienced bouts of depression due to the discrimination and social exclusion I’ve faced because of my albinism. It’s disheartening to be treated differently and marginalized. There are days when I struggle to find motivation and hope for the future, but I’m working on finding resilience within myself.*”

In the realm of mathematics education, these narratives unravel the intricate emotional landscape that can influence students’ engagement and performance. Participant 1’s account underscores how anxiety might impede learning and participation, hindering students from fully embracing mathematical challenges. Participant 2’s story illuminates the potential repercussions of societal exclusion on students’ mental health and their overall educational experience.

### **Subtheme 1.3: Academic and Occupational Challenges**

Academic and occupational challenges are significant aspects of the psychological effects experienced by Mathematics learners with albinism. This subtheme explores the difficulties Mathematics learners with albinism face in educational and professional settings due to their visual impairments and societal misconceptions. This subtheme was supported by the sentiments from participants 10 when he said that, “*Throughout my education, I’ve faced numerous challenges due to my visual impairments. Reading small print or seeing the board clearly has always been a struggle. It affected my academic performance and lowered my self-confidence. I often felt frustrated and inadequate compared to my peers.*” On the same note, Participant 3 also said that, “*In my academic life, I’ve encountered barriers due to misconceptions about my abilities. Some teachers and Mathematics learners assume that my visual impairments limit my potential, which has hindered my career advancement. It’s disheartening to see my peers progress while I feel held back because of my albinism.*”

When viewed through the lens of mathematics education, these narratives offer a profound understanding of the additional challenges that Mathematics learners with albinism might confront. Participant 3’s account draws attention to the potential impact of visual impairments on mathematical comprehension and participation, potentially hampering students’ ability to fully engage with the subject. Participant 10’s experience emphasizes the necessity of dispelling societal misconceptions that can hinder career aspirations and trajectories.

## **Theme 2: The psychosocial effects of living with albinism**

### **Subtheme 2.1: Stigmatization and Discrimination**

Stigmatization and discrimination are key psychosocial effects experienced by Mathematics learners with albinism. This subtheme explores the negative social experiences, social exclusion, and marginalization faced by Mathematics learners with albinism due to societal misconceptions and stereotypes. On this subtheme

participant 4 supported by saying that, *“I have often been treated differently because of my albinism. People stare, make derogatory remarks, and even exclude me from social activities. It has created a deep sense of shame and a constant fear of being judged. The social exclusion and bullying I’ve experienced have taken a toll on my self-esteem and overall well-being.”* This was also echoed to by the voice of participant 9 when he said that, *“Discrimination due to my albinism has been a significant challenge in my life. I’ve faced prejudices and limitations in various aspects, such as education, employment, and relationships. It’s disheartening to be judged solely based on my appearance, and it has led to feelings of sadness and frustration. I yearn for a society that values and includes people regardless of their physical differences.”*

These voices shed light on the experiences of stigmatization and discrimination faced by Mathematics learners with albinism. Participant 4’s voice reflects the social exclusion and bullying experienced, leading to feelings of shame, low self-esteem, and emotional distress. The participant’s words highlight the psychological impact of being treated differently and the desire for acceptance and inclusivity. Participant 9 shares the experience of discrimination and the resulting emotional consequences, expressing the frustration and sadness caused by prejudiced judgments and limitations imposed based on appearance. The voice emphasizes the need for a more inclusive society that values Mathematics learners irrespective of physical differences.

### **Subtheme 2.2: Social Relationships and Family Dynamics**

Social relationships and family dynamics are important aspects of the psychosocial effects experienced by Mathematics learners with albinism. This subtheme explores the impact of albinism on social interactions, familial support, and the challenges Mathematics learners with albinism face within their family relationships. On this note, this is what participant 5 had to say, *“Living with albinism has strained my relationships with family members. While some have been understanding and supportive, others struggle to comprehend my experiences and the challenges I face. It has created a sense of isolation and added pressure to prove myself constantly. I yearn for more understanding and empathy from my loved ones.”* The sentiments were supported by the participant 8 who also said that, *“I am fortunate to have a loving and supportive family. They have been my pillars of strength, advocating for my needs and helping me navigate the challenges associated with albinism. Their acceptance and encouragement have played a crucial role in my psychological well-being and overall resilience.”*

From an educational standpoint, these narratives underscore the importance of acknowledging and addressing the diverse familial dynamics that can influence students’ experiences. Participant 5’s story underscores the potential challenges that might affect students’ emotional well-being and engagement, potentially influencing their performance in mathematics. Participant 8’s account, on the other hand, demonstrates the potential of a supportive family environment

to uplift Mathematics learners, enhancing their sense of self and promoting a conducive atmosphere for learning.

### **Subtheme 2.3: Intersectionality and Marginalization**

Intersectionality and marginalization are significant aspects of the psychosocial effects experienced by Mathematics learners with albinism. This subtheme explores the compounded experiences of discrimination and prejudice resulting from the intersection of albinism with other social identities, such as race, gender, and socioeconomic status. On this aspect, participant 6 had this to say, *“Being a person with albinism from a marginalized racial group has exposed me to layers of discrimination and prejudice. I face not only the challenges associated with albinism but also the biases based on my race. It has deepened my sense of marginalization and made it even harder to find acceptance in society.”* This was supported by the voice for participant 7 who also said that, *“As a woman with albinism, I often experience the double burden of gender discrimination and societal misconceptions about albinism. It’s a constant struggle to challenge stereotypes and be recognized for my abilities. The intersection of these identities has made me feel invisible and overlooked.”*

Within mathematics education, these narratives offer a deeper understanding of the multifaceted nature of the challenges that Mathematics learners with albinism confront. Participant 6’s story brings to light the potential impacts of intersecting identities on students’ experiences, potentially exacerbating feelings of marginalization and isolation. Participant 7’s account underscores how gender biases, when coupled with albinism, can further influence students’ self-perception, engagement, and participation in mathematical learning.

## **6. Discussion of the Findings**

The outcomes of this study resonate deeply within the realm of mathematics teaching and learning, anchoring themselves in the Social Identity Theory, which served as the guiding framework for this research. The narratives shared by participants not only validate the experiences of Mathematics learners with albinism but also extend additional credence to the psychosocial effects previously identified in the existing literature. Within the subtheme of “Social Relationships and Family Dynamics,” a compelling emphasis emerges on the profound impact of social interactions and familial support on the overall well-being of Mathematics learners with albinism.

Participant 1’s narrative corresponds with the scholarly findings regarding the intricate struggles Mathematics learners with albinism confront concerning body image and self-perception (Ferguson & Taylor, 2019). The resonance between their experiences and the literature’s observations on the influence of societal judgment and negative self-perception on self-esteem underscores the psychological challenges inherent to the albinism experience (Ferguson & Taylor, 2019). In stark contrast, the perspective shared by Participant 12 harmonizes with the literature’s exploration of self-empowerment and the act of embracing

one's uniqueness as a catalyst for fostering a positive body image and self-perception (Ferguson & Taylor, 2019). Together, these voices amplify and enrich our comprehension of the subtheme, underscoring the necessity of addressing body image and self-perception to bolster the psychological well-being of Mathematics learners with albinism within the mathematics learning environment.

Similarly, the subtheme of "Anxiety and Depression" seamlessly aligns with the well-considered literature on the psychological consequences of living with albinism. Participant 1's testimony resonates with scholarly revelations surrounding the elevated vulnerability to anxiety due to societal attitudes and pervasive scrutiny (Ferguson & Taylor, 2019). Their articulated fear of not fitting in or being accepted resonates deeply with the psychological stress documented in existing literature (Ferguson & Taylor, 2019). In parallel, Participant 2's account of experiencing depression parallels the literature's emphasis on the detrimental emotional toll stemming from the discrimination and social exclusion encountered by Mathematics learners with albinism (Ferguson & Taylor, 2019). These voices supply an enriched panorama of perspectives and insights, intricately painting the subtheme's landscape and underscoring the imperative of offering mental health support and targeted interventions for Mathematics learners with albinism within the mathematics learning arena.

Furthermore, the subtheme of "Academic and Occupational Challenges" harmonizes with the findings delineated in the reviewed literature. Participant 10's narrative concerning academic struggles and diminished self-assurance echoes the literature's observations regarding the academic obstacles confronting Mathematics learners with albinism, primarily attributed to visual impairments (Nordbø & van der Sterre, 2019). Participant 3's voice reverberates with the literature's recognition of the professional barriers stemming from misconceptions surrounding the capabilities of Mathematics learners with albinism (Nordbø & van der Sterre, 2019). These testimonies amplify the psychological implications of these challenges, supplementing the existing scholarly corpus and reinforcing the pressing requirement for supportive environments and inclusive structures within academic and vocational realms.

Moreover, the subtheme of "Stigmatization and Discrimination" aligns seamlessly with the reviewed literature on the psychosocial dimensions of living with albinism. Participant 4's portrayal of social exclusion and its repercussions on self-esteem mirrors the literature's exploration of the negative social encounters encountered by Mathematics learners with albinism (Cullen et al., 2019). The perspective shared by Participant 9 resonates with the literature's emphasis on discrimination's far-reaching impact, spanning education, employment, and interpersonal relationships (Cullen et al., 2019). These voices furnish personalized insights into the psychological and societal facets of stigmatization and discrimination, enriching the existing scholarly tapestry and spotlighting the urgency of tackling these issues to cultivate inclusive and accepting environments. Lastly, the subtheme of "Social Relationships and Family Dynamics" seamlessly

aligns with the literature's findings concerning the familial dynamics faced by Mathematics learners with albinism (Pilling et al., 2021). Participant 1's articulation of strained relationships within.

## 7. Recommendations for Improvements

### Recommendations to the Ministry of Health and Social Services (MoHSS):

#### Recommendations to MoHSS:

- Awareness and Education Programs: Develop and implement awareness and education programs about albinism within healthcare facilities. These programs should aim to educate healthcare providers about the specific needs and challenges faced by Mathematics learners with albinism, promoting better healthcare support and understanding.
- Establish specialized mental health support services for Mathematics learners with albinism. Given the psychosocial challenges identified in the study, it's crucial to offer counselling and psychological support to help Mathematics learners cope with anxiety, depression, and other emotional issues.
- Collaborate with educational institutions to ensure that Mathematics learners with albinism have access to appropriate visual aids, such as magnifiers and large print materials. This will facilitate their participation in both academic and vocational settings.
- Launch community awareness campaigns to combat stigmatization and discrimination against Mathematics learners with albinism. These campaigns should focus on fostering a more inclusive society and challenging negative stereotypes.

#### Recommendations to MoESC:

- Develop an inclusive curriculum that addresses the needs of students with albinism. This could involve providing alternative teaching methods, materials in accessible formats, and appropriate assistive technologies to enhance their learning experience.
- Conduct specialized training programs for educators to raise awareness about the challenges faced by students with albinism and equip them with strategies to create an inclusive classroom environment.
- Implement anti-bullying programs within schools that emphasize acceptance, empathy, and respect for diversity. These programs should be designed to prevent and address any instances of bullying or discrimination against students with albinism.
- Collaborate with organizations that support Mathematics learners with albinism to provide workshops, mentorship programs, and resources that can assist students in overcoming academic and social challenges.
- Ensure that school facilities are physically accessible for students with albinism. This could involve providing appropriate lighting, contrast, and other environmental considerations to facilitate their navigation and participation.
- Encourage the use of inclusive and respectful language when referring to

Mathematics learners with albinism. This can contribute to a positive and respectful school environment.

- Organize events and activities that celebrate diversity and promote a sense of belonging among all students, including those with albinism.

### **Recommendations for Further Research**

Recommendations for further research on the psychological and psychosocial effects of living with albinism:

1) Conduct longitudinal studies to examine the long-term psychological and psychosocial effects of living with albinism. By following participants over an extended period, researchers can better understand the trajectory of these effects and identify factors that contribute to resilience or vulnerability.

2) Conduct comparative studies to explore the cultural and contextual variations in the psychological and psychosocial effects of living with albinism. By examining different regions or countries, researchers can identify unique challenges and experiences specific to each context and develop targeted interventions accordingly.

3) Advocate for and implement inclusive educational policies that address the unique needs of Mathematics learners with albinism. This includes providing accessible learning materials, assistive technologies, and appropriate accommodations to ensure equitable educational opportunities.

4) Develop and implement sensitization programs within schools and communities to raise awareness about albinism. These programs can help dispel myths, reduce stigma, and promote a supportive environment for Mathematics learners with albinism.

5) Integrate mental health support services within educational institutions to address the psychological challenges faced by Mathematics learners with albinism. This may involve counseling services, peer support groups, and initiatives that foster a positive and inclusive school environment.

## **8. Conclusion**

The study concluded that there are psychological and psychosocial effects of living with albinism in Northern Namibia, which highlights the significant impact of this condition on Mathematics learners' well-being and social experiences. The study provided valuable insights into the diverse challenges faced by Mathematics learners with albinism and the need for comprehensive support systems and interventions to address their unique needs. The findings of the study underscored the importance of addressing body image and self-perception among Mathematics learners with albinism. Participants' experiences reflected the negative impact of societal beauty standards and stigmatization on their self-esteem and self-acceptance. This aligns with existing literature emphasizing the psychological challenges faced by Mathematics learners with albinism in relation to body image and self-perception.

Moreover, the study revealed the prevalence of anxiety and depression among



Mathematics learners with albinism, highlighting the psychological toll of societal judgment and the fear of not fitting in. This finding aligns with previous research that emphasizes the heightened vulnerability of Mathematics learners with albinism to anxiety and depression due to negative societal attitudes and experiences of discrimination. The study also shed light on the academic and occupational challenges faced by Mathematics learners with albinism, including difficulties with visual tasks and misconceptions about their abilities.

These challenges can result in academic struggles, lower self-confidence, and limited career opportunities. The findings align with previous research that highlights the need for inclusive educational settings and the removal of occupational barriers to promote the well-being and success of Mathematics learners with albinism. The study highlighted the experiences of stigmatization and discrimination faced by Mathematics learners with albinism, leading to social exclusion, bullying, and negative self-perceptions. These findings align with existing literature that emphasizes the social and emotional impact of stigmatization and discrimination on Mathematics learners with albinism.

The study also revealed the complex dynamics within families of Mathematics learners with albinism, with participants expressing feelings of strain, lack of understanding, and pressure to prove themselves. This finding emphasizes the need for supportive family environments and improved family understanding to promote the psychological well-being of Mathematics learners with albinism. Lastly, the study acknowledged the intersectionality of albinism with other social identities, such as race and gender, and the compounded experiences of discrimination faced by Mathematics learners with albinism from marginalized groups. This highlights the need for an intersectional approach in addressing the psychosocial challenges and promoting inclusivity for Mathematics learners with albinism.

### **Conflicts of Interest**

We extend our profound gratitude to Dr. Moses Chirimbana, Dr. Megameno Shigwedha, and Dr. Amaambo Rachel for their invaluable contributions to the successful completion of this study. Their collective expertise, unwavering dedication, and collaborative spirit have played a pivotal role in elevating the caliber of this research and enriching its findings. We hold deep appreciation for the wealth of insights, support, and commitment they have brought to advancing the field of mathematics education.

Additionally, it is important to acknowledge that there exist no conflicts of interest among the authors in the publication of this work. The research was executed with the utmost impartiality, and no financial or personal affiliations were present that could potentially sway the study's outcomes or interpretation. We affirm the ethical integrity of the research, conducted in strict adherence to rigorous scientific standards and ethical protocols.

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### **This Study Explores**

The psychological and psychosocial effects of living with albinism, which is of great social and practical importance, and the author has gathered much related information, also, in-depth analysis has been performed, therefore, after considering the following modifications, this study is recommended to be published:

- 1) Practical data and facts about the problems faced by individuals with albinism could be provided to lead in the main issue to be discussed.
- 2) Supportive materials are necessary for statements like "In recent years, there has been an increasing focus on understanding the psychological and psychosocial effects of living with albinism".
- 3) The author shared much length on listing background information and carrying out literature review, while more attention is suggested to be paid to detailed research procedures.
- 4) Detailed introduction about the samples chosen is necessary.
- 5) According to above study, suggestions for future treatment of individuals with albinism could be proposed from various perspectives.