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Ereny Gobrial,

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Comorbid mental health disorders in children and young people with intellectual disabilities and autism spectrum disorders

Ereny Gobrial

Abstract

Purpose – Children and young people with comorbid intellectual disabilities (ID) and autism spectrum disorders (ASD) are more likely to exhibit comorbid mental health disorders (MHD) and other significant behaviours (SB) in addition to the core symptoms of ASD. The purpose of this paper is to identify the prevalence of comorbid MHD and behaviours in children and young people with ID and ASD in Egypt.

Design/methodology/approach – The Reiss scale for children's dual diagnosis was administered by parents and teachers of 222 Egyptian children and young people with mild/moderate ID and ASD to screen for MHD and SB. The mean age of children and young people was 12.3 years ($SD = 3.64$), with 75.6 per cent male.

Findings – The results revealed that 62.2 per cent of children and young people with ID and ASD had high rates of comorbid MHD and behaviour disorders were shown in 64.4 per cent of the participated children and young people. The results identified anger, anxiety and psychosis being the most frequently diagnosed disorders while crying spells and pica were the most SB. No differences were found between the male and female with ID and ASD in the current study.

Research limitations/implications – Mental health assessment of children and young people with ID and ASD will help to highlight the needs of these vulnerable children and develop the appropriate services.

Originality/value – The findings highlight the prevalence of MHD in children and young people with ID and ASD in Egypt. This has implications on the assessment of comorbid disorders and services needed for children with ID and ASD in Egypt.

Keywords Egypt, Mental health, Children, Intellectual disabilities, Comorbidity, Autism spectrum disorder

Paper type Research paper

Ereny Gobrial is based at the Department of Mental Health, Faculty of Education, Zagazig University, Zagazig, Egypt.

Introduction

There is substantial evidence emphasising that children and young people with intellectual disabilities (ID) are more vulnerable to experience comorbid mental health disorders (MHD) than typically developed children (Emerson and Hatton, 2007; Einfeid *et al.*, 2011; Munir, 2016). A prevalence of 36 per cent comorbid MHD including problem behaviours has been reported in children and young people with ID, compared with 8 per cent in those without ID (Hughes-McCormack *et al.*, 2017). Similarly, children with autism spectrum disorder (ASD) are at a significantly higher risk of comorbid psychopathology (De Bruin *et al.*, 2007; Matson and Nebel-Schwalm, 2007; Parr *et al.*, 2011; Salazar *et al.*, 2015; Lever and Geurts, 2016). Mattila *et al.* (2010) reported 74 per cent multiple comorbid psychiatric disorders in children with ASD, suggesting that behavioural disorders were shown in 44 per cent.

Although research evidence has indicated that children and young people with comorbid ID and ASD are more prone to experience MHD compared to individuals without ASD, there is still disputed

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research findings whether comorbid MHD are higher or not among individuals with ID and ASD than without ASD. Some epidemiological studies suggested that comorbid MHD occur at particularly higher rates in children and young people with ID and ASD compared with other children with ID but without ASD (Gadow *et al.*, 2004; Brereton *et al.*, 2006; Herring *et al.*, 2006; Gillberg and Fernell, 2014). The study by Bradley *et al.* (2004) illustrated that adolescents and young people diagnosed with ASD and severe ID reported higher prevalence rates of psychiatric and behaviour disorders than those without ASD, although Melville *et al.* (2008) indicated that there are no differences in prevalence or incidence of either mental ill-health or problem behaviours in adults with ASD and ID compared with individually matched controls with ID but without ASD.

This is of great concern considering that comorbidity of ID and ASD suggests an increased risk for comorbid psychopathology. The vulnerability to comorbid MHD the case may be due to the core features of ID and ASD that can pose risks to children's mental health. For instance, low intellectual and communication ability, lack of social and cognitive resources and poor coping skills might affect the increased prevalence rates of MHD (Deudney and Shah, 2004; Wilson *et al.*, 2005; Smiley, 2005). Low intellectual ability and poor cognitive skills are more likely to lead to poor self-esteem and, in turn, increased vulnerability to anxiety disorder. Likewise, poor coping skills are associated factor, as unfamiliar problem-solving tasks for children with ASD could contribute to anxiety and depression disorders (Henry and Crabbe, 2002).

These comorbid disorders may add further impairments to individuals with ID and ASD and are substantially more prevalent compared to neurotypical populations (Matson and Nebel-Schwalm, 2007; Simmonoff *et al.*, 2008; Mannion *et al.*, 2014). The multimorbidity of ID and ASD and overlapping conditions interfere with interpersonal skills, school performance, family relationships and cognitive ability (Rommelse *et al.*, 2010). Experiencing MHD can be disabling for children and young people with ID and ASD, resulting in negative consequences for them and their families. MHD often cause more distress to caregivers than the core features of the ID and ASD (Hastings *et al.*, 2006; Lecavalier *et al.*, 2006). Research shows that parents of children and young people with ASD are more likely to be stressed or depressed compared to other parents (Heiman and Berger, 2008; Fido and Al Saad, 2013; Omar *et al.*, 2017). Furthermore, because of discrimination and stigma surrounding disabilities lead many families in Egypt to be socially isolated and not engaged in any social activities and often keep their child at home (Gobrial, 2018a). Accordingly, those children who are socially isolated and lack important support systems are more likely to experience MHD. Comorbid ID and ASD presents with multimorbidity and developmental delay require assessment and intervention.

While there has been an abundance of research investigating comorbid MHD in individuals with ID and ASD, very little literature available in Egypt focused on the comorbid MHD in children with ID and ASD. In a sample of children with ASD recruited from three Arab countries Egypt, Saudi Arabia and Jordan, Amr *et al.* (2011) indicated that 63 per cent of the children are diagnosed with at least one comorbid disorder. The most commonly reported comorbid disorders were anxiety disorders (58.3 per cent), ADHD (31.6 per cent), conduct disorders (23.3 per cent) and major depressive disorders (13.3 per cent).

The increasing number of individuals with ID and ASD and comorbid MHD present a key challenge to their assessment and treatment in mental health services. The comorbidity in children and young people with ASD may have important consequences on their overall well-being in both the immediate and longer term as well as impact on their family well-being (Weiss *et al.*, 2014). Early detection of the comorbid MHD and significant behaviours (SB) at any point in the child's development is vital regard treatment and early intervention. Thus, identifying comorbidities is considered a crucial point for treatment, services needed and medical support. Delaying assessment and intervention to children with ID and ASD increases the impact of the condition and the challenges involved in service provision and support. To date, there are no prevalence studies of comorbid MHD in children with ID and ASD in Egypt.

Given that previous studies have reported high prevalence of comorbid MHD with individuals with ID and ASD and the scarce literature on the prevalence of comorbid disorders with ID and ASD in Egypt, to the best of the author's knowledge, the main aim of this study was to investigate the prevalence of comorbid MHD and SB among children with ID and ASD in an Egyptian sample.

Method

Participants

The current study included 222 children and young people with mild to moderate ID ($50 \leq IQ \leq 70$). These were drawn from a pool of pupils who were attending special education schools, private schools and day care centres (a special needs day nursery for children with disabilities), located in Sharkiya and Cairo governorates in Egypt. There were approximately 500 pupils who were enrolled in the above services and were expected to have an ID, ASD or ID and ASD. All the participants' scores met cut-off point for ASD according to the childhood autism rating scale (CARS) (Schopler *et al.*, 1986) and IQ assessment using the Stanford Binet intelligent scale assessed by an expert clinical psychologist, based on their school records. The eligible participants for this study were all children classified as having both ID and ASD. Children classified as having an ID (without ASD) or ASD (without ID) were excluded.

All parents and teachers who expressed interest and had children or young person that fulfilled the eligible criteria were involved in this study. In total, 222 children and young people aged 5–20 years, with a mean age of 12.34 years ($SD = 3.64$) were involved. The majority of the participants were male 75.6 per cent ($n = 168$), while 24.4 per cent ($n = 54$) were female. Parents and teachers completed the Reiss scale for children's dual diagnosis based on their best knowledge of those children. Participants' characteristics are presented in Table I.

Instruments

The Reiss scale for children's dual diagnosis (Reiss and Valenti-Hein, 1990) was applied in this study to measure the comorbid MHD. The Reiss was translated into Arabic and adapted to an Egyptian population. The scale consists of 60 items that ask parents to report on the frequency of which an item is true for their children. The 60 items are organised into ten psychometric subscales, that each item on the scale is presented in three parts: the name of the symptoms, a non-technical definition and common behavioural examples. Each item is rated on a three-point scale from 0 "not a problem", 1 "problem" to 2 "major problem". This is a screening tool to determine if a child or a young person with ID has comorbid MHD, which reflects the severity of psychopathology.

Table I Sample characteristics

Sample size	$n = 222$
Gender	
Male	$n = 168$ (75.6%)
Female	$n = 54$ (24.4%)
Children (5–12 years)	$n = 109$
Young people (13–20 years)	$n = 113$
Mean age (SD)	12.34 years ($SD = 3.64$)
Gender	
Male	12.23
Female	12.69
+Ve Mental health disorders	$n = 138$ (62.2%)
Gender	
Male	$n = 107$ Mean = 34.52 ($SD = 17.4$)
Female	$n = 31$ Mean = 32.92 ($SD = 17.2$)
Age	
Children	$n = 68$
Young people	$n = 70$
Significant behaviour	$n = 144$ (64.8%)
Gender	
Male	$n = 106$ Mean = 4.4
Female	$n = 38$ Mean = 4.3
Age	
Children	$n = 82$
Young people	$n = 62$

The Arabic adapted version of the Reiss scale was validated in an Egyptian population of children with ID and ASD (Gobrial, 2018b). The Arabic version of the Reiss scale has shown good reliability using SPSS-24 for Windows, Cronbach's α was (0.916) and Pearson correlation between the behaviour disorders' score and the overall score was (0.817).

Procedures

Ethical approval was obtained from the university ethical committee of Zagazig University. Parents were recruited from a variety of sources including contact with special education schools and private day care centres from the Sharkiya and Cairo governorates, Egypt. Letters were sent to parents of the children and young people with ID and ASD through the schools and the other service users of day care centres. Parents and teachers of the 97 children and young people from five different schools, who expressed interest, participated in this study. In addition to this, 125 parents were also recruited from different private day care centres. Consent was sought successfully from all participants. The Reiss scale for children's dual diagnosis was applied to screen for MHD in children and young people with ID and ASD. This was administered by parents and teachers in the present study for each participant.

Analysis

Statistical analyses were performed with SPSS version 24.0. Descriptive statistics were used to present the findings. The cut-off points (29) were used to identify children and young people who scored at or above the cut-off score for MHD. According to the Reiss scale test manual, a child was considered to test "positive" for MHD if one or both of the following conditions were true: the total score is 29 or higher; at least two of the ten psychometric scales are at or above the suggested cut-off points.

Prior to analysis, the data were screened for normality. A Kolmogorov–Smirnov test ($p < 0.05$) and a visual inspection of their histograms showed that the Reiss scores were not evenly distributed for both males and females. The Spearman correlation was used to compare the MHD of male to female on Reiss. The association of age and comorbid disorders were analysed by using χ^2 tests. χ^2 test was also used to investigate differences between the Reiss score and SB.

Results

The present study screened 222 children and young people with ID and ASD for comorbid MHD and other SB in Egypt. As illustrated in Table II, the findings showed high prevalence rates of MHD among children and young people with ID and ASD, 138 out of 222 (62.2 per cent) were scored positive for MHD based on the total score criteria of the Reiss scale. The highest incidence was for anger, psychosis and anxiety disorders, while the lowest was for poor self-esteem. In relation to the gender, 63.7 per cent (107/168) of males tested positive and 57.4 per cent (31/54) of females tested positive.

Category	Mean	SD	Total No.	%
Anger	5.92	2.856	90	40.5
Anxiety	4.06	2.314	76	34.2
Attention deficit	3.58	2.272	60	27
Autism	4.81	2.492	51	22.9
Conduct disorder	3.33	2.757	47	21
Depression	3.26	2.307	39	17.5
Poor self-esteem	2.97	2.194	20	9
Psychosis	4.49	2.470	79	35.5
Somatoform behaviour	1.89	2.297	23	10.3
Withdrawn	4.65	2.596	63	28.4
+Ve Mental health Total Reiss (severity)	34.13	17.428	138	62.2

Gender, age and the Reiss MHD total score

χ^2 test showed no association between MHD Reiss total score and gender ($\chi^2 = 0.947$, $r = -0.040$ at 0.01 level). χ^2 test was also performed to identify the differences between Reiss score for MHD and age groups (children and young people). Prevalence of MHD did not vary significantly according to age ($\chi^2 = -0.091$, $p = 0.082$, at level 0.05, $df = 0.163$). The χ^2 analyses indicated no significant difference between the age groups.

Rates of the significant behaviour

The findings of the current study identified that 64.4 per cent of the sample had associated SB (see Table I). The most common SB were involuntary motor movement (12.6 per cent); pica (11.2 per cent), followed by crying spells (10.3 per cent). The less common behaviours were set fires (1.8 per cent), as shown in Table III. The findings showed that there were more prevalence rates of behaviour disorders in children that attended primary school 75.2 per cent ($n = 82/109$) than in children in secondary school 54.8 per cent ($n = 62/113$).

Association between mental health disorders and significant behaviour

The findings illustrated that 48.2 per cent of the participants were identified with both positive MHD and associated SB (see Figure 1). Crying spells and verbal abuse were most presented with anxiety and anger disorders, 25 per cent of those with anger and 16 per cent of children with anxiety had crying spells. Findings of the Spearman correlation test ($r = 0.691$, $p = 0.000$, at level 0.01, $df = 0.036$) indicated no significant statistical correlation between Reiss score of MHD and SB among the participants.

Discussion

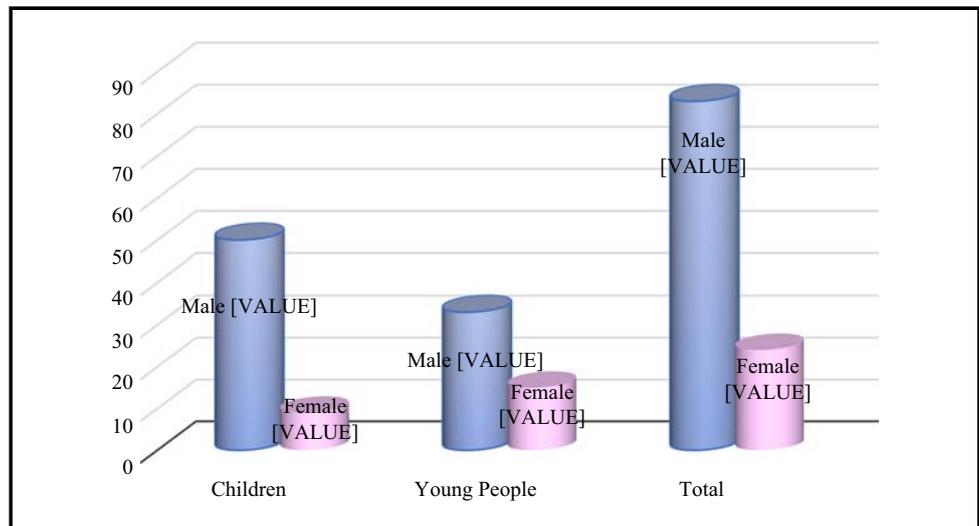
The results of this study indicated high prevalence rates (62.2 per cent) of comorbid MHD among children and young people with ID and ASD, of which 48.3 per cent were male and 13.9 per cent were female. The findings are consistent with earlier research concerning children and adolescents who have ID and ASD in other countries that have also demonstrated high prevalence rates of comorbid MHD (Berney, 2000; Le Couteur, 2003; Bishop, 2010; Gillberg and Fernell, 2014). However, the current findings are higher than other studies which reported a 30–33 per cent prevalence of MHD in young children with ASD (Green *et al.*, 2005; Hartley and McCoy, 2008).

The comorbidity with MHD such as withdrawn, attention deficits, anxiety, psychosis and depression have shown as highly prevalent in children and young people with ID and ASD; this is in accord with previously published research (White *et al.*, 2009; Levy *et al.*, 2010; Mayes *et al.*, 2011; Gobrial and Raghavan, 2012). The current findings indicate that anger and anxiety are the

Table III Number and percentage of individuals tested positive on each significant behaviour

Other significant behaviours (SB)	No.	%
Significant behaviours	144	64.8
1. Crying spells	23	10.3
2. Enuresis	21	9.5
3. Hallucinations	12	5.4
4. Involuntary motor movement	28	12.6
5. Lies	21	9.5
6. Obese	11	5
7. Pica	25	11.2
8. Sets fires	4	1.8
9. Sexual problem	9	4
10. Verbally abusive	14	6.3

Figure 1 Age groups and gender with comorbid Mental health disorders and significant behaviour



most marked comorbid psychopathology among children and young people with ID and ASD in Egypt. This is in line with the literature previously reported for children with ID and ASD (Amr *et al.*, 2011; Mayes *et al.*, 2011; Gobrial and Raghavan, 2012). Anxiety has seen as the biggest comorbidity in ID and ASD (Tantam, 2014) as well as anger (Gobrial and Raghavan, 2012). It is recognised that emotional problems occur frequently in young people with ID and ASD in consequence of the symptoms of the ASD (Leyfer *et al.*, 2006), as illustrated earlier in the introduction. The Reiss scale may have clinical utility and aid clinical decision making.

The findings indicate that the prevalence of MHD did not vary significantly according to age. These findings are consistent with Tsakanikos *et al.* (2011) revealing that there were no significant differences in age among adults with ID and ASD. Although, the findings reported that some MHD such as anger and withdrawal were more common among younger children. However, prevalence rates of anxiety and depression are higher among the older age group. This concurs with previous research which indicated that some comorbid disorder rates, including anxiety and depression, increase with age (Mayes *et al.*, 2011; Gobrial and Raghavan, 2012).

With respect to gender, the findings reveal that there are no associations between comorbidity and gender in line with other studies (e.g. McCarthy *et al.*, 2010) and differ from other studies (e.g. Tsakanikos *et al.*, 2011) which reported adults male with ASD were more likely to have comorbid psychopathology and clinical management.

With respect to the associated SB, the current findings reported that SB were shown in 64.4 per cent of the participants. However, this is higher than other studies which reported 44 per cent of behaviour disorders (Mattila *et al.*, 2010). The findings suggest that crying spells and pica were frequently co-occurring with anxiety and anger among children and adolescents with ID and ASD. Perhaps underlying ASD symptoms such as lack of social understanding or the discomfort associated with breaking a routine are attributed to these behaviours (Autism Speaks, 2012). This, in turn, may promote crying spell behaviours. However, it is not clear whether these results specifically related to the comorbid MHD or to the core features of ASD (McCarthy *et al.*, 2010). Literature suggests that pica is relatively common in children with ASD (Matson *et al.*, 2013).

Implications and limitation

This study has many implications. First, assessment on Reiss scale is cost effective and helps in making appropriate decisions regarding further evaluations, interventions and referrals.

Second, mental health assessment will help to highlight the need for this vulnerable group and develop appropriate services. A great deal of research is needed to determine how best to assess and treat these disorders within the context of ASD. Further research is warranted to better understand the common comorbidities, behaviours and associated risk factors. Future studies which could determine what interventions are effective in reducing comorbid MHD in children and young people with ID and ASD merit attention. Investigating the impact of comorbid disorders and associated behaviour disorders in children and young people with ASD and ID should be investigated. In Egypt, there is lack of specialist child ID mental health services and lack of assessment and diagnostic tool that is validated in the Arabic language and adapted to Egyptian culture. The current study used Reiss scale of children's dual diagnosis, a validated measure of comorbid mental health that has been validated on an Egyptian sample. This is the first reliable and valid measurement of MHD that has been validated in Arabic for children with ID and ASD.

Limitations of this study should also be pointed out. The small sample size and the limited demographic area in recruiting participants of children with ID and ASD need to be solicited from a countrywide representative sample for generalisation and transferability of the findings. Future research might investigate the prevalence of comorbidity with ID and ASD on a larger sample. The current screening was limited to children and young people with mild/moderate ID and ASD. The assessment of the comorbid disorders in children with ID and ASD requires further investigation.

Conclusion

This study indicates the high prevalence rates of comorbid MHD and SB in children and young people with mild to moderate ID and ASD in Egypt. The results support common prevalence (62.2 per cent) of comorbid disorders in ID and ASD. The comorbid disorders with ID and ASD will increase the burden on the parents and affect family well-being. All of this highlights the importance of screening for MHD in children and young people with ID and ASD. There is a tremendous need for psychologists to be able to provide assessments of comorbid MH with ID and ASD and provide appropriate interventions to address these disorders. This will have a positive impact not only on the children but also their parents and consequently improve family's well-being.

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Corresponding author

Ereny Gobrial can be contacted at: ereny.gobrial@hotmail.co.uk

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