

ORIGINAL

Medical and psychiatric comorbidity in the patients with intellectual disability in a rehabilitation setting, Kingdom of Saudi Arabia

Comorbilidad médica y psiquiátrica en los pacientes con discapacidad intelectual en un entorno de rehabilitación, Reino de Arabia Saudí

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Abstract

Introduction: Intellectual disability (ID) is a prevalent neurodevelopmental issue globally. People having ID suffer invariably from psychiatric, behavioral, and emotional disturbances. It is reported that a high rate of comorbidity predisposes the patients to a poorer prognosis and quality of life especially if undiagnosed and untreated. We specifically aimed to study the comorbid physical and psychiatric disorders in this vulnerable population group and to find any association with various related variables.

Material: The observational cross-sectional study was conducted on male and female patients admitted with disabilities in Rehabilitation Centre Majmaah. The data was entered and analyzed using IBM SPSS 26.0.

Results: The number of participants (n) was 147. The mean age of the patients was 24.32±2.19 years. Out of all patients, 17 (11.6%) had mild, 33 (22.4%) had moderate, 56 (38.1%) had severe and 41 (27.9%) had profound ID. About 72% of the sample (n=42) had comorbidity with either a medical or a psychiatric illness whereas 12 participants (8.17%) suffered from both physical and psychiatric disorders. In this study, n= 30/147 (20.40%) had psychiatric comorbidity. There was a preponderance of ADHD (attention deficit hyperactivity disorder) and Behavioural Disorders. Around 87 patients out of 147 (59.2%) had one or more physical comorbidities. The most common medical comorbidity was Epilepsy (26.53%). Overall, significant association was found between severity of physical and psychiatric diseases (p=0.023).

Conclusion: Physical and psychiatric comorbidities are common in ID patients. ADHD, Behavioural Disorders and Epilepsy were predominant in the research.

Key words: Physical comorbidity, psychiatric comorbidity, intellectually disabled, rehabilitation.

Resumen

Introducción: La discapacidad intelectual (DI) es un problema de neurodesarrollo prevalente en todo el mundo. Las personas con DI sufren invariablemente trastornos psiquiátricos, conductuales y emocionales. Se ha informado de que una alta tasa de comorbilidad predispone a los pacientes a un peor pronóstico y calidad de vida, especialmente si no se diagnostican y no se tratan. Nuestro objetivo específico es estudiar los trastornos físicos y psiquiátricos comórbidos en este grupo de población vulnerable y encontrar cualquier asociación con diversas variables relacionadas.

Material y métodos: El estudio observacional transversal se realizó en pacientes masculinos y femeninos ingresados con discapacidad en el Centro de Rehabilitación Majmaah. Los datos se introdujeron y analizaron con el programa IBM SPSS 26.0.

Resultados: El número de participantes (n) fue de 147. La edad media de los pacientes fue de 24,32±2,19 años. De todos los pacientes, 17 (11,6%) tenían una ID leve, 33 (22,4%) moderada, 56 (38,1%) grave y 41 (27,9%) profunda. Alrededor del 72% de la muestra (n=42) tenía comorbilidad con una enfermedad médica o psiquiátrica, mientras que 12 participantes (8,17%) padecían tanto trastornos físicos como psiquiátricos. En este estudio, n= 30/147 (20,40%) tenían comorbilidad psiquiátrica. Había una preponderancia del TDAH (trastorno por déficit de atención e hiperactividad) y de los trastornos del comportamiento. Alrededor de 87 pacientes de 147 (59,2%) tenían una o más comorbilidades físicas. La comorbilidad médica más común era la epilepsia (26,53%). En general, se encontró una asociación significativa entre la gravedad y las enfermedades psiquiátricas (p=0,023).

Conclusiones: Las comorbilidades físicas y psiquiátricas son frecuentes en los pacientes con DI. El TDAH, los trastornos de conducta y la epilepsia fueron predominantes en la investigación.

Palabras clave: Comorbilidad física, comorbilidad psiquiátrica, discapacitados intelectuales, rehabilitación.

Introduction

Intellectual disability (ID) is a prevalent neurodevelopmental issue globally. People having ID suffer invariably from psychiatric, behavioral, and emotional disturbances.¹ People with an ID appear to be admitted with more severe problems and receive more interventions than those without ID.² It is reported that a high rate of comorbidity is suggestive of significant problems in the diagnosis of multiple psychiatric illnesses in these patients.³ In Saudi Arabia between 1990 and 2017, the age-standardized percentage of years lived with disability (YLDs) due to mental disorders (i.e., depression and anxiety), substance use disorders (i.e. drug and alcohol use disorders), and neurological disorders, continued to increase. The percentage of YLDs due to mental disorders was found to be 15.6%, 6.34% for substance use disorders and 10.4% for neurological disorders.⁴

A systematic review reported that the prevalence rates of conditions like Epilepsy (22%), Cerebral Palsy (CP) (19.8%), and Anxiety Disorders (10.1%) in children with ID were higher than the prevalence rates in children without ID.⁵ Early detection and adequate treatment of comorbid health conditions are important because these conditions may have a negative impact on the well-being and social participation of children with ID and their families.⁶

The life expectancy of people with mental sub normality and co-morbid psychiatric illness is short as compared to the general population.⁷ The excess mortality which is about 60% can be attributed to physical illnesses like Nutritional and Metabolic Diseases, Cardiovascular Diseases, Viral Diseases, Respiratory Tract Diseases, Musculoskeletal Diseases, pregnancy complications, and possibly Cancers. The evidence mentioned in studies may identify etiological causes, necessary for the early identification of these conditions and the development of effective programs⁸. The reason could be that mentally subnormal individuals cannot voice their needs as others, as well as mobility limitations specifically in older adults with ID, they are less likely to receive standard levels of care, as mobility is rarely studied in the ID literature.⁹

Considering the complexity of the bio-psychosocial cause and effect relationship in Intellectually disabled patients with mental and physical illnesses, it is important to know the comorbidity pattern of diseases by targeted research. Keeping in mind the scarcity of published data in this domain in Saudi Arabia, this study was conducted to bridge the knowledge gap about the trends, needs, and presentations of people with disabilities living in a rehabilitation center in Majmaah City. We specifically aimed to study the comorbid physical and psychiatric disorders in this vulnerable population group and tried to find any association with various related variables. Therefore the objectives of the study were to find out

the prevalence of comorbid psychiatric disorders among ID patients, to find out the prevalence of comorbid medical disorders among ID patients and to explore any association between psychiatric disorders or medical disorders with the severity of the ID.

Materials and methods

The observational cross-sectional study was conducted on patients admitted with disabilities in Rehabilitation Centre Majmaah. The study participants were both males and females with intellectual disabilities. The data was collected using a systematic random sampling technique to select the patients from an approximate sampling frame. The interval size of 03 was calculated by using the following formula. Based on random value every 2nd patient was selected to reach the sample size of 104. $K=N/n$, Where n =sample size; N =population size; k =size of interval of selection. The age of participants was between 10-60 years.

Data Collection Procedure:

The Rehabilitation Centre was visited by a team of researchers and medical students who were trained in advance to understand disability and GAF (global assessment of functioning) scoring to fill the observer-rated questionnaire. The questionnaire consisted of demographic details, the patient's diagnosis, and the level of severity of intellectual function as well as physical and mental diseases. The information was extracted from the documented records. Collateral information was taken from attending staff that were allocated to each patient. Participation consent from the family (signed informed consent) in advance through administration was taken. All information was kept purely confidential and was only used for research purposes. The research was approved by the Ethical Review Board of Majmaah University vide reference no MUREC-Jan.28 / COM-2020 / 19-3.

Data analysis:

The data was entered and analyzed using IBM SPSS 26.0. Quantitative variables were expressed as Mean SD, whereas qualitative variables were reported as frequencies and percentages. Pearson Chi-square and Fisher Exact test were applied to observe associations between qualitative variables. A p-value of <0.05 was considered statistically significant.

Results

The number of participants (n) was 147. The mean age of the patients was 24.32±2.19 years. Most of the patients (96.6%-n 142) were in the age range of 11-40 years. Females comprised 53.1 % (78) of the sample, the majority (144) were uneducated and single (98.6). Out of all patients, 17 (11.6%) had mild, 33 (22.4%)

had moderate, 56 (38.1 %) had severe and 41 (27.9%) had profound ID. About 72% of the sample (n=42) had comorbidity with either a medical or a psychiatric illness whereas 12 participants (8.17%) suffered from both physical and psychiatric disorders. Most of them (75%) had a speech disorder of varying severity.

1. Psychiatric Disorders and Intellectual Disability

In this study, n= 30/147 (20.40%) had psychiatric comorbidity. There was a preponderance of ADHD and Behavioural Disorders. The most common comorbidity found was ADHD (11.56%-n=17) followed by Behavioural Disorders (11.56 %- n=17) and (10.2%- n=11) Psychotic Disorders/ Schizophrenia. Few cases of Psychosis (n=9) and a Mood Disorder (n=1) were found in records.

Association of Psychiatric Disorders with the severity of Intellectual disability:

A significant association was found between the severity of ID and psychiatric disorders (P=0.023) as seen in table 1 above. This implied that having a severe ID was associated with increased chances of having a psychiatric illness generally.

2. Medical Disorders and Intellectual Disability

About 87 patients (59.2%) had one or more physical comorbidities. In our study, the most common medical comorbidities were Epilepsy n= 39 (26.53%). Quadriplegia was found in n=13 (8.84%) and Paraplegia in n= 15 (10.20%). Diabetes Mellitus (DM) was found in n=8 (5.44%), 8 patients had CP whereas only one patient each had (0.68%) illnesses, such as Hypertension, Cardiac Anomaly, Impaired Vision , Anemia, Urinary Tract Infection (UTI), Aphasia and CP.

Association of Medical Disorders with the Severity of Intellectual Disability:

Two physical disorders were found to have a statistically significant association with the severity of ID, including Epilepsy (p<0.0001) and Paraplegia (p<0.012).

3. Medications Used by Patients

Among 47 out of 147 patients were on medication (50.34%). Forty-six (31.29%) were on antiepileptics and mood stabilizers, and 24 (16.32%) were on

antipsychotics. One patient each was taking medicines like cortisol, calcium, and vitamin supplements.

Discussion

In this study, a total of 147 patients with ID have been analyzed, out of which nearly two-thirds suffered from either one or more comorbidities. This finding is in line with a recent study by Platt et al which cited a prevalence of 65.1% comorbid mental disorders in people with ID. The reason for an even higher prevalence in our sample could be that we included both the physical and the mental comorbidities in our study population.¹⁰

Intellectual Disability and Psychiatric Comorbidity

We found that a significant proportion of our patients with ID, living in the rehabilitation center had psychiatric comorbidity. There was a preponderance of ADHD and Behavioural Disorders in our sample. Whereas only a few cases of Psychosis and Mood Disorder were reported.

If we compare our findings with other studies done on patients with ID, 14.4%⁷ of individuals had psychiatric diagnoses which are somewhat near our study where we found the percentage to be 20 %. That study reported a significant proportion of the patients to be having psychosis (4.4%) like our study (7.48%), whereas the prevalence of Mood Disorders (8.8 %) was much more than what we found in our study (1.36%).⁷ Another study by Deb et al in 2001 also reported about 5.6% of Mood Disorders which is also in contrast with our study had low number.¹¹ Also no cases of ADHD and Behavioural Disorders were found in both the studies.^{11,12} The possible explanation for the relatively smaller percentage of Psychotic and Mood Disorders and a higher percentage of ADHD and behavioral disturbances could be the differences in setting and patient population.

Our study population primarily comprised of children and adolescents whereas the other studies were carried out in adult outpatient departments. Another reason for low rates of psychosis and mood symptoms could be better control of symptoms due to the inpatient setting and supervised dispensing of the drugs which ensured better compliance.

Table 1: Percentage and association of psychiatric disorders and intellectual disability.

| Psychiatric Diagnosis | Mental Retardation | | | | p-value |
|-----------------------|--------------------|----------------|--------------|----------------|----------|
| | Mild n (%) | Moderate n (%) | Severe n (%) | Profound n (%) | |
| ADHD | 3 (17.6) | 6 (18.2) | 8 (14.3) | 0 (0.0) | p=0.023* |
| Autism | 0 (0.0) | 0 (0.0) | 3 (5.4) | 3 (7.3) | |
| Behavioral Disorders | 0 (0.0) | 3 (9.09) | 10 (17.8) | 4 (9.8) | |
| Mood Disorder | 1 (5.9) | 1 (3.03) | 0 (0.0) | 0 (0.0) | |
| Sleep disorder | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Psychotic Disorders | 2 (11.8) | 3 (9.09) | 6 (0.0) | 0 (0.0) | |
| Anxiety Disorder | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Substance Abuse | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Organic Disorder | 0 (0.0) | 0 (0.0) | 5 (8.9) | 5 (12.2) | |

Table II: Percentages and Association between Intellectual Disability and Medical Diagnosis.

| Medical Diagnosis | Intellectual Disability | | | | p-value |
|--------------------------------|-------------------------|-------------------|-----------------|-------------------|----------|
| | Mild n (%) | Moderate n (%) | Severe n (%) | Profound n (%) | |
| Hypertension | | | | | |
| No | 16 (94.1) | 33 (100) | 56 (100) | 41 (100) | p=0.053 |
| Yes | 1 (5.9) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Diabetes Mellitus | | | | | |
| No | 16 (94.1) | 33 (100) | 52 (92.9) | 37 (92.5) | p=0.469 |
| Yes | 1 (5.9) | 0 (0.0) | 4 (7.1) | 3 (7.5) | |
| Urinary Tract Infection | | | | | |
| No | 17 (94.1) | 33 (100) | 55 (98.2) | 41 (100) | p=0.651 |
| Yes | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Spastic Paraplegia | | | | | |
| No | 17 (100) | 33 (100) | 54 (96.4) | 41 (100) | p=0.348 |
| Yes | 0 (0.0) | 0 (0.0) | 0 (3.6) | 0 (0.0) | |
| Quadriplegia | | | | | |
| No | 17 (100) | 33 (100) | 53 (94.6) | 31 (75.6) | p<0.001* |
| Yes | 0 (0.0) | 0 (0.0) | 3 (5.4) | 10 (24.4) | |
| Epilepsy | | | | | |
| No | 16 (94.1) | 25 (75.8) | 44 (78.6) | 23 (56.1) | p=0.012* |
| Yes | 1 (5.9) | 8 (24.2) | 12 (21.4) | 18 (43.9) | |
| Paraplegia | | | | | |
| No | 17 (100) | 31 (93.9) | 48 (85.7) | 36 (87.8) | p=0.290 |
| Yes | 0 (0.0) | 2 (6.1) | 8 (14.3) | 5 (12.2) | |
| MSKD | | | | | |
| No | 17 (100) | 33 (100) | 56 (100) | 41 (100) | --- |
| Yes | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Hypothyroidism | | | | | |
| No | 16 (94.1) | 33 (100) | 56 (100) | 41 (100) | p=0.053 |
| Yes | 1 (5.9) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Hemiplegia | | | | | |
| No | 17 (100) | 32 (97.0) | 55 (98.2) | 40 (97.6) | p=0.904 |
| Yes | 0 (0.0) | 1 (3.0) | 1 (1.8) | 1 (2.4) | |
| Hemiparesis | | | | | |
| No | 17 (100) | 33 (100) | 55 (98.2) | 41 (100) | p=0.651 |
| Yes | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Down Syndrome | | | | | |
| No | 17 (100) | 31 (93.9) | 55 (98.2) | 38 (92.7) | p=0.407 |
| Yes | 0 (0.0) | 2 (6.1) | 1 (1.8) | 3 (4.1) | |
| Cardiac Anomaly | | | | | |
| No | 17 (100) | 32 (97.0) | 56 (100) | 41 (100) | p=0.324 |
| Yes | 0 (0.0) | 1 (3.0) | 0 (0.0) | 0 (0.0) | |
| Total | 17 | 33 | 56 | 41 | |

Table III: Percentages and association between Intellectual Disability and Medical Diagnosis continued.

| Medical Diagnosis | Intellectual Disability | | | | p-value |
|-------------------------|-------------------------|-------------------|-----------------|-------------------|---------|
| | Mild n (%) | Moderate n (%) | Severe n (%) | Profound n (%) | |
| Diabetes Millets | | | | | |
| No | 17 (100) | 33 (100) | 56 (100) | 41 (100) | --- |
| Yes | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | |
| Poor Vision | | | | | |
| No | 7 (100) | 33 (100) | 55 (98.2) | 41 (100) | p=0.585 |
| Yes | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Anemia | | | | | |
| No | 17 (94.1) | 33 (100) | 55 (98.2) | 41 (100) | p=0.651 |
| Yes | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Aphasia | | | | | |
| No | 17 (100) | 33 (100) | 55 (98.2) | 41 (100) | p=0.651 |
| Yes | 0 (0.0) | 0 (0.0) | 1 (1.8) | 0 (0.0) | |
| Cerebral Palsy | | | | | |
| No | 17 (100) | 31 (93.9) | 54 (96.4) | 37 (90.2) | p=0.413 |
| Yes | 0 (0.0) | 2 (6.1) | 2 (3.6) | 4 (9.8) | |

Attention Deficit Hyperactivity Disorder:

ADHD was found comorbid in about 18 (12.24%) of the patients. Three patients with mild ID (17.64%), six with moderate ID and eight with severe ID (14.28%) had a diagnosis of ADHD. None of those with profound disabilities suffered from ADHD. This finding is supported by various other studies as well.^{8,10,14} ADHD includes the symptoms of over activity, inattention, and impulsivity, which occur significantly higher in children with Learning Disabilities. Dekker and Koot (2003) found a 14.8% prevalence of ADHD in children attending special schools.¹³ Emerson (2003) reported an 8.7% prevalence of Hyperkinetic Disorder in children with global Learning Disabilities and 0.9% prevalence in the general population.¹³

Another retrospective study was done on patients under 19 years of age. ADHD was diagnosed in 25.5% of the patients. Of these, 28.3% had coexistent Expressive Language Disorder and 38.7% had to coexist mild Mental Retardation.¹⁴ This ascertains the fact that in children and adolescents with ID, symptoms and diagnosis of ADHD is rather a common finding. Another reason for increased percentage of ADHD might be seen in light of responsiveness to treatment shown in the study that ADHD symptoms in patients with Mental Retardation may be less responsive to medical treatment and more susceptible to side effects than in patients without Mental Retardation¹³.

Behavioural Disorder:

In our study 11.56% of patients had Behavioural Disorders. The results are consistent with a study conducted by Dekker et al in 2001 in Holland among 968 children of age 6 to 18 years with ID that revealed attention problems in 24.0%, delinquent behavior in 13.7%, and aggressive behavior in 19.2%.¹² In another study like ours, 15% of the adults with severe Learning Disabilities were found to have severe Behavioural Disorders, like Self-Injury, Restlessness, Aggressiveness, Destructiveness, and Impulsivity.¹⁶

Intellectual Disability and Physical Comorbidity

About 87 patients out of 147 had one or more physical comorbidities (59.2%) in our study sample. This finding is supported by literature that the prevalence rates of chronic health conditions in children with ID are higher than the prevalence rates in studies of children without ID.²

People with ID experience more chronic illness than the general.⁹ In our study, the most common medical comorbidities were Epilepsy (26.53%), Quadriplegia n=13 (8.84%) and Paraplegia n=15 (10.20%) and few had DM, n=8 (5.44%), and only one patient each had (0.68%) illnesses, including Hypertension, Cardiac Anomaly, Hypothyroidism, Impaired Vision and UTI whereas in another study different results were found

including; most common physical comorbidities along with mental sub normality are DM, Cardiovascular Disease, Asthma, and conditions affecting the bones and joints-Osteoporosis, Arthritis which were least present in our study.²²

Epilepsy:

In our study, 26.53% of the participants had comorbid Epilepsy. Out of half of the total patients, 67 (46.2%) 46 were on antiepileptic or mood-stabilizing medications.

Prevalence rates of Epilepsy were reported in 14 studies and ranged from 5.5% to 35.0%.⁷ Though a few studies showed a prevalence rate of Epilepsy to be as low as about 5.44% in the people with disabilities¹⁶, a systematic review showed not only higher rates (22%), but also that the most prevalent chronic health condition in children with ID was Epilepsy.⁵

There have been different postulations for this increased prevalence and frequent comorbidity. Corbet, 1981 found that Epilepsy and Mental Retardation have the same root cause, i.e. Cerebral Imperfection. Corbett (1974) found that Epilepsy in mentally subnormal with an intelligent quotient less than 50 is a particular problem of early childhood and the occurrences of seizures increases with the severity of retardation¹².

Diabetes Mellitus:

Various studies have postulated that people with ID are at greater risk of developing both Type 1 and Type 2 diabetes.²⁰ In our study 8 patients (5.44%) had DM. Unlike our study, McVilly found that the prevalence of diabetes in people with ID was 8.7% whereas it was 5.4% for the general population²¹. Peterson found that the prevalence of diabetes among people with ID was 19.4%.²²

One reason for not having so high a prevalence of DM in our sample could be that only a few patients were on antipsychotics which are known to increase the propensity of DM and Metabolic Syndrome if used in high doses and for the long term. Also, a major proportion of our population was in the younger age group so their exposure to antipsychotic medication was relatively not a very long term yet. Lack of continuous screening for DM could have been another reason for missing a few potential cases in this population as well.

Cerebral Palsy:

In our study, we found that only 8 patients (5.44%) had a documented diagnosis of CP. A study from Saudi Arabia revealed that CP was the most common neurologic disorder among Saudi children with a prevalence rate of 23.4%.²³ Another study reported overall, CP was the largest proportion of children (N = 163 (45.2%) with disability⁷. A systematic review has shown that the most prevalent chronic health condition in children with an ID is Epilepsy (22%) followed by CP (19.8%).⁵

This was the most unexpected finding of our study because most of our patients had issues of mobility and various motor disorders which are the main hallmarks of CP. One reason could be that the diagnoses were mainly taken from the medical records and the treating doctors synonymized the diagnosis of ID with CP or categorized them under diagnoses, such as Hemiparesis, Hemiplegia etc. Instead of CP.

Hypothyroidism

A systematic review suggested that the most prevalent chronic health conditions in children with ID were Endocrine and Thyroid Gland Disorders (e.g., Phenylketonuria, Hypothyroidism) which ranged from approximately 0.8% to 13.1%.⁷ Another study from Finland reported a prevalence of 0.6% of Congenital Hypothyroidism in children with ID.¹⁹

People with ID were also almost twice as likely as the general population to have Hearing Loss, Eczema, Dyspepsia, Thyroid Disorders, and Parkinson's Disease according to various studies.^{19,22}

These findings are in line with our study as we found n=1 (0.68%) prevalence of Hypothyroidism in our patients.

Down Syndrome:

When we look at various relevant studies, we find that the prevalence of Down's Syndrome was variable in different populations and settings. For example, one inpatient study found the prevalence to be between 2.1-20.3%⁷ in people with ID whereas another in Finland reported 14.3% individuals with down syndrome in a rehabilitation center for mentally subnormal individuals²³. In our population, the prevalence of Down's Syndrome was 4.76% (n=6). This is broadly in line with other available literature.

Other Disorders:

In our study, only one patient each had (0.68%) illnesses like Hypertension, Cardiac Anomaly, Impaired Vision and UTI which is somewhat the same as found in some other studies that reported the rates of disorders of Musculoskeletal, genital/urinary, digestive, or Circulatory Systems to be from 0.8% to 13.1%.⁷

Limitations

The main limitation of the study was that the design was observational and cross sectional, and the data was collected mainly using the records.

Conclusion

Physical and psychiatric comorbidities are common in ID patients. ADHD, Behavioural Disorders, and Epilepsy were predominant in the research. One third of the patients had both medical and psychiatric comorbidity. In such cases screening can play a major role in proper management of ID patients. Secondly, comorbidity and complexity of diseases makes it difficult to differentiate between both ADHD and Behavioural Disorders which might result in improper medication management.

Recommendations

Considering these findings and a high prevalence of medical and psychiatric disorders in this patient population, we highly recommend a regular physical and medical screening schedule by the experts in relative domains.

Also, improving the methods of record-keeping and reviewing the diagnosis by psychiatrists and medical specialists instead of general physicians will improve the accuracy of information and data. This can help in policymaking and service delivery by analyzing the needs and demands of these patients.

Also, the drug and medication practices would improve, for example, using stimulants in cases of ADHD, which was the most prevalent comorbidity, can bring about a significant improvement in the overall well-being of the individuals.

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Conflict of interests

The authors have no conflict of interest.

References

1. World Health Organization. World report on disability: World Health Organization. Geneva, Switzerland. 2011.
2. Tyrovolas S, El Bcheraoui C, Alghnam SA, Alhabib KF, Almadi MA, Al-Raddadi RM, Bedi N, El Tantawi M, Krish VS, Memish ZA, Mohammad Y. The burden of disease in Saudi Arabia 1990–2017: results from the Global Burden of Disease Study 2017. *The Lancet Planetary Health*. 2020 May 1; 4(5): e195-208.
3. Gautam P, Bhatia MS, Rathi A. Intellectual disability and multiple comorbid psychiatric disorders in a child: a case report. *Journal of clinical and diagnostic research: JCDR*. 2014 Nov; 8(11): W001.
4. Bindawas SM, Vennu V. The national and regional prevalence rates of disability, type, of disability and severity in Saudi Arabia—analysis of 2016 demographic survey data. *International journal of environmental research and public health*. 2018 Mar; 15(3):419.
5. Oeseburg B, Dijkstra GJ, Groothoff JW, Reijneveld SA, Jansen DE. Prevalence of chronic health conditions in children with intellectual disability: a systematic literature review. *Intellectual and developmental disabilities*. 2011 Apr; 49(2):59-85.
6. Jones N, Abu Hamad B, Odeh K, Pereznieto P, Abu Al Ghaib O, Plank G, Presler-Marshall E, Shaheen M. Every child count: Understanding the needs and perspectives of children with disabilities in the State of Palestine. UNICEF-State of Palestine. Overseas Development Institute (https://www.unicef.org/oPt/ODL_Report_01-06-2017_FINAL.pdf). 2016.
7. Lunsky Y, White SE, Palucka AM, Weiss J, Bockus S, Gofine T. Clinical outcomes of a specialized inpatient unit for adults with mild to severe intellectual disability and mental illness. *Journal of Intellectual Disability Research*. 2010 Jan; 54(1):60-9.
8. Uzun Cicek A, Sari SA, Mercan Isik C. Sociodemographic Characteristics, Risk Factors, and Prevalence of Comorbidity among Children and Adolescents with Intellectual Disability: A Cross-sectional Study. *Journal of Mental Health Research in Intellectual Disabilities*. 2020 Apr 2; 13(2):66-85.
9. Cleaver S, Hunter D, Ouellette-Kuntz H. Physical mobility limitations in adults with intellectual disabilities: a systematic review. *Journal of Intellectual Disability Research*. 2009 Feb; 53(2):93-105.
10. Platt JM, Keyes KM, McLaughlin KA, Kaufman AS. Intellectual disability and mental disorders in a US population representative sample of adolescents. *Psychological medicine*. 2019 Apr;49(6):952-61.
11. Deb S, Thomas M, Bright C. Mental disorder in adults with intellectual disability. 1: Prevalence of functional psychiatric illness among a community-based population aged between 16 and 64 years. *Journal of Intellectual Disability Research*. 2001 Dec;45(6):495-505.
12. Nath K, Naskar S. A clinical study on seizure disorder in intellectually disabled patients in Barak Valley, North-Eastern India. *Open Journal of Psychiatry & Allied Sciences*. 2016;7(1):46-53.
13. Haessler F, Thome J. Mental retardation and ADHD. *Zeitschrift für Kinder-und Jugendpsychiatrie und Psychotherapie*. 2012 Mar 1;40(2):83-93.
14. Al Haidar FA. Co-morbidity and treatment of attention deficit hyperactivity disorder in Saudi Arabia. *EMHJ-Eastern Mediterranean Health Journal*, 9 (5-6), 988-995, 2003.
15. McDermott S, Moran R, Platt T, Wood H, Isaac T, Dasari S. Prevalence of Epilepsy in adults with mental retardation and related disabilities in primary care. *American Journal on Mental Retardation*. 2005 Jan;110(1):48-56.
16. Pearson DA, Lachar D, Loveland KA, Santos CW, Faria LP, Azzam PN, Hentges BA, Cleveland LA. Patterns of behavioral adjustment and maladjustment in mental retardation: comparison of children with and without ADHD. *American Journal on Mental Retardation*. 2000 Jul;105(4):236-51.
17. Dekker MC, Koot HM. DSM-IV disorders in children with borderline to moderate intellectual disability. I: Prevalence and impact. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2003 Aug 1;42(8):915-22.
18. Bittles AH, Glasson EJ. Clinical, social, and ethical implications of changing life expectancy in Down Syndrome. *Developmental medicine and child neurology*. 2004 Apr;46(4):282-6.
19. Arvio MA, Sillanpää M. Prevalence, etiology and comorbidity of severe and profound intellectual disability in Finland. *Journal of Intellectual Disability Research*. 2003 Feb;47(2):108-12.
20. Bittles AH, Petterson BA, Sullivan SG, Hussain R, Glasson EJ, Montgomery PD. The influence of intellectual disability on life expectancy. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*. 2002 Jul 1;57(7):M470-2.
21. McVilly K, McGillivray J, Curtis A, Lehmann J, Morrish L, Speight J. Diabetes in people with an intellectual disability: a systematic review of prevalence, incidence and impact. *Diabetic medicine*. 2014 Aug;31(8):897-904.
22. Peterson, M. D., Gordon, P. M., & Hurvitz, E. A. (2013). Chronic disease risk among adults with cerebral palsy: The role of premature sarcopenia, obesity and sedentary behaviour. *Obesity Reviews*, 14(2), 171-182. doi:10.1111/j.1467-789X.2012.01052.x
23. Al Salloum AA, El Mouzan MI, Al Omar AA, Al Herbish AS, Qurashi MM. The prevalence of neurological disorders in Saudi children: a community-based study. *Journal of child neurology*. 2011 Jan;26(1):21-4.