Personal Hygiene Practices and Perceived Health Status of Individuals with Mild Intellectual Disability, in Calabar Metropolis, Cross River State, Nigeria

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Abstract: *Introduction*: Globally, individuals with intellectual disabilities face well-documented challenges in maintaining consistent personal hygiene. Evidence from high-, middle-, and low-income settings consistently linked poor hygiene practices to elevated infection risk, social marginalization, and diminished health-related quality of life. Despite this growing body of international evidence, hygiene habits and health perceptions of individuals with Mild Intellectual Disability (MID) in sub-Saharan African contexts, including Nigeria, remain poorly understood and seldom empirically examined. This study investigated the relationship between personal hygiene practices and perceived health status among individuals with MID in Calabar metropolis, Cross River State, Nigeria.

Method: Two research questions and one research hypothesis were raised to guide the study. A survey design was employed, and data were collected from a purposive sample of 120 participants aged 10 - 18 enrolled in special education programs. Personal hygiene was measured using a structured Personal Hygiene Checklist completed by the primary teacher or caregiver with the most consistent daily contact with the participant. Where both were available, the individual with the closest routine interaction was selected to minimize variability in observation. Perceived health status was assessed using a Likert-type scale appropriate for students with MID (ranging from poor to very good). Descriptive statistics and ordinal logistic regression were employed to analyze the data at a 0.05 level of significance.

Results: Generally poor hygiene practices across key daily care activities, including handwashing, toothbrushing, bathing, nail care, clothing cleanliness, and toilet use, alongside a relatively fair level of perceived health status. Inferential statistics indicated a statistically significant association between personal hygiene behaviors and perceived health status across all hygiene indicators.

Conclusion: This research provides evidence of a meaningful association between personal hygiene practices and perceived health status among individuals with MID. These findings indicate that improved hygiene behavior is positively correlated with high perceived health status among persons with MID. Structured hygiene training with visual aids, regular reinforcement, family-school partnership, and periodic monitoring were recommended. The findings can be used to shape school-based support and community-based interventions that are aimed at enhancing preventive health practices among intellectually disabled individuals.

Keywords: Mild intellectual disability, personal hygiene, perceived health status, special education, self-care, Calabar, Nigeria.

INTRODUCTION

Despite the growing need for health equity and well-being among persons with disabilities, persons with mild intellectual disability in Nigeria continue to face serious challenges in their quest to achieve optimal personal hygiene and acceptable health outcomes. Inclusive health refers to the deliberate design and delivery of health services and health education that accommodate the cognitive, behavioral, and social

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needs of individuals with disabilities. In this perspective, access to health is not limited to the availability of services but extended to the ability to understand, engage with, and benefit from those services in everyday life. For individuals with mild intellectual disability, inclusive health often depends on adapted communication, structured routines, and sustained caregiver support. Current health promotion models in the special education and rehabilitation contexts tend to be more generalized in their care provision, neglecting the adaptive and cognitive needs that must be addressed to achieve consistency in hygiene behaviors amongst this group [1, 2]. As individuals with mild ID possess the potential for autonomous functioning with appropriate support, inadequate structured hygiene training, limited caregiver capacity, and weak institutional health policies contribute to inconsistent self-care practices and vulnerability to preventable health conditions [3, 4].

Personal hygiene, which refers to the deliberate set of practices individuals undertake to maintain bodily cleanliness and reduce exposure to infection-causing agents [5], is an important aspect of health and social interaction throughout the life course. It directly affects physical health, emotional well-being, and social integration [6]. Good hygiene practices, including regular handwashing, bathing, oral care, and wearing clean clothing, may play a vital role in preventing illness and sustaining overall health [7]. According to [8], for children and adolescents, routine hygiene practices (bathing, oral care, handwashing, and grooming) reduce infection risk, support physical comfort, and contribute to positive social interactions. In general populations, hygiene behavior is largely habitual, socially reinforced, and shaped by personal motivation and environmental expectations [9]. Among populations with disabilities, particularly individuals with mild ID, personal hygiene practices extend beyond routine health behaviors to become an indicator of functional independence, dignity, and social inclusion [10, 11].

Intellectual disability is defined as significant limitations in both intellectual functioning and adaptive behavior that originate before the age of 22 [12]. It is characterized by limitations in intellectual functioning and adaptive behaviors that affect the capacity for self-care, decision-making, and consistent engagement in daily hygiene routines [12]. Mild ID typically involves IQ scores in the approximate range of 50-70 and often allows the acquisition of academic and self-care skills with targeted instruction and support [13].

Maintaining consistent hygiene habits among individuals with mild ID can be challenging due to limitations in intellectual functioning and adaptive skills, which may, in turn, result in greater dependence on caregivers. Those with mild ID often require adaptive skills to be taught and reinforced regularly, as cognitive and adaptive limitations can render consistent hygiene care quite difficult without systematic teaching, modeling, and supervision [14]. Equally important, however, are environmental factors (inadequate caregiver support, poorly structured institutional routines, and limited access to hygiene education) which compound individual-level constraints [3, 4]. Hygiene competence, viewed in this light, is as much a reflection of the quality of surrounding support as it is an expression of individual adaptive capacity. Within the broader framework of adaptive functioning, hygiene is appropriately understood as a component of practical independence rather than merely a product of it [12].

Personal hygiene may be understood in the light of an adaptive functioning domain, reflecting individuals' capacity to perform daily living tasks with some degree of independence. In this sense, hygiene behavior may be considered both a health practice and an observable expression of functional ability, shaped by cognitive skills and environmental support. Perceived health, on the other hand, represents a subjective interpretation of one's physical and social condition. It appears to draw partly from these daily experiences. When hygiene routines are performed with some consistency, they may contribute to a sense of competence and bodily awareness, which in turn influences how health is perceived. This study, therefore, considers hygiene practices as a practical link between adaptive functioning and perceived health, rather than as an isolated behavioral outcome.

Research across high-, middle-, and low-income settings suggests that individuals with intellectual disability experience persistent gaps in hygiene-related behaviors [15-17]. Such gaps are linked to cognitive limitations, dependence on caregivers, and a deficiency in disability-responsive health education. Studies in Europe and North America indicate that hygiene routines are closely tied to structured support and environmental consistency [18,19]. Also, evidence from low- and middle-income countries indicates additional constraints, including limited access to trained caregivers and to adapted health materials. These patterns suggest that hygiene behavior is shaped by an interaction between individual adaptive capacity and the quality of surrounding support systems [20-22].

In low-and middle-income countries (LMICs), including Nigeria, hygiene practices among individuals with ID are also constrained by socioeconomic conditions and limited access to a specialized support system [23] identified a high prevalence of poor oral hygiene and untreated dental conditions among individuals with disabilities in Northwestern Nigeria, attributing these outcomes to inadequate hygiene education, caregiver fatigue, and scarcity of disability-inclusive health services. An earlier study by [24] revealed poor hygiene outcomes among institutionalized children with intellectual disability in Ibadan compared to non-disabled children, a finding reaffirmed by more recent LMIC studies. These enduring gaps suggest that, even when hygiene knowledge exists, it is not reliably translated into daily practice due to contextual and environmental constraints.

Caregiver facilitation and the availability of structured routines often form the basis of hygiene management in institutional environments, such as special schools and rehabilitation centers in Nigeria. However, focus is usually placed on the acquisition of academic or vocational skills, with little emphasis on personal hygiene training as a fundamental aspect of health promotion [3]. This gap raises concerns about long-term health outcomes, autonomy, and well-being among individuals with mild ID who are expected to transition into community integration programs. Their hygiene practices in this context are directly relevant to health practitioners, special educators, rehabilitation therapists, and policymakers seeking to advance disability-inclusive health strategies [25].

Perceived health status refers to an individual's subjective appraisal of their overall physical and psychological condition, incorporating emotional experience, bodily awareness, social acceptance, and sense of autonomy [9]. In the case of individuals with mild ID, health perception is shaped by their own awareness of bodily sensations and by the interpretive input of caregivers and peers. This is not because health perception in this group is inherently different, but because limited self-monitoring capacity means that individuals with mild ID often rely on relational and environmental feedback to make sense of their physical condition [26]. This is increasingly recognized as a dimension of health assessment in disability research [26, 27]. In individuals with mild ID, perceived health is also directly linked to their capacity to perform self-care activities and engage in hygiene-related routines, which establish a sense of competence and self-worth [28].

Internationally, studies have indicated the susceptibility of intellectually disabled people to hygienic health issues owing to the adaptive functional difficulties and minimal exposure to health education. The study of [29] located in the UK reported that participants with mild and moderate intellectual disability have inconsistent personal hygiene habits that depended mostly on environmental organization, caregiver reinforcement, and personal motivation. Similarly, [27] reported that perceived health status among individuals with intellectual disability was significantly associated with their engagement in routine self-care tasks, indicating that consistent hygiene behavior contributes to a positive sense of well-being and bodily autonomy.

Although this concept is widely studied in the general population, it is less explored in individuals with ID. In many Nigerian special schools and rehabilitation centers, emphasis is often placed on vocational training and academic integration, whereas hygiene education (if present) is delivered in an uncoordinated and non-evaluative manner, lacking behavioral reinforcement strategies and individualized care plans [30, 31]. As a result, people with mild ID disability are more vulnerable to hygienic infections, skin-related complications, oral health problems, bad body odor, and social stigmatization, which could significantly define their perceived health status and self-esteem [26]. Despite these obstacles, research indicates that people with mild ID are capable of providing credible reports of their well-being when tests are tailored to their capabilities. According to [32], the level of perceived health among people with mild ID is directly related to their independence, social inclusion, and quality of life.

Personal hygiene in individuals with mild intellectual disability extends beyond routine self-care and may be understood as part of ongoing functional rehabilitation. Regular engagement in hygiene-related measures, such as handwashing, oral care, and toileting, helps prevent secondary health conditions, including infections and dermatological problems. In this sense, hygiene practices may serve both maintenance and preventive roles, particularly in contexts where access to formal healthcare is limited. From a clinical perspective, structured support for hygiene behavior can be viewed as a practical component of treatment planning, aimed at sustaining health and reducing avoidable complications over time.

Limited research has examined the relationship between hygiene practices and perceived health.

Scholarly inquiry in Nigeria has scarcely addressed the relationship between personal hygiene practices and perceived health status among individuals with mild ID. Most of the current studies on disability and health in the Nigerian context were carried out through the lens of a caregiver-based or institutional assessment with minimal regard to the lived experience and subjective view of health of individuals with mild ID themselves [1, 31]. This gap limits understanding of how daily self-care behavior translates into subjective health experience, thereby constraining the development of interventions that reflect actual lived conditions.

Few studies have focused specifically on individuals with mild ID as a distinct subgroup; the majority of existing research either aggregates data across the full ID spectrum or overlooks these individuals' subjective health perceptions. Consequently, a study examining the relationship between hygiene practices and the health perceptions of individuals with mild ID in a school or caregiving setting is both timely and necessary. This study is placed within the wider context of disability-inclusive health promotion and seeks to investigate the personal hygiene habits and perceived health of individuals with mild ID in Calabar metropolis, Nigeria. Given the cross-sectional design employed, the findings speak to associations between these variables at a single point in time rather than to causal or developmental trajectories. Findings from the study could guide the development of targeted interventions and caregiver training programs aligned with the actual needs of this population. Although this study was conducted in Nigeria, issues associated with hygiene practices among individuals with mild intellectual disability are not limited to a single setting. Other low-resource environments also report similar limitations regarding caregiver support, resource access, and organized training [33-35]. The present study may therefore offer insights that extend beyond its immediate context, particularly in settings with comparable service limitations.

Research Questions

1. What is the level of personal hygiene practices among individuals with mild intellectual disability, as observed and rated by their teachers and caregivers?

2. What is the perceived health status of individuals with mild intellectual disability as reported by the individuals themselves, where possible, or by their teachers or caregivers, where self-report is not feasible?

Hypothesis

There is a significant association between personal hygiene practices and perceived health status among MID individuals.

METHOD

Research Design

A descriptive survey design was adopted. This design was chosen because it allows simultaneous assessment of both the independent and dependent variables. The design also enabled systematic collection of data on behavioral patterns and health perceptions without introducing any experimental intervention or controlled treatment.

Study Participants

A purposive sample of 120 students with clinically documented MID (IQ ~50-70) was included in the study. Inclusion criteria: (a) age 10 - 18, (b) enrolled in special education or integrated programs for MID, (c) parent/guardian consent, and the individual's assent. Participants were recruited from three special education schools/centers within two urban regions (Calabar South and Calabar Municipal). Participant characteristics were: mean age = 13.6 years; 58% male, 42% female. Most students attended full-time special education programs; family socioeconomic status varied.

Classification of mild intellectual disability (ID) was based on existing school records derived from prior psychological assessments conducted by qualified professionals. These assessments were informed by standard diagnostic frameworks (including DSM-5 criteria), which define intellectual disability as limitations in intellectual functioning and adaptive behavior with onset during the developmental period. Classification of ID in the present study was based on documented IQ ranges and adaptive functioning reports available within school records. Independent reassessment was not conducted, which may introduce some variability in diagnostic precision. Teachers and caregivers who rated the instrument had at least 1 year of experience working with individuals with intellectual disabilities. Most were directly involved in daily supervision and support, which positioned them to provide informed observational reports of hygiene behavior.

Most participants required varying levels of support in daily living activities, particularly in personal care

routines. While detailed clinical comorbidity data were not systematically available, teachers and caregivers reported that some participants presented with additional functional limitations, including communication difficulties and reduced attention span. This study was conducted in a structured school environment where daily routines were guided by institutional schedules. Moreover, hygiene practices outside the school setting depended largely on home support.

Instruments

1. Personal Hygiene Checklist (PHC) - Developed for the study, the PHC was a 6-item behaviorally anchored checklist covering bathing, oral hygiene, handwashing, nail care, toileting hygiene, and grooming. Each item was scored 1-2, 1-3, 1-4, etc., depending on the response. The items were measured at an ordinal level. The PHC was completed by the primary teacher/caregiver after a 2-week observation period. Inter-rater reliability (n = 20) yielded ICC = 0.82.

Caregivers in this study referred primarily to residential support staff or family members who had regular daily contact with the participants. In school settings, teachers who supervised routine activities such as toileting, meal times, and personal grooming were also considered appropriate observers. Their involvement was based on their consistent opportunity to observe hygiene behaviors across structured and unstructured periods of the school day. Response categories such as “observed but inadequate” referred to behaviors performed inconsistently or with errors in sequence, whereas “observed correctly” indicated that the behavior was carried out independently and appropriately. Terms such as “rarely” and “sometimes” reflected frequency estimates based on repeated observation over the two-week period.

The Personal Hygiene Checklist was developed specifically for this study based on observable daily living activities commonly used in adaptive behavior assessments. Item selection was informed by existing literature on self-care and hygiene routines among individuals with intellectual disabilities. Emphasis was on behaviors that could be reliably observed in school and caregiving contexts. Content validity of the checklist was approached through alignment with recognized domains of adaptive behavior, particularly personal care and daily living skills as described in standard intellectual disability frameworks. Each item was selected to reflect a routine hygiene activity that is both functionally relevant and observable within school or caregiving settings. The draft instrument was reviewed by two special education practitioners and one rehabilitation specialist to assess clarity, relevance, and coverage of key hygiene behaviors. Minor revisions were made in response to this feedback.

1. Perceived Health Status Scale (PHSS) - A 4 - point Likert-type scale adapted for MID individual. For self-report, students chose from pictorial faces/phrases representing: 1 = Poor, 2 = Fair, 3 = Good, 4 = Very Good. Caregivers/teachers rated the student on the same 1-4 scale. Perceived health status was obtained through self-report from participants who responded meaningfully to the scale. For participants who were unable to provide reliable responses, ratings were completed by teachers or caregivers based on their close knowledge of the individual’s daily condition.

The Perceived Health Status Scale (PHSS) was adapted by the researchers from standard self-rated health measures commonly used in general population studies. The process of adaptation involved simplifying response categories, incorporating pictorial cues to support comprehension, and rephrasing items into short, concrete expressions. This process was guided by experienced special education practitioners who work with individuals with intellectual disabilities and was reviewed for clarity before data collection.

Sample items from the Personal Hygiene Checklist include: “Washes hands after toilet use,” “Brushes teeth with or without prompting,” and “Maintains clean clothing during school hours.” Response options varied by item and reflected observable levels of independence or consistency.

While combining student self-reports with caregiver or teacher ratings introduces variability, this approach was considered necessary given differences in communicative ability among participants. When self-report was not feasible, caregiver ratings served as a proxy. This approach may introduce some subjectivity, and this limitation is acknowledged in the interpretation of findings.

The adaptation process was to reduce cognitive demand by simplifying response categories and incorporating visual cues. Although the scale was not subjected to full psychometric validation, preliminary review by practitioners and pilot use suggested that it was understandable for participants with mild intellectual disability who were capable of self-report.

This was a practical adaptation, not a standardized diagnostic instrument.

Procedure

Ethical approval was obtained from the heads of participating institutions. Written informed consent was obtained from parents or legal guardians of all participants. In addition, assent was obtained from participants using simplified verbal explanations and visual prompts appropriate to their level of understanding. Participation was voluntary, and care was taken to ensure that participants understood they could decline or withdraw without consequences. Schools provided permission, and caregiving staff were informed. Parents/guardians provided written consent; students gave verbal or pictorial assent.

Teachers and caregivers who had daily, consistent contact with the participants completed the Personal Hygiene Checklist after a 2-week observation period. They were also instructed to observe and record hygiene-related behaviors using the provided checklist. The Perceived Health Status Scale was completed by participants who demonstrated the ability to respond to the items. Where participants were unable to do so, the scale was completed by teachers or caregivers who had regular contact with them. Participants' ability to provide self-reports was determined through a brief preliminary interaction, using simple comprehension checks and visual prompts. Students who could reliably indicate preferences and respond consistently to basic health-related questions were included in the self-report component. For those who showed difficulty in understanding or responding meaningfully, caregiver or teacher ratings were used instead.

Data collection was conducted over a two-week period during regular school activities. Observations were not limited to single instances but reflected repeated exposure to routine activities across the school day. For behaviors that could not be observed directly in the school setting, such as bathing, data were collected from caregivers based on routine home practice. This combined approach was adopted to capture a broader representation of daily hygiene behavior, although it may introduce variability in reporting. All raters received brief guidance on applying the response categories to ensure a shared understanding of the rating process.

Data Analysis

Data were analyzed using descriptive statistics (median, mode, frequencies, and interquartile range). The relationship between PHC and PHSS scores was assessed using ordinal logistic regression. Statistical significance was set at $\alpha = 0.05$.

Ordinal logistic regression was selected because perceived health status was measured on an ordered categorical scale. This approach allows estimation of the probability of transitioning from lower to higher perceived health categories as a function of hygiene behaviors, without assuming equal intervals between categories. Given the ordinal nature of both hygiene indicators and perceived health ratings, central tendency was summarized using frequency, percentage, and mode rather than mean values. This approach is more appropriate for ordered categorical data and avoids the assumptions of equal-interval scaling. The use of the mean and standard deviation would require the assumption of equal intervals between categories, which is not supported by the data structure.

RESULTS

Level of Personal Hygiene Practices among MID Individuals

Hygiene variables were measured using ordinal categories that reflected observable levels of performance and consistency. Lower categories indicated absence or inadequate performance of a behavior, while higher categories reflected more consistent and independent execution. Similarly, perceived health status was rated on a 4-point scale from poor to very good. Response categories such as “not observed,” “observed but inadequate,” and “observed correctly” represent increasing levels of behavioral consistency and independence. These distinctions were based on repeated observation rather than single instances.

The results in Table **1** show that personal hygiene practices among MID individuals were generally low. It should be noted that not all hygiene behaviors can be directly observed within the school setting. Activities such as bathing and, in some cases, toothbrushing often occur at home. In such instances, ratings reflected a combination of observable indicators, routine checks, and caregiver reports rather than continuous direct observation. Most participants demonstrated limited independence and consistency in maintaining hygiene routines. A majority of respondents (55 percent) were not observed practicing handwashing at all, while another 29.17 percent washed their hands inadequately. Only 15.83 percent

Table 1: Personal Hygiene Practices and Overall Hygiene Status (N = 120)

Variable	Category	Frequency (n)	Percentage (%)	Median	Mode
Handwashing	Not observed	66	55.00	1	1
	Observed but inadequate	35	29.17		
	Observe correctly	19	15.83		
Toothbrushing	Never	74	61.67	1	1
	Sometimes	35	29.17		
	Daily	11	9.17		
Bathing	Rarely	67	55.83	1	1
	At least twice a week	3	2.50		
	Once a day	31	25.83		
	Twice a day	11	9.17		
	Thrice a day	8	6.67		
Nail Trimming	Often dirty	74	61.67	1	1
	Often clean	46	38.33		
Cleanliness of clothes	Often soiled	82	68.33	1	1
	Often cleaned	38	31.67		
Toilet Use Hygiene	Often accidented	13	10.83	3	3
	Often assisted	29	24.17		
	With prompting	45	37.50		
	Independents	33	27.50		
Overall Hygiene Level	Good	5	4.17	1.5	1.5
	Poor	115	95.83		

followed proper handwashing practices. This pattern may indicate limited consistency in performing basic hygiene behaviors within daily routines, although the data do not directly assess underlying understanding. Toothbrushing habits reflected a similar pattern. Approximately 61.67 percent said they never brushed their teeth, and 29.17 percent did so occasionally. The number of those who brushed daily was only 9.17 percent. This pattern may reflect limited support or inconsistency in oral hygiene routines, although the data do not directly assess underlying causes.

In bathing, the majority of the respondents (55.83 percent) had a low frequency of bathing, with only 25.83 percent bathing once a day. Only small proportions of participants reported bathing twice (9.17%) or three times daily (6.67%). This infrequent bathing may be related to reliance on caregiver support or variation in supervision, although these factors were not directly measured. The same was also applied to nail and clothing cleanliness. 61.67 percent had nails that were frequently dirty, and 68.33 percent had regularly soiled clothes. These observations may suggest gaps in routine monitoring and support for personal care. Toilet hygiene practices, though somewhat better, still showed limited independence. While 27.5 percent of students used the toilet independently, a larger share required prompting (37.5 percent) or direct assistance (24.17 percent). A small group (10.83 percent) still experienced an accident. The distribution indicates that while some progress has been made in toileting autonomy, independent toileting was not consistently observed across participants.

In terms of overall hygiene status, only 4.17 percent of respondents were rated as having good hygiene, while a striking 95.83 percent were rated as having poor hygiene. Median and mode values were low across variables, indicating a generally low standard of hygiene among participants. The descriptive statistics indicate that the personal hygiene habits of the students with mild intellectual disability in Calabar are

Table 2: Frequency of Perceived Health Status among MID Individuals (N = 120)

Perceived Health Status	Frequency	Percentage (%)	Cumulative Percentage (%)	Median	Mode	Interquartile Range (IQR)
Poor	6	5.0	5.0	3	3	1
Fair	45	37.5	42.5			
Good	56	46.7	89.2			
Very Good	13	10.8	100.0			

poor. The fact that only a few hygiene behaviors are observed indicates the need for structured interventions in schools and rehabilitation centers. Practical health education, involvement of the caregivers as well as reinforcing behavioral change, can be necessitated to enhance personal care and the overall perceived health status of such students.

Perceived Health Status among MID individuals

Findings in Table **2** indicate that the majority of people with mild intellectual disability in special schools and rehabilitation centers in Calabar metropolis rated their health to be generally satisfactory. Although a few rated their health as poor, the overall pattern reflects a moderate to positive sense of perceived health status. Only 5 percent of respondents considered their health poor, while 37.5 percent described it as fair. A larger share, 46.7 percent, reported good health, and 10.8 percent felt their health was very good. When combined, the last two categories indicate that over half of the participants held a favorable view of their health condition. The median and mode values of 3, together with an interquartile range of 1, further show that most responses were clustered around the “good” category.

These findings indicate that many participants rated their health positively, despite the observed distribution of hygiene behaviors described earlier. Perceived health ratings may not correspond directly with clinical indicators, and this distinction should be considered. Perceived health ratings in this study appear to reflect subjective appraisal, although the specific basis for these judgments was not directly examined. It is possible that this relatively positive perception reflects familiarity with routine care environments or limited reference points for comparison. The low percentage of respondents in the poor category suggests that perceptions of severe health issues are not widespread among them. Nevertheless, the high number of cases reporting fair health shows that there is still room for improvement, especially in preventive care and hygiene reinforcement.

Finally, despite the fact that most of the people with mild intellectual disability in these facilities had a positive view of their health, the results should be taken with caution. Perceived health may not fully reflect objective health status, particularly in contexts where self-evaluation is influenced by external support and limited health awareness. Ongoing health education, routine medical evaluation, and improved supervision remain essential for sustaining genuine perceived health status within this population.

Relationship between Personal Hygiene Practices and Perceived Health Status

The ordinal logistic regression examined whether personal hygiene practices could predict perceived health status among MID individuals. The model included six predictors representing different aspects of hygiene behavior: handwashing, toothbrushing, bathing, nail trimming, clothing cleanliness, and toilet hygiene. All predictors were statistically significant at the $p < .001$ level. The positive coefficients indicate that improvements in these hygiene behaviors are significantly associated with higher levels of perceived health. Among them, toothbrushing ($\beta = 4.134$, $SE = 0.728$, $t = 5.68$, $p < .001$) had the largest effect size, followed closely by toilet use hygiene ($\beta = 3.955$, $SE = 0.660$, $t = 5.99$, $p < .001$) and cleanliness of clothes ($\beta = 3.881$, $SE = 0.774$, $t = 5.01$, $p < .001$). These results suggest that individuals who consistently maintained oral care, proper toileting, and clothing hygiene tended to perceive themselves as healthier.

The threshold estimates that cut across health categories, Poor to Fair (34.732), Fair to Good (38.499), and Good to Excellent (42.815), demonstrate a steady rise in the perceived health that is predicted to occur with improvement in hygiene behavior. The threshold differences are relatively high, which implies that to improve perceived health, one needs to significantly improve their personal hygiene practices. The fit statistics also indicate the strength of this relationship, as indicated by the model. The Akaike Information Criterion (AIC = 128.804) and the residual

Table 3: Logistic Regression of Personal Hygiene and Perceived Health Status (N = 120)

Predictor	Estimate (β)	SE	*T*	*P*
Handwashing	3.856	0.678	5.68	< .001 ***
ToothBrushing	4.134	0.728	5.68	
Bathing	3.552	0.639	5.56	
NailTrimming	3.805	0.762	4.99	
ClothesCleanliness	3.881	0.774	5.01	
ToiletUse	3.955	0.660	5.99	
Thresholds (Intercepts)	**Estimate**	**SE**	***T***	***P***
Poor	Fair	34.732	5.582	6.22
Fair	Good	38.499	6.101	6.31
Good	Excellent	43.815	6.829	6.42

deviance (110.804) indicate that the model is well-fitted. The model yielded relatively high pseudo-R^2 values (McFadden = 0.648; r^2ML = 0.833; r^2CU = 0.889), suggesting a strong association between hygiene behaviors and perceived health ratings within this sample. However, pseudo-R^2 measures in ordinal regression do not estimate explained variance in the same way as linear models and may appear inflated, particularly in models with a limited number of predictors or restricted outcome categories. These values should therefore be interpreted with caution and viewed as indicators of model fit rather than precise measures of explanatory power. The findings should be interpreted as reflecting associations within the observed data rather than definitive estimates of effect size or predictive strength.

The null hypothesis was that there is no significant correlation between personal hygiene and the perceived health status. This hypothesis is rejected due to significant predictors and a good model fit. The results show that enhanced hygiene behaviors are closely correlated with improved perceived health among students with mild intellectual disability. These findings highlight daily hygiene practices among this study group, even though the role of structured health education in shaping these behaviors was not directly examined. Such behaviors may be supported by systematic support from caregivers and teachers, which facilitates the development of more positive self-care habits and leads to improved health perceptions and, potentially, long-term physical benefits.

Model Fit Indices

RD = 110.804 AIC = 128.804 McFadden's R^2 = 0.648 r^2ML = 0.833 r^2CU = 0.889

DISCUSSION

This study aligns with the broader research on disability-inclusive health behavior, particularly in low- and middle-income settings. Various studies documented that individuals with mild intellectual disability experience gaps in hygiene competence due to limited adaptive learning, insufficient caregiver reinforcement, and structural neglect in institutional settings. [36] observed that targeted health education and guided practice significantly improve hygiene habits and self-efficacy among children with intellectual disabilities. Previous studies indicate that structured instruction and caregiver involvement are associated with improved hygiene behavior. The present findings, while not intervention-based, appear consistent with this pattern. Similar patterns have been reported by [37] in a Turkish intervention study, which found that student- and parent-based training results in long-term positive changes in hygiene knowledge and behavior. These findings may suggest that limitations in hygiene performance are not solely attributable to individual capacity but may also reflect the structure and consistency of support available within daily routines. Interpretation of these findings should remain within the scope of the measured variables, as factors such as institutional practices, caregiver training, and home environment were not directly examined in this study.

Other developing countries have reported comparable statistics that hygiene care in persons with disabilities is limited by environmental and social factors. [38] demonstrated that the intellectually disabled Nigerian children tend to experience a combination of behavioral and health problems that minimize their involvement in everyday self-care. The

review by [39] confirmed that institutional environments in Nigeria provide minimal adaptive hygiene instruction, while care is largely reactive rather than preventive. This observation provides a contextual backdrop for interpreting the low levels of independence in bathing, toothbrushing, and handwashing observed in the current study, although the present data do not directly assess institutional practices.

The participants' comparatively optimistic view of health, despite poor hygiene, is a familiar trend in disability research [40] discovered that people with intellectual disability tend to define health in subjective ways with terms like comfort or social acceptance instead of biomedical measurements. The same attitude was also observed by [41], who explained that reassurance from caregivers and a sense of belonging to a community can affect self-perceived well-being among Nigerians with developmental disabilities. Within the context of intellectual disability, hygiene practices may be understood as part of ongoing preventive care rather than as isolated routine behaviors. Regular engagement in activities such as handwashing, oral care, and bathing may reduce exposure to infection and support basic physiological stability. At the same time, these activities appear to contribute to a sense of order, comfort, and social acceptability, which may influence how individuals interpret their own health. In this sense, hygiene overlaps with daily care and low-intensity therapeutic support, particularly in settings where access to formal healthcare may be limited.

A meaningful relationship between hygiene practices and perceived health has been established across several studies [42], demonstrating that daily living skills predict perceived health among adults with intellectual disabilities. Their regression model, similar to the one in this study, revealed that self-care behaviors strongly influence self-rated health and emotional balance. [43] later confirmed that independence in personal care contributes to a sense of competence and better health perception. Existing studies suggest that engagement in daily self-care activities is associated with aspects of psychological well-being and self-efficacy among individuals with intellectual disability [42, 43]. Systematic reviews conducted [44] in the wider context of Africa found inadequate training of caregivers, inadequate adaptive equipment, and institutional support to be significant barriers to hygiene care among children with disabilities. Similarly, [45] discussed ethical issues related to the failure to provide menstrual hygiene education to women with intellectual disabilities. This also reflects the trends in institutional negligence.

The findings of this study have practical implications across several levels. In clinical contexts, routine hygiene behavior may serve as a simple but meaningful indicator of functional health and daily stability, particularly in settings where formal assessment tools are limited. For caregivers, the results highlight the importance of consistent supervision, modeling, and reinforcement in supporting hygiene routines, rather than assuming skill acquisition will generalize without guidance. Within special education settings, hygiene training may need to be treated as a structured component of the curriculum, with clear routines, visual supports, and regular monitoring. At a broader level, these findings suggest that disability-inclusive health policies should extend beyond access to services and address the everyday conditions that support or limit basic self-care practices.

Recent Nigerian and regional studies further support the need for behavioral reinforcement and visual learning materials. [46] found that using instructional aids significantly improved self-help and hygiene-related skills among children with intellectual disabilities in Abuja. This appears consistent with earlier recommendations by [3], who proposed visual and routine-based strategies to sustain hygiene behavior in special schools. Together, these findings provide a coherent argument that practical teaching, consistent caregiver participation, and institutional follow-up are central to achieving measurable improvements in hygiene and better health perceptions.

A notable pattern in the present study is the coexistence of low observed hygiene performance and relatively positive perceived health ratings. This divergence raises questions about how this group defines health internally. It may indicate that perceived health is shaped less by objective self-care performance and more by stability of routine, social interaction, or reassurance from caregivers. This interpretation should be approached with caution, yet it highlights the need to consider both behavioral and perceptual dimensions when evaluating health in individuals with mild intellectual disability. This study adds to existing scholarship by confirming that personal hygiene remains both a behavioral and structural issue within the Nigerian context. Its results extend previous research by empirically linking hygiene practices to perceived health in a defined regional population. The consistency of its findings with international studies

underscores the universality of adaptive hygiene challenges among individuals with intellectual disabilities, while its local specificity underscores the urgent need for context-specific health education and caregiver training.

LIMITATIONS OF THE STUDY

Data on hygiene behavior were largely derived from teacher or caregiver observations, which rely on subjective judgment and may vary across observers. Although these individuals had regular contact with the participants, their ratings may reflect differences in expectations, attention, or interpretation of behavior. In addition, some hygiene activities, particularly bathing and aspects of oral care, occur outside the school setting and were not directly observed. In such cases, reports relied on caregiver input, which may introduce variability in accuracy.

The study was conducted within selected special education settings in Calabar, which may limit the extent to which the findings apply to other contexts, particularly rural areas or non-institutional environments. Hygiene practices observed in structured school settings may differ from those in home or community contexts where routines and supervision vary.

The study's analytical scope was limited to a small number of variables, primarily focusing on observable hygiene behaviors and perceived health status. Other potentially relevant factors, such as age variation, environmental conditions, and co-occurring functional limitations, were not included in the model. While the sample size may support complex analysis, available data did not allow for reliable inclusion of these variables. Future studies may benefit from a more comprehensive modeling approach that incorporates these additional factors.

Perceived health ratings were obtained from proxy respondents in cases where participants could not provide reliable self-reports. While this approach reflects common practice in intellectual disability research, proxy ratings may not fully capture the individual's subjective experience and may introduce bias due to observer interpretation. In addition, instruments used in this study were not subjected to extensive psychometric validation beyond content review and preliminary reliability assessment. This may limit the precision with which the constructs are measured and should be considered when interpreting the findings.

CONCLUSION

This study confirms that personal hygiene is critical in defining how learners with mild intellectual disability (MID) understand and experience their own health. Most participants showed weak hygiene habits; however, they viewed their health in generally positive terms. This indicates a gap between actual and perceived well-being. The evidence from this research demonstrates that structured hygiene instruction may contribute to improved perceived health and self-evaluation, although this relationship was not directly tested in an intervention context. These results point to the need for coordinated efforts by schools, caregivers, and health agencies to integrate hygiene education into everyday routines. Sustained attention to hygiene training, caregiver participation, and institutional support will not only improve physical health but also promote self-confidence and social inclusion among individuals with mild intellectual disability in Nigeria.

These findings suggest that attention to everyday hygiene practices may support broader health maintenance among individuals with mild intellectual disability. Efforts to strengthen these behaviors within school and home environments could contribute to preventive health strategies, even in low-resource settings.

RECOMMENDATIONS

1. School administrators and special educators should design and implement structured hygiene training programs that include visual demonstrations, routine reinforcement, and close supervision to strengthen students with mild intellectual disabilities' daily self-care habits.

2. Caregivers and teachers in special education settings should provide consistent health education and simple self-assessment tools to help learners develop a realistic understanding of their personal health and hygiene needs.

CONFLICT OF INTEREST

There is no conflict of interest among the authors of the article.

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