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Original Research Article

Health status of inmates of homes for persons with disabilities in Central India: a cross-sectional study

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ABSTRACT

Background: Disability is not just a health problem or attribute of individuals, but it reflects difficulties that individuals may experience in physical movements and interaction with society. Studies have indicated that persons with disabilities may experience a poorer health and quality of life than the general population. Inmates most commonly suffer from mental disorders with/without multiple disabilities. Musculoskeletal disorders and injuries were the most common morbidities identified.
Methods: A descriptive cross-sectional study to assess health status was conducted in various homes for persons with disabilities in Central India in 130 subjects out of which 64.62% were male and 35.38% were female.
Results: In present study, maximum i.e., 18 (13.85%) of study subjects were having fatigue followed by cold 15 (11.54%), throat pain 13 (10%), Generalized pain (not otherwise specified) 12 (9.23%), pain in abdomen 7 (5.38%) at the time of examination. Health status reveals that maximum number 49 (37.69%) of study subjects were having anaemia followed by 15 (11.54%) rhinitis.
Conclusions: Predominant morbidities observed in study subjects are underweight, anemia, and hypertension while refractive error, diabetes mellitus these were present in few study subjects. Regular health check-ups or camps should be organized for diagnosis and management of health problems of persons with disabilities.

Keywords: Health status, Morbidity, Disability, Inmates of homes, Disabilities

INTRODUCTION

Disability is not just a health problem or attribute of individuals, but it reflects difficulties that individuals may experience in physical movements and interaction with society.[1] According to The International classification of functioning, disability and health (ICF) problems with human functioning are categorized in three interconnected areas: Impairments: are problems in body function or alterations in body structure, for example, paralysis or blindness. Activity limitations: are difficulties in executing activities, for example, walking or eating. Participation restrictions: are problems with involvement in any area of life, for example, facing discrimination in employment or transportation.[2] Persons with disabilities are those for whom "physical or mental impairment substantially limits one or more of the major life activities." Disability may result from aging-related conditions, conditions at birth or traumatic injury.[3] Over 1 billion people are estimated to experience disability. This corresponds to about 15% of the world's population, with up to 190 million (3.8%) people aged 15 years and older having significant difficulties in functioning, often requiring health care services. The number of people experiencing disability is increasing due

to a rise in chronic health conditions and population ageing.[4] As per Census 2011, in India, out of the 121 Crore population, about 2.68 Crore persons are 'disabled' which is 2.21% of the total population. There has been a marginal increase in the differently-abled population in India, with the figure rising from 21.9 million in 2001 to 26.8 million over the period of 10 years.[5] Studies have indicated that persons with disabilities may experience a poorer health and quality of life than the general population.[6] Inmates most commonly suffer from mental disorders with/without multiple disabilities. Musculoskeletal disorders and injuries were the most common morbidities identified.[7] They are more likely to be obese and have heart disease, high blood pressure, respiratory disease, diabetes, stroke, breast cancer, bowel cancer.[1] Low physical activity restricts the body capacities and functions and increases the risk of chronic diseases and secondary complications among physically disabled people.[8] There are many studies available on the prevalence of disabilities in India but comparatively less literature is available on the health status among persons with disabilities. With this rationale, the present study carried out.

Objectives

Objective was to study the health status in inmates of homes for persons with disabilities.

METHODS

Present cross-sectional study to assess health status, was conducted in various homes for persons with disabilities in Central India.

Study duration and subjects

Study was carried out from June 2019 to December 2021. (two years 6 months). Study subjects consisted of adult inmates of homes for persons with disabilities in Central India.

Exclusion criteria

Person who is unable to comprehend and person who is not willing to participate in the study were excluded.

Sample size

With reference to the study done by Kunal Kuvalekar et al considering the prevalence of hypertension among Persons with Disabilities as 9.2%, the sample size calculated was calculated as follows:[1]

n = Z2 1-α/2* p(1-p)/ d2

Where, p=Expected proportion, d=Absolute precision

1-α/2=Desired confidence interval. Anticipated proportion of hypertension=9.2%, Absolute precision (%) =5, Desired confidence level (1-α)% =95, Required sample size for study=128. A pilot study was conducted in 30 persons with disabilities. The necessary corrections were incorporated in the questionnaire. Present study was carried out in 130 subjects. Data was collected from 4 different homes for persons with disabilities. Permission from the Heads of respective institutes was obtained. Informed written consent in subject's vernacular language was taken after apprising them of the nature and purpose of study.

Study variables

Independent variables: Socio-demographic factors i.e., Name, Age, Sex, Address, Religion, Type of family, Income of head of family, Socioeconomic status. Type of disability, Cause of disability, Duration of stay, Source of referral. Dependent variable: Morbidities among inmates of homes for persons with disabilities

Data collection method

After taking written informed consent study subjects were interviewed using predesigned pretested questionnaire. General and systemic examination was done and anthropometric measurements were taken. Those study subjects who were already taking medications for comorbidities and had records for the same, were considered as a diagnosed case of respective disease. Random Blood Sugar (RBS) and haemoglobin estimation were done.

Data management and analysis

Collected data were checked, edited at the end of the day during the period of data collection. Data was entered in Microsoft Excel 2019 and was rechecked and cleaned after entry to ensure quality of data. Data analysis was done using Microsoft Excel 2019. The results were expressed in frequencies and proportions. Continuous variables: Summarized as mean with standard deviation. Categorical variables: Summarized as proportions

RESULTS

The present community based cross sectional study was carried out among 130 adult persons with disabilities from four homes for persons with disabilities in Central India to assess health status. Sociodemographic charecteristics shows that, most of the study subjects belonged to 18-30 years of age group, the mean (SD) age of the study subjects was 25 (±37.72) with a range of 40-75 years for male and 23 (±8.49) with a range of 19-45 years for female. Male: Female Ratio=1.83. (Table 1) Majority of study participants were Hindus (76.15%) followed by Buddhist (20.77%). Almost half of study subjects 63 (48.46%) were educated upto Intermediate level of education or Post High School Diploma followed by graduates 32 (24.62%) and High School Certificate 27 (20.77%) respectively. Most of them 57 (43.84%) were unemployed followed by 52 (40%) skilled worker. Majority of study participants (82.31%) belonged to nuclear family.

Table 1: Distribution of study subjects according to socio-demographic characteristics (n=130).

Parameters	N (%)	Parameters	N (%)
Age group (years)		**Education**	
18-30	85 (65.38)	Professional degree or PhD	0
31-45	41 (31.54)	Graduate	32 (24.62)
>45	4 (3.08)	Intermediate or post high school diploma	63 (48.46)
		High school certificate	27 (20.77)
		Middle school certificate	2 (1.54)
		Primary school certificate	0
		Illiterate	6 (4.61)
Gender		**Occupation**	
Male	84 (64.62)	Professional	0
		Semi-professional	0
Female	46 (35.38)	Clerk, shop owner, farm owner	6 (4.62)
		Skilled worker	52 (40.00)
		Semiskilled worker	11 (8.46)
		Unskilled worker	4 (3.08)
		Unemployed	57 (43.84)
Religion		**Socioeconomic status**	
Hindu	99 (76.15)	Class I	8 (6.15)
Muslim	2 (1.54)	Class II	25 (19.23)
Buddhist	27 (20.77)	Class III	32 (24.62)
Jain	2 (1.54)	Class IV	44 (33.85)
		Class V	21 (16.15)
Type of family		**Type of Disability**	
Nuclear	(82.31)	Locomotar Disability	89 (68.46)
Joint	(13.84)	Visual impairment (Blindness/Low vision)	32 (24.62)
Three generation	(3.85)	Cerebral palsy	8 (6.15)
		Speech & Language disability	2 (1.54)
		Hearing impairment	1 (0.77)
Type of diet		**Causes of Disability**	
Mixed	-	Infection	(38.46)
Vegetarian	-	Congenital	(37.69)
		Accident	(21.54)
		Idiopathic	(02.31)

13.84% belonged to joint family. In the present study, according to BG Prasad's socioeconomic scale, majority of study subjects i.e., 44 (33.85%) belonged to socioeconomic status IV followed by 32 (24.62%) socioeconomic status III while 8 (6.15%) belonged to Socioeconomic status I (Table 1). Most of the study subjects 89 (68.46%) had Locomotor type of disability followed by 32 (24.62%) Visual Impairment and 8 (6.15%) cerebral palsy whereas 1 (1.54%) had Speech and Language disability and 1 (1.54%) had Hearing Impairment. (Figure 1-2) depicts that cause of disability was infectious in 38.46%, congenital in 37.69%, accident in 21.54% and idiopathic in 2.31% of study subjects. Infectious causes include poliovirus infection, gangrene whereas congenital causes include cerebral palsy, visually impaired since birth, congenital talipes equino varus.

The (Table 2) shows that maximum i.e., 18 (13.85%) of study subjects were having fatigue followed by cold 15 (11.54%), throat pain 13 (10%), Generalized pain (not otherwise specified) 12 (9.23%), pain in abdomen 7 (5.38%) at the time of examination. Table 3 reveals that maximum number 49 (37.69%) of study subjects were having anaemia followed by 15 (11.54%) rhinitis.

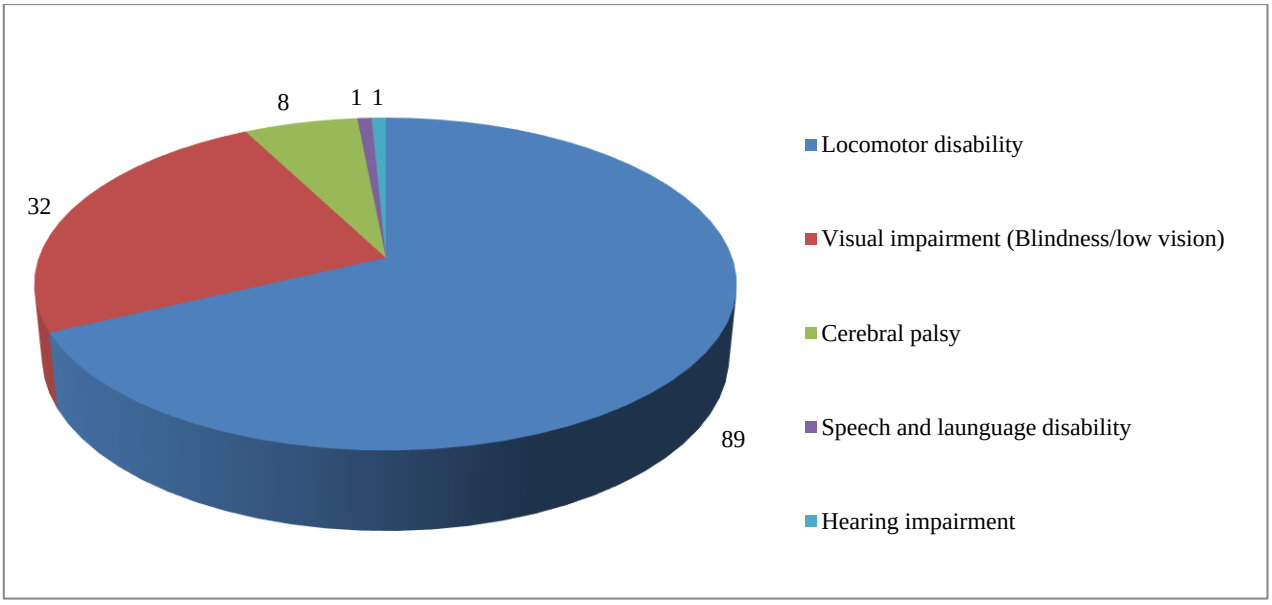

Figure 1: Distribution of study subjects according to type of disability (n=130) (1 study subject had speech and language disability with locomotor disability).

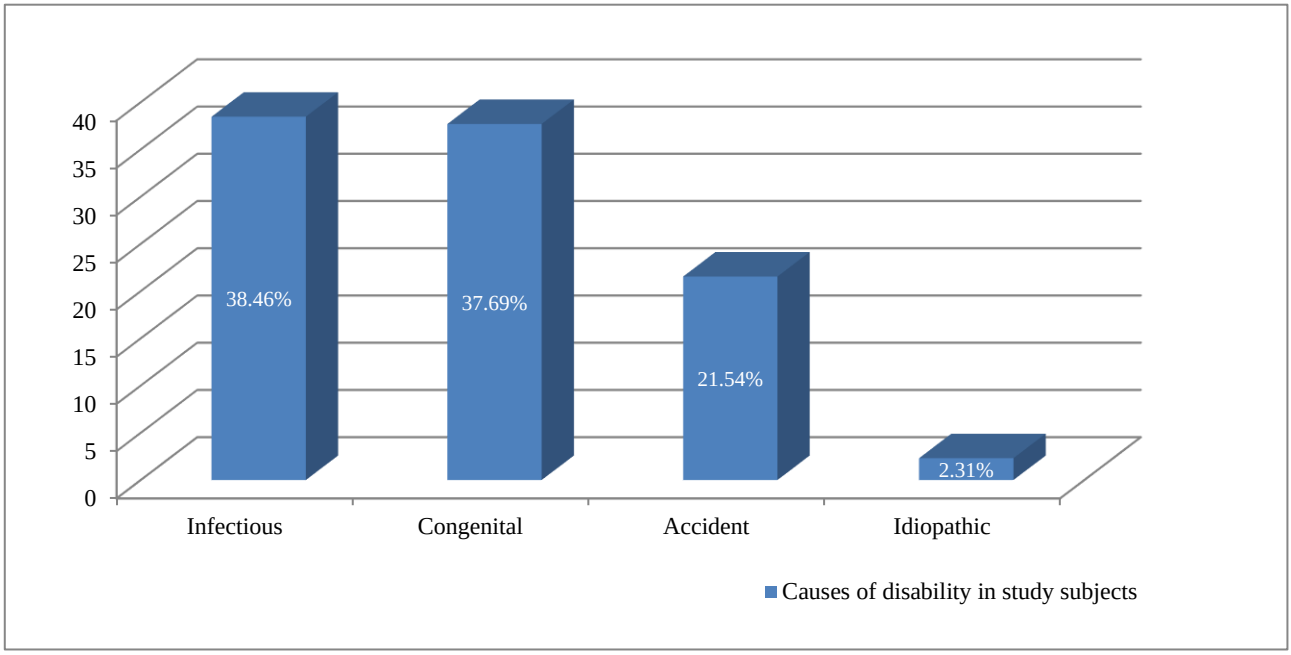

Figure 2: Distribution of study subjects according to cause of disability (n=130).

Table 2: Distribution of study subjects according to symptoms (n=130).

System	ICD 10 codes*	Symptom	N	%
Cental nervous (CNS)[6]	R20.2	Tingling of right side of body	1	0.77
Eye[7]	H02.9	Weakness of right eyelid	1	0.77
Respiratory (RS)[10]	R05	Cold	15	11.54
	J00	Cough	6	4.62
GIT[11]	R10.4	Pain in abdomen	7	5.38
	R11	Nausea	5	3.85
	K12	Oral ulceration	4	3.08
	K13	Cut to skin of angle of mouth	4	3.08
Skin[12]	R21	Rash & itching over inguinal region	2	1.54

Continued.

System	ICD 10 codes*	Symptom	N	%
Genito-urinary	N91.5	Irregular menstrual cycle (n=46)	3	6.52
General[18]	R53	Fatigue	18	13.85
	R07.0	Throat pain	13	10.00
	R52.9	Generalized pain (not otherwise specified)	12	9.23
	R42	Giddiness	5	3.85
	R51	Headache	4	3.08
	R06.8	Breathlessness on walking	4	3.08

*International Classification of Diseases 10th Revision.[9]

Table 3: Distribution of study subjects according morbidities found (n=130).

System	ICD 10 code	Disease condition	N	%
Metabolic[4]	E11	Diabetes mellitus	4	3.08
CNS[6]	G81.9	Hemiparesis	4	3.08
	G40.9	Epilepsy unspecified	1	0.77
Eye[7]	H52.7	Refractive error	6	4.62
	H50.9	Squint	3	2.31
	H02.4	Ptosis of eyelid	1	0.77
	H54.9	Unspecified visual impairment (binocular)	1	0.77
ENT[8]	J31.0	Rhinitis	15	11.54
	J02.9	Acute pharyngitis	13	10.00
	J03.9	Tonsilitis	1	0.77
	Q16.9	Impaired hearing due to congenital malformation	1	0.77
	K13.5	Submucous fibrosis	1	0.77
Circulatory[9]	D53.9	Anemia	49	37.69
	I10	Hypertension	13	10.00
	I95.9	Hypotension	11	8.46
RS[10]	J06.9	URTI	6	4.62
GIT[11]	K29.7	Gastritis	5	3.85
	K12	Recurrent oral aphthae	4	3.08
	K02	Dental carries	4	3.08
	K80.2	Gall bladder calculi	1	0.77
Skin[12]	L81.1	Melasma	5	3.85
	L70.9	Acne, unspecified	3	2.31
	L30.9	Dermatitis	2	1.54
Genito-urinary[14]	N92.6	Irregular menstruation unspecified (n=46)	3	2.31
	N20.0	Calculus of kidney	1	0.77
General[18]	K13	Angular cheilitis	4	3.08

DISCUSSION

Shrivastav et al showed that 16 (29.1%) were belonged to 20-40 years, 31 (56.4%) to 40-60 years and 7 (12.7) >60 years of age group.[7] In the present study, 85 (65.38%) belonged to 18-30 years of age group, 41 (31.54%) belonged to 31-45 years of age group. This difference might be because most of the homes in present study are giving vocational training. In the present study, there were 130 study subjects out of which 84 (64.62%) were males and 46 (35.38%) were females. In a study from Kunal kuvalekar et al males were 21 (38.2%) and female were 34 (61.8%).[1] The findings were near similar in study from Raut et al.[10] Majority of study subjects i.e., 82.31% in our study were living in nuclear family. Inline with findings to study done by Raut et al i.e., majority living in nuclear family (54.2%), whereas in a study at Karnataka by Kuvalekar et al observed that 32.3% were living in joint family and high proportion (73.3%) of participants living in joint family was observed in study conducted by Ganesh et al.[1,8-16] One third of the disabilities were due to chronic conditions like diabetes, cerebral palsy, stroke etc., followed by infections 28.1% and injuries 27.3%. Congenital conditions contributed to about 11.3% of disability etiology in study by Bellara et al.[12] In present study, infection is the cause of disability in 38.46% study subjects followed by congenital in 37.69%,

Accident/injury in 21.54% and idiopathic in 2.31% of study subjects. In the present study, fatigue was reported in 13.85%. Generalized pain in 9.23%, Joint pain in 1.54%, Pain in limbs in 5.38% study subjects. Susan Kinne et al reported chronic pain in muscles, joints (55.6%) extreme fatigue (44.8%), muscle spasms (25.5%).[13] Margaret A et al also stated women with disabilities had fatigue. Coyle et al also reported chronic pain, fatigue and joint pain. Wilber et al found fatigue (62.6%) and Chronic pain (48%), Gupta et al stated that 23.1%) gave a history of joint pains.[13-17] This could be because our study population was younger. In present study most common morbidity found was anaemia in 37.69% study subjects similar to study done by Joshi et al who noted most prevalent morbidity as anaemia.[18]

Limitations

Study has all the inherent limitations of a cross-sectional study. Due to COVID-19 pandemic, all the inmates were not present during the study period and hence convenience sampling method had to be adopted by including study subjects who were available at the time of study, therefore generalisability of the study findings is questionable.

CONCLUSION

Predominant morbidities observed in study subjects are underweight, anemia, and hypertension while refractive error, diabetes mellitus these were present in few study subjects.

Recommendations

Regular health check-ups or camps should be organized for diagnosis and management of health problems of persons with disabilities. Anaemia being prevalent, iron and folic acid tablets supplementation with deworming and dietary advice should be given by health personnel. High caloried diet plan should be provided to underweight persons. Cultivation of kitchen garden should be promoted to get fresh vegetables and fruits for the inmates to take care of the problem of underweight. Future studies including larger cohort should be carried out for addressing health needs.

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