

Knowledge and Attitude about Autism among Primary Health Care Physicians in Dammam and Alkhobar Cities, KSA in the Year 2019

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Abstract: ***Background:** Autism is a lifelong condition, but early recognition, diagnosis, and treatment can improve the prognosis. **Aims:** To study the knowledge and attitude of primary health care physicians about autism spectrum disorder in Dammam and Alkhobar cities in Saudi Arabia. **Methods:** A cross-sectional study was done on 176 physicians working in PHCCs of MOH from Jan. 2020 till Jan. 2021. Data was collected from physicians through an electronic self-administered questionnaire. The questionnaire consists of 3 parts; demographic data, knowledge and attitude. Knowledge about childhood autism among health workers (KCAHW) questionnaire was used to assess knowledge of physicians. **Results:** A total of 176 physicians were included in this study, of them 50.6% were males and 49.4% were females. Less than half of the physicians (46%) were 31-40 years old. Generally, the majority of the respondents (69.9%) had a good level of knowledge about autism, while 30.1% had a poor level of knowledge. The score of knowledge ranged from 3 to 18 with median equals to 13 and 4 Interquartile Range. Gender, age, academic qualification, duration of clinical experience, familial or clinical dealing with autistic patients were significantly associated with knowledge about autism. Only gender and age were significantly associated with attitudes towards autism management. **Conclusion:** Although the majority of the physicians, about two thirds, had a good level of knowledge, this level is considered inadequate for early identification of autism at primary healthcare setting. Thus, there is a room of improvement to ensure proper care for autistic patients.*

Abbreviations: PHCCs (Primary Health Care Centers), FM (Family Medicine), GP (General Practitioner), MOH (Ministry of Health)

Keywords: Autism, Knowledge, Attitude, Physicians, Saudi Arabia

1. Introduction

Autism is characterized by qualitative impairments in communication and social interaction and by restricted, repetitive, and stereotyped patterns of behaviors and interests. Autism spectrum disorder is a lifelong disease usually diagnosed in childhood between age 2 – 3years-old and it is triples to four times in boys more than in girls (1).

Autism was a rare disease, since the early 1990 the prevalence of autism increases and there is no significant cause of this increasing. This rising could be explained by the improvement in diagnostic criteria, easy accessibility to educational material and increase the community awareness (2).

The prevalence of autism is rising worldwide. It was 29 per 10000 for PPD in UAE, in Oman it was 1.4 in 10000, and in Bahrain it was 4.3 per 10000. But there is no study done in Saudi Arabia for the prevalence of autism (3).

The cause of autism is still unknown. There are many factors such as environmental, biologic and genetic and familial factors that make the child more probable to have autism (4).

This disease may affect negatively the patient and family life. Some patients with autism can't live their life independently and need a long-life care. It may affect also patient education and social life. On the other hand, some autistic patients will be able to live their life independently (5).

The American academy of pediatrics recommends the screening of autism for all children between age 18-24 months with specific screening tools. The new evidence from a randomized controlled trials said that an early diagnosis and intervention for a children < 3 years will improve the quality of life of children with autism and their families and reduce the symptoms (6).

The Diagnosis of autism depends on the direct evaluation of social relation skills and repetitive behavior with specific tests of language and cognitive skillfulness, and the diagnosis approved by the DSM-5 criteria for autism spectrum disorder (7).

Autism is a lifelong condition, but early recognition, diagnosis, and treatment can improve the prognosis. Primary health care physicians play an important role in early diagnosis and referral of children with autism. They should perform developmental surveillance at all well-child visits and a referral for comprehensive diagnostic evaluation is appropriate. The goals of long-term management are to minimize maladaptive behaviors, and provide family and caregiver support (8). Physicians play an important role in coordinating care through an interdisciplinary team; referring families for specialized services.

There are many studies conducted in several countries to assess the physician knowledge about autism (9). However, upon the knowledge of researcher there is no study done in Eastern Province of Saudi Arabia, so the aim of this study was to study the knowledge and attitude of primary health

care physicians about autism spectrum disorder in Dammam and Al-khobar cities in Saudi Arabia.

2. Methods

2.1 Study design, settings, time and participants

A cross-sectional study was done on physicians working in PHCCs of MOH from Jan. 2020 till Jan. 2021. All physicians working in major cities in Eastern province in Khobar, Dammam PHCCs of MOH were included in the study. Physicians in pure administrative work and specialist and consultants other than family medicine were excluded from the study, the total number of the physicians were 342.

2.2 Data collection method and tool

Data was collected from physicians through an electronic self-administered questionnaire distributed through smart phone social program. Knowledge about childhood autism among health workers (KCAHW) questionnaire (10) was used in the study. This questionnaire is valid and reliable questionnaire for assessing knowledge of health workers about childhood autism (Cronbach's alpha = 0.97).

The questionnaire consists of 3 parts:

- 1) Demographic data part: age, gender, sector, qualification, working sector, years of experience, autism patients seen during week, cases of autism in family, training in child mental health.
- 2) Knowledge part (4domains, 19 questions):
 - Domain 1 (8 items): Impairment in social interactions
 - Domain 2 (1 item): Impairment in communication and language development
 - Domain 3 (4 items): Restricted repetitive interests and behaviors
 - Domain 4 (6 items): Possible co-morbid conditions and onset of childhood autism
- 3) Attitude part: general attitude towards diagnosis and managing autistic cases.

Study variables:

Dependent variables

Knowledge and Attitude of primary health care physicians about autism.

Independent variables

age, gender, sector, qualification, working sector, years of experience, autism patients seen during week, cases of autism in family, training in child mental health.

Coding and Scoring of the knowledge part:

A variable of knowledge was given a score on 1 for a correct answer and a score of 0 for incorrect answer. The score of knowledge was summed to a maximum of 19 which assumed to be the highest level of knowledge among participants. Respondents who answered 60% or more of the questions correctly were considered to have good level of knowledge and those who answered less than 60% were considered to have poor level of knowledge.

Coding and Scoring of the attitude part:

3 Likert scale was used (Agree, neutral, disagree)

Agree=3, neutral=2 and disagree=1

2.3 Data Management and Analysis Plan:

After completing the electronic questionnaire, data was transferred into a personal computer and analyzed using SPSS software version 23. Data were analyzed and displayed as frequencies and percentages. To detect the association between knowledge and respondent's characteristics, chi square test was used. The results were considered significant at $p < 0.05$.

2.4 Ethical Consideration:

Approval of the study was conducted from IRB committee in family medicine academy in Eastern Province and public health administration of MOH was requested prior to implementation of the study. The researchers had no conflict of interest. Consent was taken before enrolment of any participant. Confidentiality of data was insured throughout all stages of study. Participation in this study was voluntary and participants had the right to withdraw from the study at any time. Remove from published copy.

3. Results

A total of 176 physicians were included in this study, of them 50.6% were males and 49.4% were females. Less than half of the physicians (46%) were 31-40 years old, while only 18.1% were older than 40 years old. About two thirds were from Dammam sector and only one third were from Khobar sector. Regarding specialty, the majority of the participants, almost two thirds, were general practitioners while only 3.4% were family medicine consultants. More than half of the participants have more than 5 years of clinical experience (table1).

Previous experience or training on autism among the respondents are demonstrated in table 2. Only 20% of the physicians have ever attended training program in child mental health, whereas 62.5% have encountered cases of autism in their career. About 22% of the participants had familial history of autism.

Table 3 shows the knowledge about impairment in social interaction, communication and language development of autism among the respondents. Generally, the majority of the respondents (69.9%) had a good level of knowledge about autism, while 30.1% had a poor level of knowledge. The score of knowledge ranged from 3 to 18 with median equals to 13 and 4 Interquartile Range. The majority of the respondents, about 86%, knew that behaviors best describe a child with childhood autism include marked impairment in use of multiple non-verbal behaviors such as eye to eye contact, facial expression, baby postures and gestures during social interaction. Moreover, a similar proportion of the respondents (about 86%) knew that lack of social or emotional reciprocity and lack of spontaneous will to share enjoyment, interest or activities with other people are social behaviors of autistic child. Similarly, failure to develop peer relationship appropriate for developmental age was reported by 84.1% of the physicians as a behavior of an autistic child. Only 60.2% and 67.6% (respectively) reported that staring

into open space and not focusing on anything specific is a characteristic of autism and that social smile is usually absent in a child with Autism.

Knowledge about restricted repetitive interests and behaviors of autism among the respondents are presented in table 4. The lowest percentage of physicians, only 21.6%, was among those who reported the presence of a relation between autism and abnormal eating habit, followed by 55.7% reported persistent preoccupation with parts of objects as a characteristic of autism. While, more than two thirds described delay or total lack of development of spoken language, stereotyped and repetitive movement, and loss of interest in the environment and surroundings as autistic features.

Table 5 summarizes the cause and risk factors of autism. The majority, about 61%, described autism as a neuro-developmental disorder which usually starts in the childhood. More than half, about 53%, stated that autism could be associated with mental retardation, while one third said that autism could be associated with epilepsy. About 5% and 6% of the physicians described autism as childhood schizophrenia and autoimmune condition, respectively.

Knowledge about management modalities of the autism is demonstrated in table 6. The most frequently reported modalities were medication, speech therapy, special education, and referral to psychiatrist which reported by about one third of the respondents. Use of speech therapy, special education, and referral to psychiatrist without medications was reported by a quarter of the respondents as the correct modality of autism treatment. Use of single modality such as medications, special education, or speech therapy alone was reported by 3.4%, 7.4%, 0.6% of the respondents, respectively.

Attitudes towards the role of primary healthcare physicians in the management modalities of the autism are shown in table 7. More than half of the physicians (52.3%) had a positive attitude towards referral of a suspected case of autism to a pediatrician, and 47.2% thought that primary healthcare physicians can play an active role in the management of autism. Although 37.5% of the physicians thought that diagnosis of autism is not difficult, 41% stated that management of autism is not the job for primary healthcare physicians.

Table 7 demonstrates the association between respondents' characteristics and knowledge about autism. Gender and age were significantly associated with level of knowledge about autism. About 85% of females had a good knowledge about autism in comparison to 55.1% of males ($p=0.001$). a higher percentage of older age group (80%) had a good knowledge than younger age group (64.3%), who were respondents less than 34 years old. Academic qualification was significantly related to the knowledge about autism since all consultants had a good knowledge in comparison to 86.7% of specialists and only 62.4% of general practitioners ($p=0.003$). Higher percentages of respondents with more than 5 years of clinical experience (80%) or those with less than 1 year (75%) had a good knowledge than those with 1-5 years of experience were only 56.6% had a good knowledge

($p=0.003$). Both factors of encountering a patient with autism or having a case in the family were significantly associated with a good level of knowledge about autism.

Gender and age were significantly associated with attitudes towards autism management. A higher percentage of males (44.9%) agreed to the statement of "Autism is difficult to diagnose or manage by primary health care physicians" in comparison to only 29.9% of females ($p=0.041$). However, disagreement to that statement was significantly higher among young age group (35.7%) than those older than 34 years old (18.8%) as shown in table 8.

Good level of knowledge was found to be significantly associated with thinking that primary healthcare physicians can play an active role in the management of autism ($p=0.030$). Poor level of knowledge was found to be significantly associated with agreement to "Management of autism is not the job for primary healthcare physicians" ($p=0.047$).

4. Discussion

Early detection of autism is important for early intervention which is associated with better outcome of autism management. However, identification of autism is dependent on knowledge of health providers, particularly at first line in primary health setting. The care provider should be aware of autism's symptomology and should be confident in the assessment of clinical presentations based on DSM-V (11). Not only in children, diagnosis of autism is also important in adults, or what is called lost generation, who excluded from a diagnosis before re-definition of autism as a spectrum disorder (12). Thus, knowledge and attitude of the medical practitioners at primary health setting is essential for proper care of autistic patients. This study was implemented to study knowledge and attitude of primary health care physicians about autism spectrum disorder in Dammam and Al-khobar cities in Saudi Arabia.

In the present study, about third of the doctors working in primary healthcare had a poor level of knowledge and could not answer more than 60% of the questions about autism correctly. These results can be referred to lack of experience among those respondents who were general practitioner with years of experience less than 5 years. Also, some of them didn't encounter any cases of autism during their work or have cases of autism in family.

According to Alharbi A., (2018); a study conducted in Riyadh, Saudi Arabia and included 1451 family members and healthcare providers; about 66.3% were aware of autism. This was close to the result reported in the present study (13).

Moreover, similar result was reported in a systematic review conducted by Corden et al. where the mean knowledge of autism ranged from 9 to 13.5. The findings of this study fall within this range which presented the pooled result from 35 studies (9). In Australia, a higher level of knowledge about autism as 62% of surveyed general practitioners answered 75% of questions correctly (14).

Some studies reported low level of awareness about autisms such as in Pakistan where about 55.4% of general practitioners said they did not hear about autism (15). Moreover, only 35.2% of the medical practitioners in Nepal was considered to have adequate knowledge about diagnostic criteria of autism (16).

The current study noted that the majority of the respondents had high knowledge regarding some diagnostic characteristics of autism. This can be explained by most of them encounters cases of autism during their work and have more than 5 years of experience. On the other hand, some important diagnostic points were not known by many of the respondent as persistent preoccupation with parts of object, staring into open space and absent social smile. This could be due to absent of formal child psychiatry exposure during their training. Also, negative attitude of participants about diagnosis of autism by Primary health care physician can be the cause of poor knowledge.

Rohanachandra YM et al., (2017) (17) found lower levels of knowledge about diagnostic features and comorbidities of childhood autism among 176 doctors in a tertiary care hospital in Sri Lanka.

The majority of the surveyed physicians in the present study described autism as a neuro-developmental disorder which usually starts in the childhood. While, less percentage of the physicians described autism as childhood schizophrenia and autoimmune condition, respectively. Rahbar MH et al., (2011) showed lack of knowledge about etiology and diagnosis among general practitioner (15). Al-Farsi YMet al., (2016) in Oman found suboptimal awareness of etiological factors relevant for the development of autism (18).

In the present study gender significantly associated with level of knowledge about autism. The majority of females physicians had a good knowledge about autism in comparison to males.

In the systematic review of Corden et al., one of five studies that investigated the association between gender and knowledge about autism found a significant higher knowledge about autism in Turkish females than in males (19). Alharbi et al. found gender not significantly related to the level of knowledge. This could be attributed to inclusion of health care and family members in the same sample (13).

In the present study, level of knowledge about autism was significantly higher in older age group. This can be referred to the more experience gained with age and the more cases seen by the physician.

Similar findings were reported by Corsano et al., (2020) as the knowledge scores was found to increase with age (20). However, some other studies found knowledge about autism significantly higher among younger age group (14, 15). Other studied found no significant association between age and knowledge about autism (13, 21, 22).

Academic qualification was significantly related to the knowledge about autism in this study, since all consultants had a good knowledge in comparison to specialists and

general practitioners ($p=0.003$). Studies found pediatricians and psychiatric specialists more knowledgeable about autism than general practitioners (23-25). Similar findings reported by Esegibe EE et al., (2015) that showed a good knowledge of autism among medical doctors who are specialists particularly pediatricians and psychiatrists and in those who had seen a case of autism in the past. Knowledge was limited in general practitioners and the knowledge gap was mostly about onset and comorbidities of autism (26).

In the present study, significant higher percentages of respondents with more than 5 years of clinical experience or those with less than 1 year had a good knowledge. This can be due to the updated and fresh knowledge gained from their undergraduate education or their training programs. Also, the old experience is very important with the more patients they see in the clinic the more knowledge they have about the cases. Some studies found that newly graduated general practitioners had better knowledge than those who have worked for years (14, 15).

In the present study, both factors of encountering a patient with autism or having a case in the family were significantly associated with a good level of knowledge about autism. Many studies reported that clinical experience with autistic patients were associated with better knowledge (16, 20, 24, 27).

Having a previous training on child mental health were non significantly associated with level of knowledge about autism among included primary healthcare physicians. Similar findings reported by Unigwe et al. (2019) where no relation was found between knowledge and previous training (28). Differently, many studies found a significant relationship between previous training and knowledge about autism (27, 29, 30).

This study found that good level of knowledge was found to be significantly associated with thinking that primary healthcare physicians can play an active role in the management of autism.

Almutairi et al. (2019) conducted a survey among 105 Saudi pediatricians to investigate the knowledge and attitudes of autism. The pediatricians thought that an early detection and intervention are the most important factors in autism management (31).

A study found higher level of knowledge associated with self-confidence about management of autistic patients (29). A study included nurses found more than half were non comfortable to deal with autistic patients (25).

Although generally low to moderate level of knowledge was reported in the literature, variability in the knowledge level was demonstrated at national and international levels. For instance, a study from UK found 91.2% correct answers regarding autism knowledge (28), while another study revealed that only 28% of clinical practitioners in a psychiatric hospital had a sufficient level of knowledge (32). Thus, autism knowledge seems to vary widely across different studies due to different samples, populations, and assessment methods. In some studies, misconceptions about autism were very obvious. In Nigeria, 40% of studied nurses

believed autism is due to preternatural causes such as curses and devil power (33). In Pakistan, a cross-sectional study suggests that current professionals in the field have an unbalanced understanding of autism due to presence of several misconceptions regarding many of the salient features of autism including developmental, cognitive and emotional features (34).

Furthermore, cultural differences can explain some of the variation present in the knowledge about autism among health professionals. However, a mixed qualitative and quantitative approach is required to investigate the reasons behind this variation.

This study is limited by the geographical sectors which may reduce the generalizability of the findings. Moreover, the tool used in this study did not evaluate knowledge of providing proper care for autistic patients.

5. Conclusions

Although the majority of the physicians, about two thirds, had a good level of knowledge, this level is considered inadequate for early identification of autism at primary healthcare setting. Modalities of treatment such as medication, speech therapy, special education, and referral to psychiatrist were reported by about one third of the respondents. Gender, age, academic qualification, duration of clinical experience, familial or clinical dealing with autistic patients were significantly associated with knowledge about autism. Only gender and age were significantly associated with attitudes towards autism management. Good level of knowledge was found to be significantly associated with thinking that primary healthcare physicians can play an active role in the management of autism.

6. Recommendations

- Improve the knowledge of primary health care physicians by providing more training programs about autism.
- Incorporate important knowledge about child mental health and developmental disorders in undergraduate and post graduate medical curriculum.
- Encourage the primary health care physicians to attend conferences about autism.
- Continuous medical education in the primary health care centers by applying updated lectures about autism to the physicians.
- Change the negative attitude of primary health care physicians toward management of autism in primary health care centers by equipping them by updated and evidence based knowledge about autism.

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Table 1: Demographic characteristics of the respondents, (n = 248):

Variables	Frequency	Percent (%)
Gender		
Male	89	50.6
Female	87	49.4
Age		
18-30	63	35.8
31-40	81	46.0
41-50	24	13.6
51-60	8	4.5
Sector		
Dammam sector	124	70.5
Khobar sector	52	29.5
Qualification		
General practitioner	125	71.0
Family medicine specialist	45	25.6
Family medicine consultant	6	3.4
Duration of clinical experience		
0-1 year	8	4.5
1-5 years	76	43.2
more than 5 years	92	52.3

Table 2: Previous experience or training on autism among the respondents

Variables	Frequency	Percent (%)
Have you ever attended any training program in child mental health		
Yes	35	19.9
No	141	80.1
In your career, have you encountered any cases of Autism?		
Yes	110	62.5
No	66	37.5
Do you have any cases of autism in your family?		
Yes	39	22.2
No	137	77.8

Table 3: Knowledge about impairment in social interaction, communication and language development of autism among the respondents (Domain1, 2)

Variables	Frequency	Percent (%)
Marked impairment in use of multiple non-verbal behaviors such as eye to eye contact, facial expression, baby postures and gestures during social interaction?		
Yes	152	86.4
No	8	4.5
I don't know	16	9.1
Failure to develop peer relationship appropriate for developmental age?		
Yes	148	84.1
No	13	7.4
I don't know	15	8.5
lack of spontaneous will to share enjoyment, interest or activities with other people?		
Yes	153	86.9
No	7	4
I don't know	16	9.1
lack of social or emotional reciprocity?		
Yes	152	86.4
No	9	5.1
I don't know	15	8.5
Staring into open space and not focusing on anything specific?		
Yes	106	60.2
No	31	17.6
I don't know	39	22.2
The child can appear as if deaf or dumb?		
Yes	125	71
No	21	11.9
I don't know	30	17
Loss of interest in the environment and surroundings?		
Yes	134	76.1
No	24	13.6
I don't know	18	10.2

Social smile is usually absent in a child with Autism?		
Yes	119	67.6
No	24	13.6
I don't know	33	18.8
Delay or total lack of development of spoken language?		
Yes	129	73.3
No	18	10.2
I don't know	29	16.5

Table 4: Knowledge about restricted repetitive interests and behaviors of autism among the respondents (Domain 3)

Variables	Frequency	Percent (%)
Stereotyped and repetitive movement (e.g. Hand or finger flapping or twisting)?		
Yes	143	81.3
No	10	5.7
I don't know	23	13.1
Autism is related to abnormal eating habit?		
Yes	38	21.6
No	72	40.9
I don't know	66	37.5
Persistent preoccupation with parts of objects?		
Yes	98	55.7
No	16	9.1
I don't know	62	35.2
Love for regimented routine activities?		
Yes	115	65.3
No	23	13.1
I don't know	38	21.6

Table 5: Knowledge about causes and risk factors of autism among the respondents (Domain 4)

Variables	Frequency	Percent (%)
Autism is Childhood Schizophrenia?		
Yes	8	4.5
No	131	74.4
I don't know	37	21.0
Autism is an auto-immune condition?		
Yes	11	6.3
No	139	79.0
I don't know	26	14.8
Autism is a neuro-developmental disorder?		
Yes	107	60.8
No	36	20.5
I don't know	33	18.8
Autism could be associated with Mental Retardation?		
Yes	94	53.4
No	43	24.4
I don't know	39	22.2
Autism could be associated with Epilepsy?		
Yes	58	33.0
No	48	27.3
I don't know	70	39.8
Onset of Autism is usually in		
Childhood	113	64.2
Infancy	50	28.4
Neonatal age	13	7.4

Table 6: Knowledge about management modalities of the autism

Treatment modality	Frequency	Percent
Medication	6	3.4
Medication, Referral to Psychiatrist	2	1.1
Medication, Special Education	3	1.7
Medication, Special Education, Referral to Psychiatrist	4	2.3
Medication, Speech Therapy	2	1.1
Medication, Speech Therapy, Referral to Psychiatrist	1	0.6
Medication, Speech Therapy, Special Education	8	4.5
Medication, Speech Therapy, Special Education, Referral to Psychiatrist	56	31.8
Referral to Psychiatrist	11	6.3

Special Education	13	7.4
Special Education, Referral to Psychiatrist	15	8.5
Speech Therapy	1	0.6
Speech Therapy, Special Education	11	6.3
Speech Therapy, Special Education, Referral to Psychiatrist	43	24.4
Total	176	100.0

Table 7: Attitudes towards the role of primary healthcare physicians in the management modalities of the autism

Item	Frequency	Percent (%)
Autism is difficult to diagnose or manage by primary health care physicians		
Strongly disagree	16	9.1
Disagree	36	20.5
Neutral	58	33.0
Agree	47	26.7
Strongly agree	19	10.8
Primary healthcare physicians can play an active role in the management of autism		
Strongly disagree	24	13.6
Disagree	18	10.2
Neutral	51	29.0
Agree	64	36.4
Strongly agree	19	10.8
Management of autism is not the job for primary healthcare physicians		
Strongly disagree	13	7.4
Disagree	44	25.0
Neutral	47	26.7
Agree	54	30.7
Strongly agree	18	10.2
For the diagnosis of autism in children, primary healthcare physicians should refer any suspected case to a pediatrician		
Strongly disagree	16	9.1
Disagree	33	18.8
Neutral	35	19.9
Agree	64	36.4
Strongly agree	28	15.9

Table 7: Association between respondents' characteristics and knowledge about autism

Variables	Knowledge about autism		Chi-square	P value
	Poor knowledge	Good knowledge		
Gender				
Male	40	49	18.8	<0.001*
	44.9%	55.1%		
Female	13	74		
	14.9%	85.1%		
Age group				
≤ 34 years old	40	72	4.6	0.32*
	35.7%	64.3%		
>34 years old	13	51		
	20.3%	79.7%		
Academic qualification				
General practitioner	47	78	11.9	0.003*
	37.6%	62.4%		
Family medicine specialist	6	39		
	13.3%	86.7%		
Family medicine consultant	0	6		
	0.0%	100.0%		
Sector				
Dammam sector	38	86	0.06	0.812
	30.6%	69.4%		
Khobar sector	15	37		
	28.8%	71.2%		
Duration of clinical experience				
0-1 year	2	6	11.4	0.003*
	25.0%	75.0%		
1-5 years	33	43		
	43.4%	56.6%		
More than 5 years	18	74		
	19.6%	80.4%		

Attending training program in child mental health				
Yes	7	28	2.1	0.145
	20.0%	80.0%		
No	46	95		
	32.6%	67.4%		
In your career, have you encountered any cases of Autism?				
Yes	24	86	9.6	0.002*
	21.8%	78.2%		
No	29	37		
	43.9%	56.1%		
Do you have any cases of autism in your family				
Yes	6	33	5.2	0.023*
	15.4%	84.6%		
No	47	90		
	34.3%	65.7%		

*Statistical significant (p<0.05).

Table 8: Association between respondents' characteristics and attitude towards autism management

Variables	Autism is difficult to diagnose or manage by primary health care physicians			Chi-square	P value
	Disagree	Neutral	Agree		
Gender					
Male	27	22	40	6.4	0.041*
	30.3%	24.7%	44.9%		
Female	25	36	26		
	28.7%	41.4%	29.9%		
Age group					
≤ 34 years old	40	30	42	7.5	0.023*
	35.7%	26.8%	37.5%		
>34 years old	12	28	24		
	18.8%	43.8%	37.5%		
Academic qualification					
General practitioner	32	40	53	5.8	0.213
	25.6%	32.0%	42.4%		
Family medicine specialist	18	15	12		
	40.0%	33.3%	26.7%		
Family medicine consultant	2	3	1		
	33.3%	50.0%	16.7%		
Sector					
Dammam sector	33	45	46	2.7	0.265
	26.6%	36.3%	37.1%		
Khobar sector	19	13	20		
	36.5%	25.0%	38.5%		
Duration of clinical experience					
0-1 1year	3	2	3	4.8	0.305
	37.5%	25.0%	37.5%		
1-5 years	24	19	33		
	31.6%	25.0%	43.4%		
More than 5 years	25	37	30		
	27.2%	40.2%	32.6%		
Attending training program in child mental health					
Yes	22.9%	37.1%	40.0%	0.967	0.617
	44	45	52		
No	31.2%	31.9%	36.9%		
	22.9%	37.1%	40.0%		
In your career, have you encountered any cases of Autism?					
Yes	27	43	40	5.9	0.051
	24.5%	39.1%	36.4%		
No	25	15	26		
	37.9%	22.7%	39.4%		
Do you have any cases of autism in your family					
Yes	Disagree	Neutral	Agree	3.1	0.208
	8	17	14		
No	20.5%	43.6%	35.9%		
	44	41	52		