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RESEARCH ARTICLE

**CHALLENGING BEHAVIOURS IN INDIVIDUALS WITH INTELLECTUAL
AND DEVELOPMENTAL DISABILITIES: RESIDENTIAL SETTING MAKES
A DIFFERENCE**

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ABSTRACT

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The present study investigated on the prevalence of challenging behaviours in individuals with intellectual and developmental disabilities (IDD). Many researches support the view that challenging behaviours are provoked by residential settings. Subscribing to the same view, in the current investigation, drawing a cohort sample (Parents' homes: 64, Institutions: 64) after controlling for age and gender in individuals with IDD of two different residential setting (Parents' homes: 261, Institutions: 191), differences in their challenging behaviours were compared. The prevalence (yes or no) of various forms in challenging behaviours was obtained and differences were ascertained with statistical significance. With the exception of odd/repetitive, individuals living in institutions showed more aggression, self-injury, disruptive and destructive forms of challenging behaviours, when compared with their parents' homes counterparts. The study reported overall prevalence rate of nearly 40% (from a sample of 452 individuals with IDD) exhibiting one or more forms of challenging behaviours. The highly prevalent behaviours were leaves the seat [without permission or purpose] (39%), laughs or giggles for no reason (34%), interrupts while talking (30%), makes vocal noises (29%), kicks/pushes/bangs on others (29%), obsessed to certain objects or activities (28%), wanders off [from assigned time or place] (27%), fondles genitals (27%), snatches things from others (26%) and uses bizarre speech [echolalia/slurred/talking to self] (26%). The least prevalent behaviours -ranging from 4% to 9%- included inappropriate contact with members of opposite sex, pokes eye/ear/nose on self, pulls own hair, peels/pinches/scratches skin on self, tell lies/twists truth, picks nose & eats non-food items, coils hair [own/others], sucks thumb and steals objects. The authors recommended to create center based services that would integrate behaviour therapy with special education services for intervention of challenging behaviours in individuals with IDD.



INTRODUCTION

Challenging behaviours are highly prevalent and persistent among individuals with intellectual and developmental disabilities (IDD). Not only do they pose limitations to the individual's development and functioning, they also have much influence on the parental or care giver stress and present heightened challenges to the staff dealing with such individuals. The term 'challenging behaviour', which is currently in use, has had many references in the past such as behaviour problems, maladaptive, disruptive, aberrant and deviant. In a pedagogical standpoint, the behaviour is considered to be challenging only when a person attending to such behaviours experience problems in dealing with the behaviour. Notwithstanding, if the behaviour results in substantial reductions in the quality of life of the individual and lead to restrictive practices such as locking indoors, physical or mechanical restraints, undue medication and seclusion, also is considered to be challenging. The very purpose of using the term 'challenging behaviour' is to curtail people from labeling it as a problem in person. National Institute for Health and Care Excellence (NICE: Guideline, No. 11, 2015) emphasize that 'challenging behaviour' is direct outcome of the interaction between the person and his or her environment.

IDD as such is not a diagnosis but many research studies use this term in the context of 'Intellectual Disability', 'Autism' or 'Attention Deficit Hyperactive Disorder'. Diagnostic and Statistics Manual: *DSM 5* classifies these three types of disabilities under 'Neuro Developmental Disorders'. Also, the term 'Intellectual and Developmental Disorder' is used by International Classification of Diseases: *ICD11* for diagnosis of Intellectual Disability (ID). Another prominent agency, American Association on Intellectual and Developmental Disabilities (AAIDD), formerly AAMR (American Association on Mental Retardation) which provides worldwide leadership, uses the term IDD to refer to the population of intellectual disability.

IDD can be considered to be a broad coverage for conditions where intellectual disability and developmental disabilities are co-existing. Intellectual disability refers to poor intellectual functioning and deficits in adaptive behavior that occurs during developmental period, that is, 18 years of age. "Developmental disabilities" are a group of conditions that covers chronic disabilities that can be cognitive, physical or both, which manifests before the age of 22.

The concomitancy of these two conditions is more commonly seen i.e., Cerebral Palsy, Epilepsy, Down syndrome, Fragile-X syndrome and Microcephaly are often associated with intellectual disabilities.

The common behaviour problems seen in IDD are: aggressive behaviours such as attacking others, destroying objects and verbal abusing; disruptive behaviours such as excessive crying, tantrums, and attention seeking; self-injurious behaviours such as head banging, biting or peeling skin; stereotypical behaviours namely bizarre vocalizations and speech, rocking, aimless wandering, gazing, hand wringing etc.; other socially unacceptable behaviours such as removes clothing, touching or playing with genitals, touching others inappropriately; and anti-social behaviours such as lying, stealing etc.

Bowring et al. (2016) reported prevalence (18.1%) of challenging behaviour and that stereotypy was the most frequent type of challenging behaviour in a total population study in UK. Jyoti Prakash, Sudarsanan & Prabhu (2007) reported 66% of children with intellectual disabilities ($N=50$) in the age group of 6 to 14 years to have behaviour problems. A study by Lowe et al. (2007), accounted on aggression (28% to 50%), self-injury (19% to 35%), destructive (16% to 42%) and overall (64%). Kishore et al. (2005) reported aggression (50%), sleep problems (42%), eating problems (28%), inattentiveness (26%) and attention seeking (23%) in individuals with intellectual disabilities ($N=60$).

The prevalence estimates depends on a variety of methodological issues and phenomenology of the behaviours that challenges. Emerson & Einfield (2011) stated that the setting in which the behaviours occur exert an influence to consider it as challenging or no. Borthwick Duffy (1994) pointed out the disparity of prevalence figures in institutional settings (49%) and community settings (3%). Individuals with IDD do not have the capacity to provide personal account of their challenging behaviours and quite often the surveys on challenging behaviours use staff or carer reports. For an epidemiological study, use of direct observation method is almost impossible and therefore studies rely on informant reports. Only in clinical interventions, comprehensive case assessment by observations and corroborating evidences with all those involved are even possible and feasible. Also, the very definition used for the



count of challenging behaviour, which is quite pervasive, may lead to contradictions.

The two important definitions that may be considered to be in full view to defining challenging behaviours are:

The Royal College of Psychiatrists, British Psychological Society and Royal College of Speech and Language Therapists (2007, in Royal College of Psychiatrists, 2016) defined 'challenging behaviour' as: "*Behaviour of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion*".

Another commonly used definition given earlier by Emerson (1995, in Emerson, 2001) is:

Culturally abnormal behaviour(s) of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit use of, or result in the person being denied access to, ordinary community facilities.

A number of factors are implicated with behaviour that challenges and some of them are age, gender, degree of disability, communication difficulties, genetic phenotypes, sensory impairments and social environments. Although early identification of risk factors is pertinent to preventive early intervention of challenging behaviours, the role of social environments is almost a major cause for escalating challenging behaviours. The aspects of social environments such as barren and no stimulation, no social interactions, high control or no access to preferred activities and lack of supervision is very exerting on the challenging behaviours. It is presumed that institutional settings -where supervisory ratio is less, regimented or restricting environments are common, socializing opportunities are scarce, depersonalization in roles and lack of personal advocacy – provoke challenging behaviours in individuals with IDD juxtaposed living with families.

AIM & OBJECTIVES

The aim of the present study was to investigate the effect of residential settings on challenging behaviours in individuals with IDD. In order to achieve this aim, the following objectives were formulated.

1. To list the challenging behaviours in IDD

2. To find out the occurrence of the challenging behaviours in individuals with IDD
3. To examine the differences in the occurrence of challenging behaviours based on the residential settings of the individuals with IDD.

METHOD & MEASURES

The study was primarily a descriptive research and adopted a survey method. The sample was selected from 5 special schools ($N=261$) and two residential institutions ($N=191$), serving for individuals with IDD. Any establishment providing services to individuals with IDD are required to obtain a license from the Government for offering such services to individuals with IDD; individuals themselves are issued with identity cards for availing institution based services and for eligibility of various welfare schemes offered by the State. The identity card is issued after thorough examination or assessment by competent authority appointed duly by the local Government. Thus, individuals with IDD having identity card and are availing services in any licensed establishments for such purpose may be deemed as 'administratively defined' for that disability. It is construed that, the categories 'Intellectual Disability' or 'Autism Spectrum Disorder' maintained by the Directorate of Rehabilitation of the Disabled, Government of Tamilnadu largely include IDD. Apart from this identification strategy, any other disability specific diagnosis was not carried out in the present research.

Tool used: For this purpose, a checklist of 50 items comprising of various challenging behaviours was developed using multiple sources (direct observations, drawing from existing instruments that measured challenging behaviours and parent or teacher reports). The collected behaviours were modified into operant terms and some behaviours were combined into one, as they belonged to similar topography. The occurrence was measured by 1 for Yes and 0 for No. Although the behaviours could be classified into categories of common form, an item-wise analysis was preferred to understand the nature and individual differences in each of those challenging behaviours included in the checklist. Procedure: Owing to the cognitive limitations in the present sample, the information about challenging behaviours was obtained from their parents or care giver. After getting informed



consent, the occurrence of such behaviours were ascertained from the parents or care givers of the individuals with IDD. Also, information on age, gender and residential settings (parent home or institution) was collected. The respondents were assured of privacy, confidentiality and anonymity in the research.

RESULTS AND DISCUSSION

The results of the frequency analyses ($N=452$) of the 50 items of the checklist are displayed in *Figure 1*. The missing data, i.e., no record of either 'Yes' or 'No' ranged from 1 to as many as 5 in the responses provided for the behaviours and were excluded from the analyses.

From the *Figure 1*, it can be seen that behaviours - Makes vocal noises (29%); Laughs or giggles for no reason (34%); Fondles genitals (27%); Interrupts while talking (30%); Uses bizarre speech [echolalia/slurred/talking to self] (26%); Obsessed to certain objects or activities (28%); Wanders off [from assigned time or place]

(27%); Leaves the seat [without permission or purpose] (39%); Kicks/pushes/bangs on others (29%); slaps/hits/pinches/- punches others (25%); Snatches things from others (26%); Non-adherence to routines or commands (24%); Wrings/flaps/gazes hands & Overactive or impulsive, 23%; Rocks/spins around & Screams/drops on the floor/clenches hands, 22%; Touches or hugs inappropriately, Smells [People/objects] & Throws objects at others, 21%; Bangs objects & cries excessively, 20% - are highly prevalent among the sample.

Also, behaviours such as -Inappropriate contact with members of opposite sex (4%); Pokes eye/ear/nose on self & Pulls own hair (9%); Peels/pinches/scratches skin on self, Tell lies/Twists Truth, Picks nose & Eats non-food items, 10%; Coils hair [own/others] (6%); Sucks thumb (7%); Steals objects (8%) - are least prevalent in the sample. Other behaviours were found in 11% to 19% of the sample.

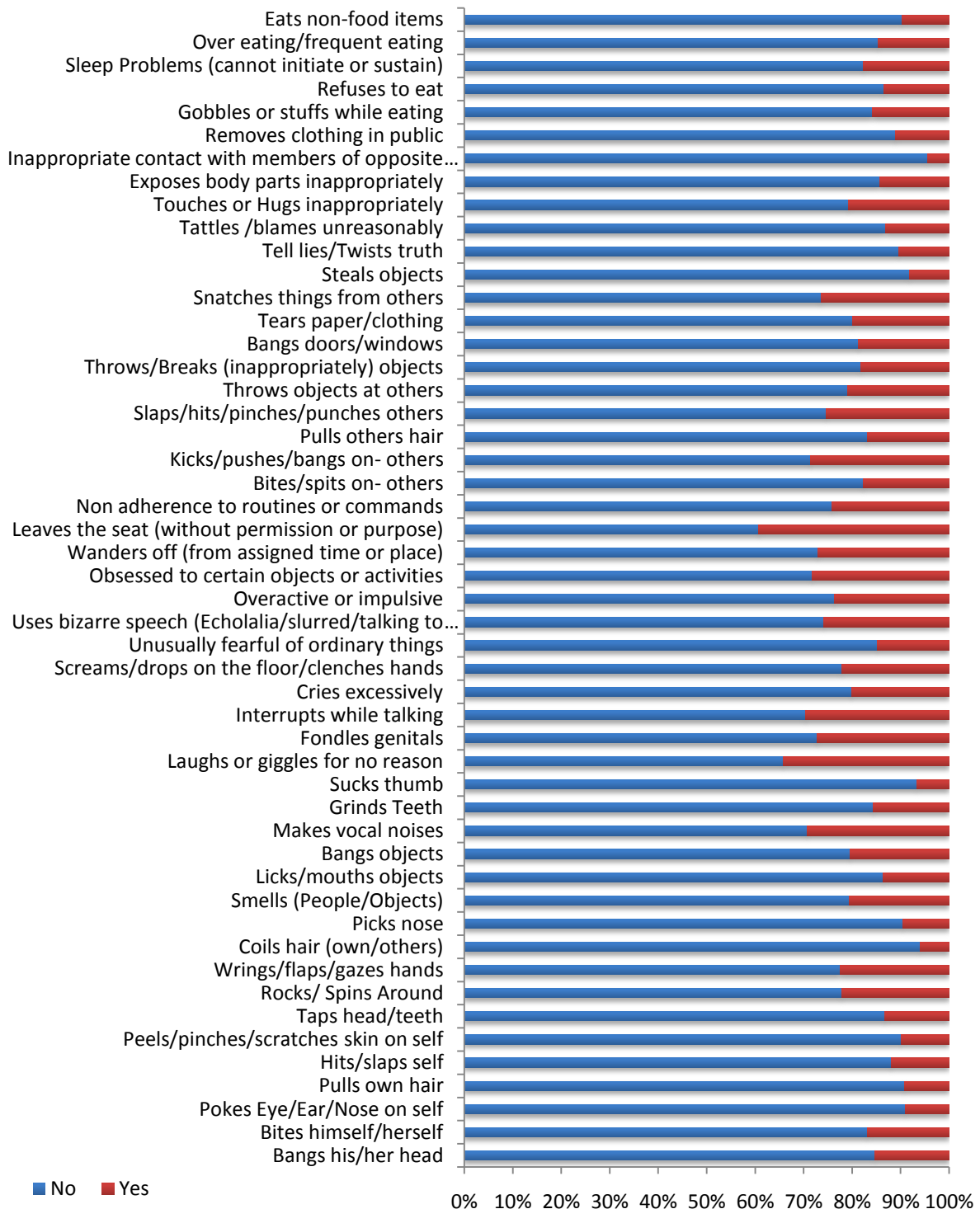


Figure 1. Frequency of Challenging Behaviours in the Sample. (N=452)

For studying the differences in residential settings, a cohort sample (N=128) was drawn from the primary sample (N= 452); to minimize the variance, a procedure called ‘matching’ was

followed, where in gender and age was equally matched in the two groups, i.e., individuals living in parents’ homes and those living in institutions. Thus, the cohort sample was in the age



range of 7 years through 21 years (7 years: 2, 8 years: 8, 11 years: 4, 12 years: 4, 14 years: 6, 15 years: 6, 16 years: 6, 17 years: 6, 18 years: 6, 19 years: 8, 20 years: 6 and 21 years: 2) distributed in the two groups equally. The sample design is illustrated in *Figure 2*.

setting) are categorical, Chi-Square Analysis was used to examine if the differences between the two groups were significant and the results are displayed in *Table 1*.

Figure 2. Matched Sampling Design

After controlling for age and gender in the sample ($N=128$), the occurrence (yes or no) of challenging behaviours was compared by residential setting (living in parents' homes and living in institutions). As both dependent variable (occurrence) and independent variable (residential

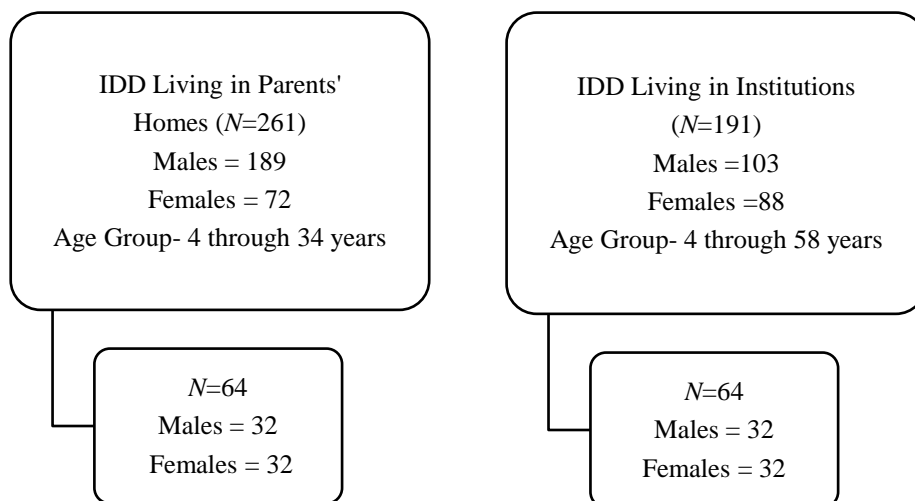




Table 1. Occurrences of Challenging Behaviours by Residential Settings: Chi Square Analysis (N=128)

Variables (i=50)	Occurrence	Residential Setting		χ^2	df
		Living in Parents' Homes	Living in Institutions		
1. Bangs his/her head	Yes	7 (10.5)	14 (10.5)	2.791[NS]	1
	No	57 (53.5)	50 (53.5)		
2. Bites himself/herself	Yes	9 (13)	17 (13)	3.089[NS]	1
	No	55 (51)	47 (51)		
3. Pokes Eye/Ear/Nose on self	Yes	4 (7.5)	11 (7.5)	3.700*	1
	No	60 (56.5)	53 (56.5)		
4. Pulls own hair	Yes	4 (9)	14 (9)	6.465*	1
	No	60 (55)	50 (55)		
5. Hits/slaps self	Yes	8 (8.5)	9 (8.5)	.068[NS]	1
	No	56 (55.5)	55 (55.5)		
6. Peels/pinches/scratches skin on self	Yes	7 (9)	11 (9)	1.034[NS]	1
	No	57 (55)	53 (55)		
7. Taps head/teeth	Yes	6 (10.5)	15 (10.5)	4.614*	1
	No	58 (53.5)	49 (53.5)		
8. Rocks/ Spins Around	Yes	13 (15)	17 (15)	.697[NS]	1
	No	51 (49)	47 (49)		
9. Wrings/flaps/gazes hands	Yes	12 (15)	18 (15)	1.567[NS]	1
	No	52 (49)	46 (49)		
10. Coils hair (own/others)	Yes	6 (4)	2 (4)	2.133[NS]	1
	No	58 (60)	62 (60)		
11. Picks nose	Yes	6 (8.5)	11 (8.5)	1.696[NS]	1
	No	58 (55.5)	53 (55.5)		
12. Smells (People/Objects)	Yes	19 (15)	11 (15)	2.786[NS]	1
	No	45 (49)	53 (49)		
13. Licks/mouths objects	Yes	11 (11)	11 (11)	.000[NS]	1
	No	53 (53)	53 (53)		
14. Bangs objects	Yes	10 (14.6)	19 (14.4)	3.806*	1
	No	54 (49.4)	44 (48.6)		
15. Makes vocal noises	Yes	17 (19.5)	22 (19.5)	.922[NS]	1
	No	47 (44.5)	42 (44.5)		
16. Grinds Teeth	Yes	5 (11.5)	18 (11.5)	8.957*	1
	No	59 (52.5)	46 (52.5)		
17. Sucks thumb	Yes	5 (5)	5 (5)	.000[NS]	1
	No	59 (59)	59 (59)		
18. Laughs or giggles for no reason	Yes	22 (20)	18 (20)	.582[NS]	1
	No	42 (44)	46 (44)		
19. Fondles genitals	Yes	18 (19.7)	21 (19.3)	.405[NS]	1
	No	46 (44.3)	42 (43.7)		
20. Interrupts while talking	Yes	19 (18)	17 (18)	.155[NS]	1
	No	45 (46)	47 (46)		
21. Cries excessively	Yes	15 (17)	19 (17)	.641[NS]	1
	No	49 (47)	45 (47)		
22. Screams/drops on the floor/clenches	Yes	11 (16)	21 (16)	4.167*	1



hands	No	53 (48)	43 (48)		
23. Unusually fearful of ordinary things	Yes	17 (12.5)	8 (12.5)	4.026*	1
	No	47 (51.5)	56 (51.5)		
24. Uses bizarre speech (Echolalia/slurred/talking to self)	Yes	25 (18)	11 (18)	7.575*	1
	No	39 (46)	53 (46)		
25. Overactive or impulsive	Yes	16 (16.5)	17 (16.5)	.041 [NS]	1
	No	48 (47.5)	47 (47.5)		
26. Obsessed to certain objects or activities	Yes	26 (19)	12 (19)	7.336*	1
	No	38 (45)	52 (45)		
27. Wanders off (from assigned time or place)	Yes	15 (20.5)	26 (20.5)	4.342*	1
	No	49 (43.5)	38 (43.5)		
28. Leaves the seat (without permission or purpose)	Yes	20 (27.5)	35 (27.5)	7.713*	1
	No	44 (36.5)	29 (36.5)		
29. Non adherence to routines or commands	Yes	20 (20.7)	44(43.3)	.063 [NS]	1
	No	21 (20.3)	42 (42.7)		
30. Bites/spits on- others	Yes	14 (16.4)	19 (16.6)	.920 [NS]	1
	No	49 (46.6)	45 (47.4)		
31. Kicks/pushes/bangs on- others	Yes	19 (24.5)	30 (24.5)	4.001*	1
	No	45 (39.5)	34 (39.5)		
32. Pulls others hair	Yes	7 (13)	19 (13)	6.950*	1
	No	57 (51)	45 (51)		
33. Slaps/hits/pinches/punches others	Yes	12 (17)	22 (17)	4.005*	1
	No	52 (47)	42 (47)		
34. Throws objects at others	Yes	10 (17.5)	25 (17.5)	8.848*	1
	No	54 (46.5)	39 (46.5)		
35. Throws/Breaks (inappropriately) objects	Yes	9 (14.6)	20 (14.4)	5.634*	1
	No	55 (49.4)	43 (48.6)		
36. Bangs doors/windows	Yes	17 (17)	17 (17)	.000 [NS]	1
	No	47 (47)	47 (47)		
37. Tears paper/clothing	Yes	13 (15)	17 (15)	.697 [NS]	1
	No	51 (49)	47 (49)		
38. Snatches things from others	Yes	13 (20)	27 (20)	7.127*	1
	No	51 (44)	37 (44)		
39. Steals objects	Yes	6 (8.5)	11 (8.5)	1.696 [NS]	1
	No	58 (55.5)	53 (55.5)		
40. Tell lies/Twists truth	Yes	9 (9)	9 (9)	.000 [NS]	1
	No	55 (55)	55 (55)		
41. Tattles /blames unreasonably	Yes	10 (11.5)	13 (11.5)	.477 [NS]	1
	No	54 (52.5)	51 (52.5)		
42. Touches or Hugs inappropriately	Yes	15 (17)	19 (17)	.641 [NS]	1
	No	49 (47)	45 (47)		
43. Exposes body parts inappropriately	Yes	4 (9)	14 (9)	6.465*	1
	No	60 (55)	50 (55)		
44. Inappropriate contact with members of opposite sex	Yes	2 (3.5)	5 (3.5)	1.360 [NS]	1
	No	62 (60.5)	59 (60.5)		
45. Removes clothing in public	Yes	4 (8)	12 (8)	1.567 [NS]	1
	No	60 (56)	52 (56)		
46. Gobbles or stuffs while eating	Yes	8 (13.5)	19 (13.5)	5.704*	1
	No	55 (49.5)	44 (49.5)		
47. Refuses to eat	Yes	7 (9.5)	12 (9.5)	1.545 [NS]	1
	No	57 (54.5)	52 (54.5)		
48. Sleep Problems (cannot initiate or	Yes	10 (11.5)	13 (11.5)	.477	1



sustain)	No	54 (52.5)	51 (52.5)	[NS]	
49. Over eating/frequent eating	Yes	14 (14.6)	15 (14.4)	.067	1
	No	50 (49.4)	48 (48.6)	[NS]	
50. Eats non-food items	Yes	6 (8)	10 (8)	1.143	1
	No	58 (56)	54 (56)	[NS]	

*p<0.05, **p<0.01

The results provided observed and expected frequencies (in parenthesis) of challenging behaviours for both 'Yes' and 'No' in both the groups (Parents' homes & Institutions). For the 'Yes', it would be considered favorable if the observed frequencies are lesser than the expected frequencies; For, 'No', it would be desirable to have observed frequencies greater than the expected frequencies.

Past researches concluded that individuals with IDD who reside in institutional settings have greater challenging behaviors than those who reside in their parents' homes. From the results in *Table 1*, it can be systematically noted that individuals in institutional settings have greater challenging behaviours, except in few, when compared with the individuals living in their parents' homes. The few can be further explained by their lesser 'Yes' and more 'No' in the frequencies [Coils hair (own/others), Smells (people/objects), Laughs or giggles for no reason, interrupts while talking, unusually fearful of ordinary things, Uses bizarre speech (echolalia/slurred/talking to self) and Obsessed to certain objects/activities] of challenging behaviours. It may be carefully seen that the majority of these behaviours are self-stimulatory or stereotypical in nature and so speculated that if residential setting have any implication over these types of behaviours. Other forms of behaviours such as aggression, self-injury, destruction, socially inappropriate, conduct and sexually inappropriate are found to be more prevalent in individuals living in institutions than their parent homes counterparts. However, this finding cannot be broadly generalized as the observations were not consistent within categories. So, Chi-Square tests of significance were carried out to validate empirically.

The observed and expected frequencies of challenging behaviours of the groups (living in parents' homes and living in institutions) were subjected to Chi-Square test. Individuals with IDD living in institutions had more challenging behaviours when compared with their counterparts in parents' homes and it was found that the differences noted between the groups was

significant at $p < 0.05$ in Pokes Eye/Ear/Nose on self [Chi-Square:3.700], Pulls own hair [Chi-square: 6.465], Taps head/teeth [Chi-square: 4.614], Bangs objects [Chi-square: 3.806], Screams/drops on the floor/clenches hands [Chi-square: 4.167], Wanders off (from assigned time or place) [Chi-square: 4.342], Kicks/pushes/bangs on-others [Chi-square: 4.001], Slaps/hits/pinches/punches others [Chi-square: 4.005], Throws/Breaks (inappropriately) objects [Chi-square: 5.634], Exposes body parts inappropriately [Chi-square: 6.465] and Gobbles or stuffs while eating [Chi-square: 5.704]; at $p < 0.01$ in Grinds Teeth [Chi-square: 8.957], Leaves the seat (without permission or purpose) [Chi-square: 7.713], Pulls others hair [Chi-square: 6.950], Throws objects at others [Chi-square: 8.848] and Snatches things from others [Chi-square: 7.127].

On the contrary, individuals living in parents' homes had greater challenging behaviours than those living in institutions as found significant at $p < 0.05$ in Unusually fearful of ordinary things [Chi-square: 4.026]; at $p < 0.01$ in Uses bizarre speech (Echolalia/slurred/talking to self) [Chi-square: 7.575] and Obsessed to certain objects or activities [Chi-square: 7.336].

Experts note that challenging behaviour is a social construct wherein environmental aspects such as high control, abuse or neglect, less social contact or lack of stimulation become major triggers that provoke challenging behaviours. Borthwick-Duffy (1994) implicated social learning theory to explain occurrence of challenging behaviours in large institutions, where one is provoked to exhibit challenging behaviours and others imitate. It can further be explicated with the findings of the present research that behaviours that were found to be more in individuals with IDD living in parents' homes are - in nature of internally maladaptive or a function of automatic reinforcement- prevalent regardless of the residential setting. Researches show that challenging behaviours in large institutions are often dealt with seclusion, restrictive environments, locked indoors, medication and other punitive measures. Adequate staffing, providing opportunities and choice for self-expression and



multi-disciplinary approach to challenging behaviours are need of the hour.

CONCLUSION

Nearly 40% of the sample in the present study exhibited one or more form of challenging behaviours, therefore it is essential to create center based services that would integrate behaviourtherapy with special education services. Individuals with IDD living in institutions had more challenging behaviours (self-injury, aggression, destructive, disruptive and socially inappropriate) when compared with their counterparts in parents' homes taking an exception to odd/stereotypical behaviours wherein latter found to be exhibiting more.

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