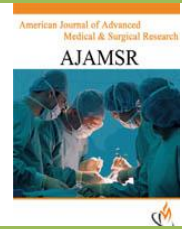




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ASSESSMENT OF PHYSICAL HEALTH NEEDS OF GIFTED SCHOOL STUDENTS IN MAKKAH AL-MUKARRAMAH, SAUDI ARABIA

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ABSTRACT

Due to the importance of gifted individuals in every society as a national wealth and power driving towards civilization, progress and prosperity, they should have the necessary care from physical aspects to invest their capacity optimally. To evaluate physical health services needs for gifted students in Makkah region in, 2014 by the perception of gifted students (from Mawhiba Summer Enrichment Program at King Abdullah Medical City and Umm Al-Qura University) focusing on physical health. A cross-sectional study was implemented among a representative sample of gifted students recruited from King Abdul-Aziz Medical city (KAMC) "n=100" and Umm Al-Qura University (UQU) "n=80". A self-administered questionnaire was used for data collection. It included baseline characteristics and finally assessment of the physical health services provided to them. The study included 138 gifted students with a response rate of 76.6%. Their age ranged between 12 and 17 years with a mean of 15.3 (± 0.6) years. Slightly more than half of them (51.4%) were males. Most of the gifted students (70.3%) agreed that physical services currently provided to them are available whereas 52.9% agreed that they are adequate and 75.4% agreed that they needed improvement. with no difference between males and female students in this regard. The most agreed upon recommended physical services by gifted students were providing training programs for health care providers who provide their services to gifted people (87%), awareness of the potential risks during talented programs for them and which do not fit in with their chronological age and at academic acceleration (86.9) and awareness of talented people of the importance to wear personal protective equipment during the programs which do not fit in with their chronological age (86.3%). There was no significant correlation between degree of giftedness and physical recommendations given by students ($r=-0.150$, $p=0.078$). Gifted students recommended physical health services. Provide promotion and consultation services to the gifted student's parents about gifted health and how to detect health problems through: social media, programs, online courses are recommended.

INTRODUCTION

Giftedness is a natural gift and the gifted students are a national wealth must be invested and sponsored as any other wealth so, they required a lot of attention. The Kingdom of Saudi Arabia (KSA) has a great interest in the gifted students. However, the fact indicates that only 500 out of 33000 (1.5 % of schools) concerned about gifted

students [1]

One challenge in our study is that there is no single agreed on definition, the Giftedness is defined as Exceptional ability or unusual preparation inherently for individual. While Morelock defined it as "Giftedness implies an advanced ability to construct meaning in the



context of experience, including an enhanced capacity to think abstractly and to respond emotionally to abstract concepts used in the interpretation of experiential phenomena [2]. The gifted student defined as a child or youth who performs at or shows the potential for performing at a remarkably high level of accomplishment when compared to others of the same age, experience or environment and who exhibits high performance capability in an intellectual, creative or artistic area, possesses an unusual capacity for leadership and excels in a specific academic field [3].

World Health Organization (WHO) defined health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [4]. Based on the previous definitions the gifted health defined as a state of complete physical, mental and social well-being for those who possess superior abilities or show the potential for performing at a remarkably high level of accomplishment when compared to others of the same age, experience or environment.

A study of Terman *et al*, confirmed that the physical, health and athletic growth for high achievers and gifted individuals is higher than their peers in the level of ordinary intelligence. A child with superior talent characterized in early childhood walks three and a half months earlier than normal child. He also masters vocabulary and words pronunciation in a younger age than his peers [5].

According to the characteristics and traits of gifted, most people think that they have the ability and skill to identify their problems and find solutions to overcome these problems. Some others consider that the care provided to the gifted is not necessary and not an important factor according to their high abilities. However, the studies and researches of Hollingworth, Gross, Silverman, Davis and Rimm proved the opposite [6].

The absence of health specialized in giftedness leads to misdiagnosis of the gifted. There is no special training in the health field for giftedness; all of these are related to the health factors [7]. The current study aimed to measure the gifted students' opinions about physical health services that provided to them.

METHODS

A Cross sectional study was conducted at the of the second term including a representative sample of gifted students in Makkah; high school freshmen who participated in Mawhiba Summer Enrichment Program in KAMC: Female (40), Male (60) and high school freshmen who participated in Mawhiba Summer Program in UQU: Female (40), Male (40). Self-administered questionnaire, approved by: health need assessment, gifted filed and public health was utilized for data collection.

A pilot study occurred among mothers of gifted students by conducting an interview at one of the gifted mothers' house. There were eight gifted students and six

mothers. Through the study, we identified problems that face gifted students at school (environmental, psychological, social and educational). We conducted a work shop of gifted health clinics at KAMC. It aimed at specifying appropriate services that must be provided to gifted student according to their characteristics and problems. Also, a pilot study was conducted among giftedness specialist in Makkah Almukarramah and Jeddah included teachers of giftedness and supervisors of giftedness. Diploma students in giftedness from Mawhiba and academics with Diploma in giftedness. Before conduction of the study, confidentiality and permission from interviewee as well as from place were assured

Data were analyzed by Software Package for the Social Sciences (SPSS) program version 21. Chi-square and student's t-test were applied and a p-value at or less than 0.05 was considered statistically significant.

RESULTS

The study included 138 gifted students. Overall response rate of 76.6% was obtained. It was higher among female compared to male students (83.8% versus 71%). This difference was statistically significant. Also, the response rate among students of KAMC was higher than that of UQU (82% versus 70%). However, this difference was not statistically significant, $p=0.059$

Age of the participants ranged between 12 and 17 years with a mean of 15.3 (± 0.6) years. More than half of them (59.4%) were recruited from KAMC program whereas the remaining (40.6%) were recruited from UQU program. Slightly more than half of them (51.4%) were males.

Table 1 summarizes the gifted students' opinions regarding physical characteristics of gifted students. The strongly-agreed/agreed physical characteristics reported by them were the following; speech deficiency was lower than normal (45.7%), dependence on healthy diet was higher than normal (38.4%) and the ability to walk was earlier than his normal peer (37%).

Table 2 shows comparison between male and female students in their agreement regarding physical characteristics of gifted students. Generally, there was no statistically significant difference between them except in the following characteristics:

- Be able to walk earlier than his normal peer. As (46.3%) of female students compared to (28.2%) of male students agreed with this character, $p=0.028$
- Early teeth growth. As (25.4%) of female students compared to (9.9%) of male students agreed with this character, $p=0.016$
- Short stature. As (25.4%) of female students compared to (9.9%) of male students agreed with this character, $p=0.016$

Most (70.3%) of the gifted students strongly agreed or agreed that physical services currently provided to them are available, whereas (52.9%) of them strongly agreed or agreed that they are adequate, and (75.4%) of



them strongly agreed or agreed that they needed improvement. There was no difference between male and female students in this regard.

As shown in table 3, the most strongly agreed or agreed upon recommended physical services by gifted students were; availability of training programs for health care providers who offer their services to gifted people (weighted mean=4.32), awareness of the potential risks during their training programs, and which do not fit in with

their chronological age and at academic acceleration (weighted mean=4.31), and the awareness of the importance of wearing Personal Protective Equipment (PPE) by gifted students during the programs that do not fit in with their chronological age (weighted mean=4.25). Regarding gender difference in this aspect, table 4 shows that female students recommended all of the previous points at higher significant rates than male students.

Table 1. Gifted physical characteristics from participants` perspective

Physical characteristics	Strongly agree N (%)	Agree N (%)	Not sure N (%)	Disagree N (%)	Strongly disagree N (%)
Physical composition is better than normal children.	2 (1.4)	32 (23.2)	29 (21.0)	50 (36.2)	25 (18.1)
Advanced slightly in his bone growth from his normal peers.	6 (4.3)	18 (13.0)	42 (30.4)	48 (34.8)	24 (17.4)
Be able to walk earlier than his normal peer.	7 (5.1)	44 (31.9)	48 (34.8)	29 (21.0)	10 (7.2)
His teeth grow early.	6 (4.3)	18 (13.0)	63 (45.7)	41 (29.7)	10 (7.2)
Early Puberty signs appearance.	5 (3.6)	23 (16.7)	40 (29.0)	51 (37.0)	18 (13.0)
Dependence on healthy diet better than normal.	10 (7.2)	43 (31.2)	38 (27.5)	34 (24.6)	12 (8.7)
Speech deficiency lower than normal.	16 (11.6)	47 (34.1)	30 (21.7)	33 (23.9)	11 (8.0)
Problems in one of the five senses.	3 (2.2)	15 (10.9)	37 (26.8)	49 (35.5)	33 (23.9)
Optical problems	7 (5.1)	29 (21.0)	38 (27.5)	43 (31.2)	20 (14.5)
Obesity	6 (4.3)	11 (8.0)	50 (36.2)	51 (37.0)	20 (14.5)
Thinness	3 (2.2)	26 (18.8)	47 (34.1)	42 (30.4)	20 (14.5)
Short stature.	3 (2.2)	21 (15.2)	39 (28.3)	50 (36.2)	23 (16.7)

Table 2. Comparison between agreement of male and female students regarding gifted physical characteristics

Physical characteristics	Males N (%)	Females N (%)	p-value
Physical composition is better than normal children	13 (18.3)	21 (31.3)	0.076
Advanced slightly in his bone growth from his normal peers	14 (19.7)	10 (14.9)	0.458
Be able to walk earlier than his normal peer	20 (28.2)	31 (46.3)	0.028
His teeth grow early	7 (9.9)	17 (25.4)	0.016
Early Puberty signs appear	14 (19.7)	14 (20.9)	0.864
Depends on a healthy diet better than normal.	28 (39.4)	25 (37.3)	0.798
Speech deficiency lower than normal.	31 (43.7)	32 (47.8)	0.629
Problems in one of the five senses	10 (14.1)	8 (11.9)	0.709
Optical problems	15 (21.1)	21 (31.3)	0.172
Obesity	10 (14.1)	7 (10.4)	0.516
Thinness	17 (23.9)	12 (17.9)	0.385
Short stature	7 (9.9)	17 (25.4)	0.016

Table 3. The gifted physical health services that should provide to giftedness: Gifted students` ranking

	Weighted mean	Ranking
Provide training programs for health care providers who offer their services to gifted students.	4.32	1



Awareness of the potential risks during gifted programs for them and which do not fit in with their chronological age and at academic acceleration.	4.31	2
Awareness of gifted students of the importance to wear PPE during the programs which do not fit in with their chronological age.	4.25	3
League thorough medical examination.	4.24	4
Sensitize the gifted students family of all diseases that could infect the gifted students.	4.23	5
Awareness of gifted students of the importance to provide information about the giftedness they possessed to their pediatrician or the family doctor.	4.16	6
Optical checkup.	4.09	7
Auditory examination.	3.99	8
Measurements and laboratory tests.	3.67	9
Measurement of bone density.	3.45	10

Table 4. Gender difference regarding recommended physical health services that should provide to giftedness: Students' perspectives

Physical Health Services	Males Mean (SD)	Females Mean (SD)	p-value
Provide training programs for health care providers who offer their services to gifted students.	4.07 (0.9)	4.42 (0.7)	0.017
Awareness of the potential risks during gifted programs for them and which do not fit in with their chronological age and at academic acceleration.	3.89 (1.06)	4.31 (0.8)	0.008
Awareness of gifted students of the importance to wear PPE during the programs which do not fit in with their chronological age.	3.83 (1.1)	4.16 (0.8)	0.045
League thorough medical examination.	3.56 (1.09)	3.79 (0.9)	0.194
Sensitize the gifted students family of all diseases that could infect the gifted students.	3.28 (1.1)	3.64 (1.0)	0.060
Awareness of gifted students of the importance to provide information about the giftedness they possessed to their pediatrician or the family doctor.	4.24 (0.8)	4.39 (0.8)	0.277
Optical checkup.	4.21 (0.9)	4.30 (0.8)	0.559
Auditory examination.	4.07 (1.0)	4.25 (0.8)	0.260
Measurements and laboratory tests.	4.17 (1.0)	4.30 (0.9)	0.420
Measurement of bone density.	4.26 (0.8)	4.39 (0.8)	0.331

Overall degree of giftedness ranged between 100 and 793 with a mean of 718.5±58.1. There was no significant correlation between degree of giftedness and physical recommendations given by students ($r=-0.150$, $p=0.078$)

DISCUSSION

Due to the importance of gifted individuals in every society as a national wealth and power driving towards civilization, progress and prosperity, we had to mandatory provide the necessary care to this category from physical aspects to invest their capacity optimally.

The present study is unique in its kind in our society. It is carried out with an ultimate aim to evaluate the physical health services needs for gifted students in Makkah Al-Mukarramah, Saudi Arabia by the perception of gifted students.

The most common believe about gifted children is that they are healthy and they do not need special care. Consequently, they have less care and attention in the community [8]

Common concerns about gifted students include learning disabilities as they have hidden learning disabilities. Such

disabilities may include auditory processing weaknesses, difficulties with visual perception, writing disabilities, spatial disorientation, and attention deficits [9].

Gifted and talented children may develop poor self-image when learning disabilities are present. They tend to dwell on the things they cannot do and need help to develop a good self-concept. Gifted students with learning disabilities have a great deal of trouble getting needed help in their schools because their academic achievement is usually above grade level despite their disability. Most school systems require a history of academic failure before they will provide remedial services [10].

Parents and family members of gifted adolescents may lack information about the traits of gifted children. Such children may appear to be physically sensitive, perfectionist, and may frequently question authority. Some



have trouble relating to or communicating with their peers because of disparities in vocabulary size, personality, interests, and motivation [11].

To the trained eye, it can be fairly easy to spot a gifted child. Even to the not-so-trained eye of a parent, it's easy to notice that a child is not quite as other children [12]. Bainbridge listed the characteristics of young gifted children. In the current study, the commonest agreed upon physical characteristics of gifted person as reported by gifted students were that speech deficiency was lower than normal, dependency on healthy diet was better than normal, and the ability to walk was earlier than his normal peers, sleep disorders, such as insomnia and interrupted sleep, permanent stress and anxiety, isolation, and idealism and freedom from mistakes.

In comparison between male and female students in their agreement regarding physical, mental and psychological characteristics of gifted students, generally, there were no significant differences between them except in few characteristics as being able to walk earlier than their normal peers. More female than male students agreed with this character. Teeth growth early as more female than male students agreed with this character. Short stature as more female than male students agreed with this character. Idealism and freedom from mistakes as more male than female students agreed with this character.

It seems from reviewing literature that there is no agreement on the characteristics of gifted person as also demonstrated in our study.

In the current study, the agreement regarding gifted obesity physical characteristic among the male gifted students was (14.1%), while the female gifted students was (10.4%). In a study conducted by Isbaih in Nablus city in Palestine to estimate the prevalence of obesity among school children aged 6-12 years. A prevalence of obesity among male students was (7.9 %), while the female

students were (4.9 %). This figure is lower than our study [13].

As shown in the current study, the agreement among gifted students regarding gifted thinness physical characteristic was (21%). In study conduct to assess the prevalence of obesity, overweight (including obesity) and thinness in children in the city of Florianopolis (southern Brazil), a sample of 7–10 years old schoolchildren showed that the prevalence of thin students was 3.2%. This is lower than the current study [14].

In conclusion, most of the gifted students recommended providing training programs for health care providers who provide their services to gifted people, raising awareness of the potential risks during talented programs for them and which do not fit in with their chronological age and at academic acceleration. Most of them strongly agreed or agreed that the physical health services are available and adequate. However, they need a lot of improvement; the Ministry of Health (MOH) should establish the gifted health clinic which provides special services to gifted students in order to monitor their health status continuously.

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CONFLICT OF INTEREST

No conflict of interest

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