

Medical Undergraduate Perception on the Knowledge of Autism Spectrum Disorder (ASD): Survey Based Study at Different Levels of Curriculum

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Background: Sufficient and thorough knowledge in early recognition of symptoms and proper management of ASD is of utmost importance to medical graduates in the initial years of their learning in medical school. Their knowledge regarding ASD will be helpful when they become health care professionals as it will be easy for proper management of ASD. Our aim is to evaluate and analyze medical undergraduate student.

Method: Total of 221 undergraduate medical students studying in Preclinical, para clinical and early clinical phase of MMMC, participated in this questionnaire based survey study. Close ended questionnaire which was validated and proved to be reliable was given to students to assess their level of knowledge about ASD. Results of data were analyzed using SPSS software.

Results: Total mean score for the preclinical students was 5.91 ± 2.90 , for para-clinical it was 7.30 ± 3.00 and that for clinical year students (students in 3rd year of medical school) it was 9.42 ± 2.20 out of 14. The knowledge about ASD among the students significantly increased alongside their curricular levels ($p < 0.05$).

Conclusions: Overall knowledge of medical undergraduate students about the ASD at their preliminary curricular stages is inadequate. But, there was a significant improvement as their curriculum progresses which reflect the academic up gradation among the medical students and their positive attitude towards ASD.

Keywords: Autism Spectrum Disorder; Student Perception; Knowledge

تصور الطلاب في مجال الخلل التوحدي، درابه على اساس البحث في مستويات البرنامج التعليمي

المقدمة: إن المعرفة الكافية والجامعة، في مجال معرفة العلامات الأولية في الادارة الصحيحة للاختلال التوحد، تعتبر امر بالغ الأهمية عند خريجي كلية الطب و خاصة في السنوات الاولى في مجال العمل. إن العلم يساعد المتخصصين في هذا المجال، اي مجال طيف علائم التوحد و ادارة هذا المرض. إن الهدف من هذه الدراسة هو تعيين مستوى العلم و الرقبة عند الطلاب تجاه خلل التوحد في مختلف المستويات التعليمية.

الأسلوب: اشترك في هذه الدراسة ٢٢١ طالب طب سريري من MMMC و قد اكملوا استمارات مخصصة لرم. تم اولا التثبت من المعايير الإحصائية و من ثم تم توزيعها على الطلاب ليتيم تعيين المستوى العلمي عند الطلاب تجاه خلل التوحد خضعت النتائج الى درابه احصائية عبر برنامج SPSS.

النتائج: كان معدل طلاب المرحلة ما قبل السريرية من 5.91 ± 2.90 و معدل الباراكلينيك 7.30 ± 3.00 و للطلاب السنة الثالثة 9.42 ± 2.20 ، كان هناك ارتفاع بمستوى المعرفة مع ارتفاع مستوى السنوات الدراسية عند الطلاب ($P < 0.05$).

الاستنتاج: إن مستوى المعرفة عند الطلاب تجاه التوحد كان منخفض جدا في السنوات الدراسية الابتدائية و لكن كان هناك ارتفاع جلي مع ارتفاع السنوات الدراسية.

الكلمات الرئيسية: خلل طيف التوحد، مستوى ادراك الطلاب، العلم.

درک و دانشجویان از اختلال طیف اتیسم: مطالعه پژوهش محور از سطوح مختلف برنامه آموزشی

پیشینه: دانش جامع و کافی در شناخت اولیه علائم و مدیریت صحیح اختلال اتیسم از اهمیت بسیار زیادی برای فارغ دانشجویان پزشکی در سال های نخستین زندگی حرفه ایشان در دانشکده پزشکی برخوردار است. دانش نسبت به اختلال طیف اتیسم، به متخصصان در مدیریت این اختلال کمک می کند. هدف مطالعه حاضر اینست که میزان دانش دانشجویان و نگرش آنها را نسبت به اختلال اتیسم در سطوح مختلف آموزشی ارزیابی نماید.

روش: ۲۲۱ دانشجوی پزشکی بالینی از MMMC در مطالعه شرکت نمودند و پرسشنامه را پر کردند. روایی و پایایی پرسشنامه سنجیده شده و سپس در میان دانشجویان پخش شد تا سطح دانش آنها از اختلال طیف اتیسم مورد سنجش قرار گیرد. داده ها توسط نرم افزار SPSS بررسی شد.

نتایج: میانگین دانشجویان از ۱۴ برای دانشجویان پیش بالینی 5.91 ± 2.90 بوده و میانگین پاراکلینیکی 7.30 ± 3.00 و برای دانشجویان سال سوم 9.42 ± 2.20 بوده است. دانش از اختلال طیف اتیسم با بالا رفتن دوره آموزشی دانشجویان به صورت چشمگیری افزایش یافته است. ($p < 0.05$)

نتیجه گیری: دانش کلی دانشجویان از اختلال طیف اتیسم در دوره های اولیه ناقص است. اما با بالا رفتن سطح آموزش به صورت قابل توجهی افزایش می یابد.

کلید واژه: اختلال طیف اتیسم-درک دانشجویان

میڈیکل طلباء میں آٹیزم کا درک. میڈیکل تعلیم کی مختلف سطوح پر انجام دیا گیا تحقیقاتی مطالعہ

بیک گراؤنڈ: فارغ التحصیل میڈیکل طلباء کے لئے اپنے کیریئر کی شروعات میں آٹیزم کی علامتوں کو سمجھ کر اس کا صحیح علاج تجویز کرنا نہایت اہمیت کا حامل ہے۔ آٹیزم کی مختلف قسموں کے بارے میں علم اس بیماری کا صحیح علاج کرنے کے لئے نہایت اہمیت کا حامل ہے۔ اس تحقیق کا هدف یہ ہے کہ اس بات کا جائزہ لیا جائے کہ میڈیکل طلباء تعلیم کی مختلف سطوح پر آٹیزم کے بارے میں کتنی جانکاری رکھتے ہیں۔

روش: اس تحقیق میں دو سو اکیس طلباء نے ایم ایم سی سے شرکت کی۔ سوالنامہ تیار کرنے کے بعد طلباء کو دیا گیا۔ طلباء کے جوابات کا تجزیہ ایس پی ایس ایس سے کیا گیا۔

نتیجے: اس تحقیق سے ظاہر ہوتا ہے کہ جیسے جیسے طلباء کی علمی سطح بڑھتی گئی آٹیزم کے بارے میں ان کے علم میں اضافہ ہوتا گیا۔

سفارشات: نچلی کلاسوں میں میڈیکل طلباء آٹیزم کے بارے میں نابلد تھے لیکن جیسے جیسے ان کی تعلیمی سطح بڑھتی گئی ان کی معلومات میں بھی اضافہ ہوتا گیا۔

کلیدی الفاظ: آٹیزم، علم۔

INTRODUCTION

Autism spectrum disorder (ASD) or autistic spectrum is a complex developmental disability as it has been categorized under neuro-developmental disorders. It is characterized by social deficits and communication difficulties, stereotyped behaviors and interests and in some cases, cognitive delays. Experts believe that ASD presents itself during the first three years of a person's life. This condition is due to a neurological disorder that has an effect on normal brain function, affecting development of the person's communication and social interaction skills (1). Delayed "first words" is among the most common presenting symptoms of ASDs (2). There are also delays in gesture usage and other foundation skills (i.e., early vocalizations and receptive language) which can be detectable before the expected onset of spoken word (3).

A person with ASD will typically prefer to stick to a set of behaviors and will resist any major (and many minor) changes to daily activities (4). Several relatives and friends of people with ASDs have commented that if the person knows a change is coming in advance, and has time to prepare for it; the resistance to the change is either gone completely or is much lower (4).

Autism is different from mental retardation. Mental retardation is characterized by more or less impairment in skills in all areas of development. Therefore, if a mental retarded child of 8 years has a mental age of 5 then all its skills would be roughly around 5 years (i.e. motor, communication, social, self-help, cognition etc.) (5). But an uneven skill development is a hallmark of ASD. In some areas the child may show age-appropriate skills; in some the skills may be below the developmental level; and then again there are people with ASD who may possess exceptional skills i.e. beyond their age level (5). In certain countries, individuals with intellectual disability including children with ASDs are being discriminated and have lack of access to education and justice (6). Proper knowledge regarding ASD for medical students can help them to understand the problem better as they are exposed to this problem in the early years of their education in medical school and for proper management of ASD when these students treat patients with ASD.

This study was aimed for assessing knowledge about autism spectrum disorder (ASD) among the medical students studying in various stages of their undergraduate curriculum i.e., Preclinical, para-clinical and clinical batches of Melaka Manipal Medical College (MMC) Manipal as well as to analyze the student's attitude about ASD in terms of perception and acceptance towards autistic people.

METHODS

Close ended questionnaire reflecting an overall preliminary knowledge about ASD was used in the current study as referred by Bakare et al., (7). Dr. Bakare designed this questionnaire of 19 questions to test the factors influencing knowledge about childhood autism among final year undergraduate Medical, Nursing and Psychology students of University of Nigeria, Enugu State, Nigeria. He has proved that the test-retest reliability of the questionnaire is good based on the significant correlations he found in the mean

domain and mean total scores. He also opines that the questionnaire showed a good internal consistency and that it would be a useful tool in testing where knowledge and awareness about childhood autism is low. We have selected 14 out of 19 questions in accordance with the suitability of medical undergraduate students of initial 3 levels of their curriculum. The questionnaire was validated by other faculties of our college and was found reliable by the study which was done using this questionnaire. The questionnaire has been attached at the end (appendices). The questions included in the present questionnaire were also categorized into 4 domains reflecting following qualities of ASD.

➤ Domain 1 (Question no. 1-5)

Contain 5 items that to test the knowledge of autism type of disorder, possible condition that can be associated with autism and the onset of autism to appear.

➤ Domain 2 (Question no. 6-11)

Comprise of 6 questions about the impairment in social interaction that can be found in autistic children.

➤ Domain 3 (Question no. 12)

Contain 1 question, that to address the impairment in communication and language development in an autistic child.

➤ Domain 4 (Question no. 13-14)

Consist of 2 questions which are focused on the obsessive and compulsive behavior of the child.

➤ Sample size

A total of 221 undergraduate students participated in the study. The participants were selected on random basis to reduce any bias and to obtain statistically significant results. 65 students studying in preclinical year (Phase 1 stage 1), 82 students of para clinical batch (Phase 1 stage IIA) and 74 students of clinical batch (Phase 1 stage IIB) were involved in the study. Respondents gave their informed consent before taking part in this study.

➤ Data collection methods

Students were asked to respond to the questions mentioned in the questionnaire. Prior consent of the students was taken and the students voluntarily participated in the study. During evaluation of these responses, the correct answers were given score '1' whereas, wrong answers and 'don't know' responses were scored as '0'. Maximum score that can be obtained was 14 and the minimum was 0. The score was determined by the answer scheme provided.

➤ Data analysis

Mean score with SD were calculated for each batch. The percentage level of mean score was also calculated for the comparison purpose. Resulting data of mean scores were analyzed statistically by testing independent t test using SPSS software version 16.0. $p < 0.05$ was considered as statistically significant.

RESULTS

Mean score with standard deviation (SD) and corresponding percentage result of MBBS students of each year is represented in graph -1 and graph -2. Total mean $\pm$ SD for the first year (pre clinical) medical students was 5.91 ± 2.90 . This mean corresponded to 42% of corrected answer score '1' as in questionnaire. Similarly, mean score for second year

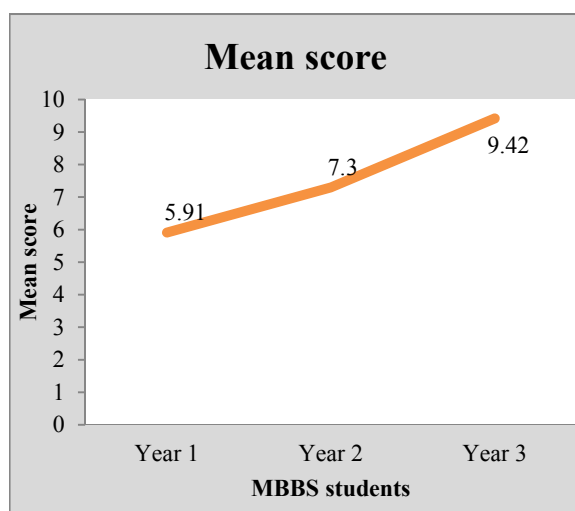


Figure 1. Mean percentage results of MBBS students of preliminary three curricular batches

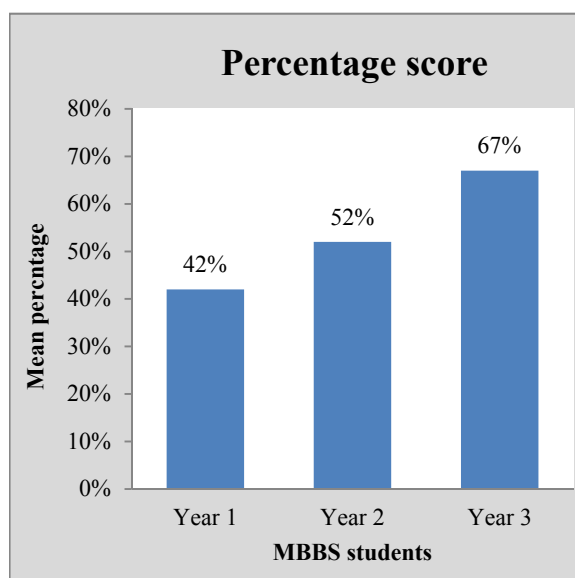


Figure 2. Graphic representation of mean score levels of first 3 curricular levels of medical undergraduates.

(para clinical) student was 7.30 ± 3.00 with 52% of the result. This improvement in the awareness and knowledge found to be statistically significant ($p < 0.01$). The mean score for preliminary clinical year students was 9.42 ± 2.20 which accounted for 67% of result.

The mean score difference between the first and second year undergraduates found to be significantly increasing from their pre-clinical to para clinical curricular level with the statistical significance of $p = 0.0053$. Likewise, progressive improvement in the level of knowledge on ASD had also been observed between para clinical and early phase of clinical undergraduate students with the statistical significant difference of improvement ($p < 0.0001$).

Figure 1 show the Mean percentage results of MBBS students

of preliminary three curricular batches, also Figure 2 representation of mean score levels of first 3 curricular levels of medical undergraduates that there were statistically significant difference between year 1 and year 2 ($p < 0.05$) and significant difference between year 2 and year 3 ($p < 0.05$).

DISCUSSION

Most parents report the symptoms of ASD occurred at onset within first year of life (8). Treatment of ASD is highly challenging as there is no single treatment and it requires a set of treatment which needs to be extended to the affected child based on its presentation of ASD. An intensive care, sustained special education programs and behavior therapy can restore the self care, social and job skill of the affected child. Hence, proper awareness on ASD characters among the health care professionals is imperative to achieve an effective management of the ASD. It would be very helpful for medical undergraduate students if they are educated regarding the ASD as it will lead to proper surgical management of the disorder.

A study in this approach conducted by Monday et al., among medical, nursing and psychology students in Nigeria revealed mean score (out of 19) of 12.24 ± 3.24 (63%) for medical students, 10.76 ± 3.50 (56%) for nursing students and for psychology students it was 9.01 ± 3.76 (47%) (9). Medical students involved in their study were final year undergraduate students. But the clinical batch students participated in the present study was of preliminary clinical posting students with the clinical exposure of less than 6 months. Even then, the resulting score we observed was comparatively higher i.e., 9.41 ± 2.20 (67%). This is an appreciable fact wherein, our student's attitude towards ASD found to be remarkably favorable. In the academic curricula, medical students will normally have longest duration of exposure in pediatrics and this duration helps them to acquire more knowledge about the ASD.

The result of current study on knowledge about ASD among the medical undergraduate students is slightly low irrespective of their curricular level. This indicates the need of awareness about the disorder during their basic science curricula which is warranted. Nevertheless, progressive improvement with the significant increment in their level of knowledge on ASD is highly appreciable and it reflects their positive attitude towards ASD.

Bakare et al., (10) in a research study performed on health care workers on availability of facilities and law caring for the needs and rights of children with childhood autism reported higher mean score. Health care workers like nurses will have maximum exposure with the ASD children, which make them understand better the mentality of the children and their needs. However, medical professionals are more into the treatment that necessitate them to be aware of the condition much better than any other health professionals.

Significant progress in their knowledge or perception toward the ASD as the level of curricular advancement can be considered as a favorable trend that reflects the positive attitude towards ASD. This attitude is important as an autistic child needs a multi-disciplinary approach requiring services of professionals like pediatricians and others (9).

Promoting autism spectrum disorder knowledge may help in early diagnosis of an autistic child and it will also help influencing the help-seeking parents of an autistic child positively (11). The diverse expression of ASD symptoms poses diagnostic challenges to clinicians. Thorough knowledge about symptoms of ASD together with adequate clinical exposure is

imperative for medical professionals to achieve an effective treatment for the affected child. Though the current survey revealed slightly lower level of knowledge about ASD among medical undergraduate students in their early curricular level, subsequent progressive improvement denotes, positive attitude of the student towards autistic disorders.

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