

## Knowledge about diagnostic features and comorbidities of childhood autism among doctors in a tertiary care hospital

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### Abstract

**Introduction:** Epidemiological surveys indicate that the prevalence of autism is rising worldwide. A study in Sri Lanka has shown 1 in 93 children to be affected. Early diagnosis is vital as early intensive behavioural interventions improve outcome in autism. It has been shown that the level of physicians' knowledge of autism influences the average age of diagnosis and provision of further information to caregivers.

**Objectives:** To assess the knowledge of diagnostic features and comorbidities of childhood autism among doctors in a tertiary care hospital and to identify the factors affecting it.

**Method:** A descriptive study was conducted on 176 doctors at Colombo South Teaching Hospital, using the Knowledge about Childhood Autism among Health Workers Questionnaire. Data was collected by authors and analyzed using SPSS version 21. Ethical approval was obtained from the ethical review committee of the Lady Ridgeway Hospital.

**Results:** Majority (61.9%) considered themselves incompetent in identifying autism. Knowledge was highest regarding symptoms of impaired social interactions (75.81%) and lowest for restricted repetitive interests/behaviours (60.79%), with a significant difference between medical officers and postgraduate trainees ( $p=0.045$ ).

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**Conclusions:** Knowledge regarding childhood autism is poor among doctors in the tertiary hospital studied.

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(Key words: Knowledge, autism, doctors)

### Introduction

Epidemiological surveys worldwide demonstrate a rising prevalence of autism and a Sri Lankan study has shown 1 in 93 children to be affected<sup>1</sup>. Early diagnosis is vital as early intensive behavioural interventions improve adaptive behaviour, language and intelligence in autism<sup>2</sup> and diagnostic delays can worsen prognosis<sup>3</sup>. Therefore, to improve quality of life of affected children and care givers, it is crucial that health care providers are aware of the features of autism to enable early diagnosis and intervention.

Studies done in several countries have revealed inadequacies in knowledge about autism among doctors, with a variation between primary care providers and specialists<sup>4,6</sup>. The average delay from first presentation to diagnosis is estimated to be 4 years<sup>2</sup>. It has been demonstrated that the level of physicians' knowledge of autism greatly influences the average age of diagnosis and provision of further information to caregivers<sup>3</sup>.

In Sri Lanka, medical professionals involved in primary health care have a pivotal role in identification and referral of children with autism, since child psychiatric services are, as yet, underdeveloped and unable to cater for the majority. As the knowledge of medical professionals in identification of children with autism has not been assessed previously, it would be important to do so in order to plan in-service training programmes, which will facilitate early diagnosis and intervention in children with autism.

### Objectives

To assess the knowledge of diagnostic features and comorbidities of childhood autism among doctors in a tertiary care hospital and to identify the factors affecting it.

**Method**

A descriptive study was done among doctors at Colombo South Teaching Hospital, from July to September 2015. All consenting intern medical officers, medical officers and registrars were included in the study. Doctors from psychiatry units were excluded as they have received special training and have experience in diagnosing autism. Similarly, consultants were excluded as their knowledge may not reflect the knowledge of non-specialist doctors. A specifically designed questionnaire for socio-demographic details and the "Knowledge about Childhood Autism among Health Workers (KCAHW) Questionnaire" were used. KCAHW questionnaire was developed in Nigeria, and is recommended for use in developing countries<sup>7</sup>. The questionnaire utilizes widely accepted symptoms of autism that are taught in medical schools in Sri Lanka in English. This has a total of nineteen questions divided into four domains; namely impairments in social interactions, impairment of communication and language development, restricted, repetitive and stereotyped behaviour and common associations of childhood autism. Each of the questions has three options (yes, no, don't know) to choose from with only one of these options being correct. The correct option for each question is given a score of one, while the other two options that are incorrect are given a score of zero each. A maximum and minimum total score of nineteen and zero respectively are possible. The test-retest reliability of the questionnaire is good as there were significant correlations in the mean domain and mean total scores at first and second time of administration. The KCAHW questionnaire also has a good internal consistency as revealed in the Cronbach's alpha value obtained for mean domain scores correlation with the mean total scores both at first and second time of administration. Data was analyzed using SPSS version 21. The mean KCAHW score was calculated. Independent sample t-test and ANOVA were used to test the difference in knowledge among groups. Informed consent was sought from participants. Ethical approval was obtained from the ethical review committee of the Lady Ridgeway Hospital.

**Results**

A total of 176 medical officers from the Colombo South Teaching Hospital participated in the study from July to September 2015. The demographic details of the 176 participants are shown in Table 1. The mean age of the study group was 38.4 ± 8.18 years. Seventy eight (45%) were working in a medical specialty.

**Table 1: Demographic details of participants n=176**

Demographic detail	No. (%)
<i>Age</i>	
<30 years	32 (18.2)
30-40 years	73 (41.5)
41-50 years	51 (29.0)
> 50 years	16 (09.1)
Missing	04 (02.2)
<i>Sex</i>	
Male	65 (36.9)
Female	111 (63.1)
<i>Designation</i>	
Intern Medical Officers	22 (12.5)
Medical Officers/Senior House Officers	131 (74.4)
Registrars	23 (13.1)
<i>Current specialty</i>	
Medical	78 (44.3)
Surgical	34 (19.3)
Paediatrics	15 (08.5)
Gynaecology and obstetrics	10 (05.7)
OPD	21 (11.9)
Anaesthesia	16 (09.1)
Missing	02 (01.1)
<i>Work experience</i>	
<1 year	23 (13.1)
1-5 years	08 (04.5)
5-10 years	56 (31.8)
>10 years	86 (48.9)
Missing	03 (01.7)
<i>Perceived competence</i>	
Competent	64 (36.4)
Not competent	109 (61.9)
Missing	03 (01.7)

The participants scored a mean of 13.23/19 (69.1%) in the questionnaire. The knowledge was highest in identification of symptoms related to impaired social interactions (75.8%) and lowest in identification of symptoms of restricted repetitive interests and behaviours (60.8%) (Table 2). For instance, 116 (65.9%) knew that delay or lack of speech development was a feature of autism and 56.8% knew that social smiling was absent in children with autism, but 49.4% were unaware that children with autism have a strong preference for regimented routine activities. Ninety three (52.9%) of the participants were unaware that autism is associated with epilepsy and 72 (40.9%) did not know that autism is associated with mental retardation.

The mean knowledge did not differ significantly with sex (p=0.377), age (p=0.169), years of experience (p=0.326) or the specialty of work (p=0.614). The postgraduate trainees had significantly better knowledge than the medical officers (p=0.045) in identification of symptoms of autism. In addition, those who considered themselves competent in identifying autism had significantly better knowledge than those who did not (p=0.001).

**Table 2: Mean scores of the KCAHW questionnaire**

Domain	Yes No. (%)	No No. (%)	Don't know No. (%)
<b>Domain 1 – Reciprocal social interactions</b>			
Marked impairment in use of multiple non-verbal behaviours during social interaction	159 (90.3)	09 (05.1)	08 (04.5)
Failure to develop peer relationship appropriate for developmental age	161 (91.5)	05 (02.8)	10 (05.7)
Lack of spontaneous will to share enjoyment, interest or activities with others	146 (83.0)	17 (09.7)	13 (07.4)
Lack of social or emotional reciprocity	141 (80.1)	07 (04.0)	28 (15.9)
Staring into open space and not focusing on anything specific	92 (52.3)	55 (31.3)	29 (16.5)
The child can appear as if deaf or dumb	128 (72.7)	24 (13.6)	24 (13.6)
Loss of interest in the environment and surroundings	134 (76.1)	28 (15.9)	14 (08.0)
Social smile is usually absent in a child with autism	100 (56.8)	42 (23.9)	34 (19.3)
<b>Domain 2 – Impairment in communication</b>			
Delay or total lack of development of spoken language	116 (65.9)	39 (22.2)	21 (11.9)
<b>Domain 3 – Restricted repetitive interests and behaviours</b>			
Stereotyped and repetitive movement (e.g. Hand or finger flapping)	118 (67.0)	27 (15.3)	31 (17.6)
May be associated with abnormal eating habit	91 (51.7)	28 (15.9)	57 (32.4)
Persistent preoccupation with parts of objects	131 (74.4)	12 (06.8)	33 (18.8)
Love for regimented routine activities	89 (50.6)	37 (21.0)	50 (28.4)
<b>Domain 4 – Common associations</b>			
Autism is childhood schizophrenia	06 (03.4)	142 (80.7)	28 (15.9)
Autism is an auto-immune condition	04 (02.3)	144 (81.8)	28 (15.9)
Autism is a neuro-developmental disorder	113 (64.2)	36 (20.5)	27 (15.3)
Autism could be associated with mental retardation	104 (59.1)	41 (23.3)	31 (17.6)
Autism could be associated with epilepsy	83 (47.2)	39 (22.2)	54 (30.7)

**Discussion**

Although previous studies in Sri Lanka have demonstrated speech delay to be the commonest presentation to services<sup>9,10</sup>, 34% of the doctors were unaware of this symptom. In addition, despite restrictive repetitive interests and behaviours being a diagnostic criterion of autism, 39% of the doctors did not recognize it as a part of autism. Inadequate knowledge on these domains may lead to delayed identification and intervention. Previous studies demonstrate that the knowledge on co-morbidities of autism is especially poor<sup>7,11</sup>. This also holds true for our study, with 53% being unaware of the association of epilepsy with autism. Poor knowledge results in attribution of these co-morbidities to be ‘a part of autism’, which leaves them untreated and worsen the quality of life of patients<sup>11</sup>.

Our study revealed that there was a significant difference in knowledge between medical officers and postgraduate trainees. This can be attributed to the additional training received by postgraduate trainees after completion of the MBBS. This stresses the importance of regular in-service programmes for medical officers to update their knowledge. However, other factors such as having a family member with autism and work experience in psychiatry could

influence the difference in knowledge. Only 37% of doctors rated themselves as competent in identifying autism. This may be the result of inadequate exposure to children with autism during their undergraduate period as specialized autism treatment programmes are not available in all teaching hospitals. Many medical faculties are now allocating their undergraduates to centres where such facilities are available, which may help improve the knowledge and competence of future doctors.

The implications of lack of knowledge about autism among health care providers include misdiagnosis, delayed diagnosis and delayed intervention. As early intensive behavioural interventions have been shown to improve adaptive behaviour, language and intelligence in autism, delay in diagnosis ultimately leads to poorer outcome<sup>3</sup>. In addition, it has been shown that due to inadequate knowledge, health care workers fail to offer information to carers, who in turn resort to other resources such as media and other parents. This may lead to carers receiving suboptimal information, leading to increased financial burden, family disharmony, increased caregiver challenges and increased risk of mental health problems among the parents<sup>3,8</sup>.

The main limitation of this study is that it was carried out at a tertiary care centre. Knowledge of doctors in a tertiary care centre may not reflect that in other institutions. Ideally, this study is best carried out on doctors in primary health care, who are the first contact for child development. However, assessing the knowledge of doctors in a hospital setting is also important as it is the place where children identified by parents as having an abnormality present to, and failure of identification and referral at this stage would greatly impair prognosis.

### Conclusions and recommendations

Knowledge of diagnostic features and comorbidities of childhood autism among doctors of the tertiary care hospital studied is poor. Further studies are needed to ascertain whether level of knowledge is similar among doctors in primary health care settings.

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