

Adolescents' Understanding of Health in Erbil City

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Abstract

Background and objective: As a sensitive stage of life, adolescence and its health status can shape the individual's overall health in his later life; therefore, it is highly significant to enhance and maintain adolescents' health and increase their health knowledge. The purpose of the current study was to assess the adolescents' knowledge about health in the Region of Kurdistan in Iraq. **Materials and methods:** In a cross-sectional quantitative study, 203 adolescents, aged 10 to 19 years, were investigated in Kurdistan region of Iraq from April to May 2022 using simple random sampling method. A Google form was utilized to collect required data. The form was electronically shared with the adolescents. Descriptive Statistics used to get the results using Statistical Package for the Social Sciences (SPSS, version 26). **Results:** According to the results from 203 participants, 56.2% and 43.8% of the adolescents aged between 14-19, and 10-13 years, respectively. Also, 98.5% lived with their parents, and 50.2% were female. Furthermore, their health was given special attention by their parents (88.7%). In addition, health was affected most by nutrition (68.5%), exercise (60.6%), sleeping (42.9%), rest (34%), clinics and health care providers, adolescents believed that their parents take care of their health by providing healthy food (15.76%). Also, 44.3% obtained their health knowledge from their parents and 34.5% from the internet. The adolescents believed they could increase their health knowledge through school (13.76%), training courses (12.8%), the internet (11.33%). According to the results, a significant association was found between the adolescents age and their teacher ($p=0.003$). Their residency had significant associations with their friends ($p=0.032$), teachers ($p=0.015$), and book ($p=0.005$). Their gender had significant associations with their books ($p=0.010$) and the internet ($p=0.035$). Their economic status was significantly correlated with their parents ($p<0.001$) and the internet ($p=0.024$). Finally, Was a significant association between the participants' residency and their sleeping ($p=0.002$). Their mothers' education was found to have a significant association with their exercise ($p=0.004$). There was a significant association between their fathers' education and going to clinic ($p=0.049$). **Conclusion:** Adolescents' perspectives and understanding of health varies. They cannot take care of themselves on their own, so they need to be assisted by their parents and teachers in order to promote and maintain their health.

Keywords: Health, Adolescence, Health Knowledge, Health Awareness

INTRODUCTION

The transitional phase of growth and development from childhood into adulthood is called adolescence. According to the World Health Organization (WHO), any individual between ages 10 and 19 is an adolescent. Moreover, based on WHO's definition, the age range from 10 to 24 years is defined as young age [1]. However, adolescence covers ages from 13 to 19 years in many communities which narrowly describe adolescence as puberty and the cycle of physical changes

resulting in reproductive maturity. On the other hand, some other communities define adolescence more broadly to cover moral, social, and psychological of maturation alongside with the physical maturation [2].

The Iraqi adolescent population have suffered widespread psychosocial distress due to many years of conflict in Iraq, which has also caused poverty and low school attendance. Different forms of violence that Iraqi adolescents are suffering from include harassment, sexual exploitation, abuse, abductions, and child marriage. They also have limited access to information and support systems. In this situation, it is highly crucial to improve the adolescents' safety, protection, and wellbeing because Iraq is about to transit from conflict and emergency to recovery and development [3,4].

The adolescents living in rural or traditional communities have very limited access to healthcare, schooling, employment, services, social opportunities, and resources [5]. In such contexts, suitable strategies at both individual and governmental levels need to be adopted in order to make sure that adolescents are safe, protected, and able to thrive without the risk of gender-based violence (GBV). In this regard, the Kurdistan Regional Government (KRG) took a measure at the governmental level by passing a law against domestic violence in 2011 which criminalized child and forced marriage, physical abuse, female genital mutilation, and honor crimes. In 2017, the National Child Protection Policy was ratified in Iraq, whereby Iraqi children and adolescents were protected from exploitation, neglect, abuse, and violence, and were provided with services and support. Despite these policies and measures, the implementation of these laws has been very limited [6,7].

According to the evidence from global evaluation research, it is not clear if the numerous proposed educational programs related to adolescents for improving health knowledge have been effective or not [8,9]. However, comprehensive combined activities related to health, education, and social support have been proved to be the most successful programs. Such comprehensive strategies have attracted global interest so as to promoted the adolescents' overall health and developmental outcomes, as well as their sexual and reproductive health (SRH) [10,11].

Given their rapid emotional and physical changed as a result of their elevated hormones and changes in social context during puberty, public health of adolescents can easily be jeopardized. As a result of encountering of teenagers with older students while going from primary to secondary schools, there will be a dramatic increase in the teenagers' chances of engaging in risky health behaviors. In spite of being engaged on risky behaviors, most adolescents are not aware of the potential consequences of such actions [12].

Peer pressure during adolescence has a strong effect on the adolescents and that is why most cigarette smokers start smoking from adolescence [13]. In addition, preventive measures, such as hand washing and physical activities to avoid infectious diseases, myopia, and obesity are rarely adhered to by teenagers and adolescent [14]. Low- and middle-income countries (LMICs) have restricted access resources and are faced with cultural barriers, and their policymakers lack sufficient interest, resulting in devoting suboptimal levels of attention and care to adolescents who are going through a highly crucial stage of their lives [15].

Individuals and societies are imposed huge costs due to risky health behaviors. Mental health problems due to engaging in unsafe relationships at a young age can cause severe health outcomes for teenagers. Smoking in adolescence, which has started due to unsafe relationships, can result in severe health issues, respiratory illnesses, interruption in brain development, and impairment in working memory which leads to limited job opportunities in the future [16-18]. As a result of health issues in preventive health domains and the adolescents' unawareness of short- and long-term adverse effects of risky behaviors, unexpected health threatening events might occur.

Teenagers' risky health behaviors also elevate the burden on societies by increasing health care costs while losing human capital [19,20].

In Kurdistan region of Iraq, there is shortage of literature regarding adolescent health. For that reason, this study shed light on this topic and filled the gap regarding health of adolescent literature. The purpose of this study was to assess the attitude and perspective of adolescents regarding health.

MATERIALS AND METHODS

Study design and setting: Using a cross-sectional quantitative method, the present study was carried out in Kurdistan region of Iraq from April to May 2022.

Study sample and sampling method: The study sample consisted of 203 adolescents aged 10 to 19 years.

Study instruments and data collection: Required data were collected through a Google form which was distributed among the study sample through Viber and WhatsApp groups of the communities available for the researchers. The participants were asked to fill out the form electronically. The questionnaire was in the Kurdish language and included the following parts: sociodemographic data, questions regarding the meaning and the importance of health, parents, school and society role in health care of adolescents, gender and adolescent's health, source of health knowledge, and the needs for health care.

Statistical analysis: The collected data were analyzed by Statistical Package for the Social Sciences (SPSS, version 22) through the application of two approaches; descriptive analysis approach (frequency and percentage) and inferential data analysis approach. A p-value of <0.05 was regarded to be statistically significant. Independent sample t-test is used to figure out the difference between the mean of two independent variables, for example to identify the significant difference between the mean of age group (10-13 and 14-19) with each of the sources about health protection including (parents, friends, teachers, books, internet, and social media) [38, 39, 40, 43, 44].

One way ANOVA is used to discover the difference between the mean of more than two independent variables, for example to examine the significant difference between the mean of residency group (urban, suburban, and rural) with each of the sources about health protection as mentioned before [38, 41, 42].

RESULTS

Analyzing the collected data revealed that over half of the adolescents are aged between 14 and 19 years (56.2%), and (43.8) % were aged between 10 and 13 years old. Almost all of them (98.5%) lived with their parents and a large number (67.5%) lived in the urban area. Regarding the education of the children's parents, the results showed that 44.3% of the mothers and 55.2% of the fathers had postgraduates study.

It was observed that 93.6% of the children are student, 37.9% and 37.4% of the were respectively the middle or the first child in their family. Also, 50.2% were females, and 49.8% were males. Moreover, 44.8% and 44.3% of them had respectively good and fair economic status (according their estimation). Furthermore, 69% of them did not have a history of health problems such as chronic diseases or major health issues (See Table 1).

Table 1: Descriptive Statistics for adolescents' sociodemographic

	Variables	Frequency (N)	Percentage (%)
Age	10-13	89	43.8
	14-19	114	56.2
Living with parents	Yes	200	98.5
	No	3	1.5
Residency	Urban	137	67.5
	Suburban	50	24.6
	Rural	16	7.9
Mother's education	illiterate	35	17.2
	Primary	31	15.3
	Intermediate	22	10.8
	Secondary	25	12.3
	Institute and above	90	44.3
Father's education	Illiterate	9	4.4
	Primary	33	16.3
	Intermediate	25	12.3
	Secondary	24	11.8
	Postgraduates	112	55.2
Going to school	Yes	190	93.6
	No	13	6.4
Birth order	First	76	37.4
	Middle	77	37.9
	Last	39	19.2
	Only child	11	5.4
Gender	Male	101	49.8
	Female	102	50.2
Economic status	Good	91	44.8
	Fair	90	44.3
	Poor	11	5.4
	I don't know	11	5.4
History of health problem	Yes	63	31
	No	140	69

The results of the present study indicated that the adolescents' health information was provided mostly by their parents (88.7%), the internet (38.9%), their teachers (37.9%), books (29.1%), their friends (15.3%), and the social media (12.3%) respectively (See Table 2).

Table 2: Sources of health protection and advice

Responses	Frequency (N)	Percentage (%)
Parents	180	88.7
Friends	31	15.3
Teachers	77	37.9
Books	59	29.1
Internet	79	38.9
Social media	25	12.3
None of the above	4	2

According to the results from figure 1, the majority of participants believed that the health was affected by nutrition (68.5%), followed by exercise (60.6%), sleeping (42.9%), rest (34%), clinics and health care providers (24.6%), and working (8.9%) respectively.

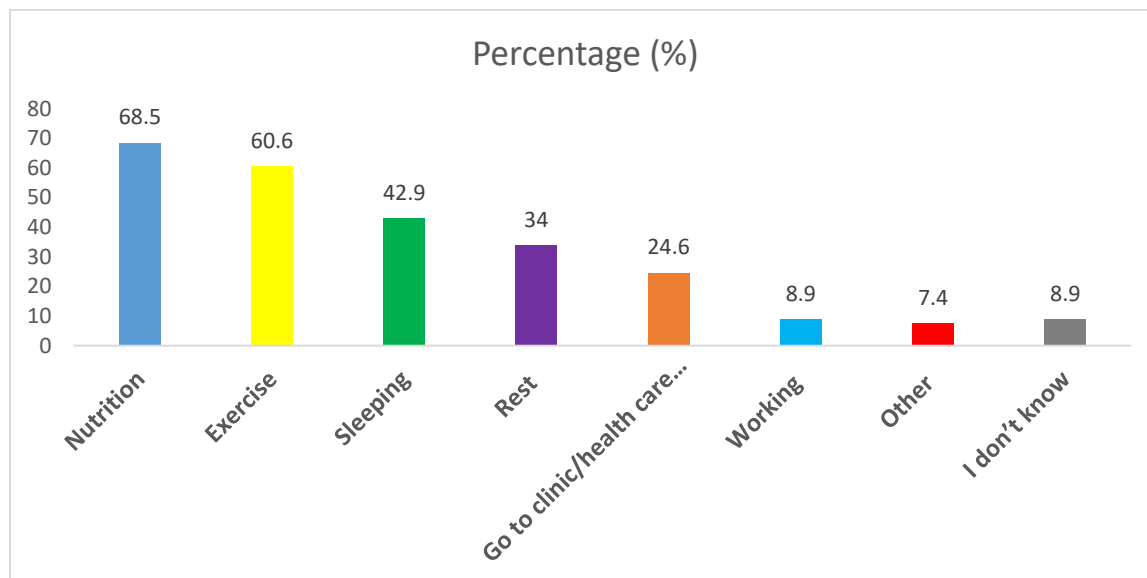


Figure 1: Adolescents' opinion regarding factors affecting their health

The adolescents believed that their parents take care of their health by providing healthy food (15.76%), asking about their health problems and pain and following up (14.77%), taking them to clinic (13.79%), making all things available (12.31%), giving advice (7.38), and advising to be clean and wash hand (6.4%) (See Table 3).

Table 3: Take care of the adolescents' health by their parents

Responses	Frequency (N)	Percentage (%)
Make all things available	25	12.31
Giving advice	15	7.38
With healthy foods	32	15.76
With healthy exercises	3	1.47
Advising to be clean and hand washing	13	6.4
Regular medical tests	11	5.41
Asking for having any health problem / pain / continuous follow up	30	14.77
When needed take me to clinic	28	13.79
With sleep	3	1.47
Protection from hot and cold weather	3	1.47
Unrelated answer / I don't know	17	8.37
Psychological care	1	0.49
Take care from unhealthy person	1	0.49
Giving corona test and advice by wearing mask	8	3.94

The most common health problems among the studied adolescents were respiratory problems (21.18%), psychological problems (11.33%), digestive metabolism problems (8.37%), low iron or vitamins (5.41%), addiction to the internet, mobile, smoking, and hookah (3.94%), eye problems (3.94%), and skin problems (3.44%) (See Table 4).

Table 4: Common adolescents’ health problems from study sample perspective

Health problem	Frequency (N)	Percentage (%)
Addiction to internet / mobile / smoking / hookah	8	3.94
Psychological (depression, anxiety, fear/no mood)	23	11.33
Little sleep	5	2.46
No or unrelated answer	16	7.88
I don’t know	45	22.16
Respiratory (The flu / Asthma / cold)	43	21.18
Digestive metabolism (diarrhea / stomachache / diabetes / obesity)	17	8.37
Nervous system (headache / paralysis)	7	3.44
Low iron and vitamins	11	5.41
Eye (binocular vision problems)	8	3.94
Kidney pain	3	1.47
Teath caries	3	1.47
Skin (acne, other)	7	3.44
COVID-19	4	1.97

According to the results, the adolescents believed that they needed their parents/family (16.25%), the society (4.92%), clean and calm environment (3.49), physicians and experts (3.44%), and health advice (3.44%) to protect their health (See Table 5).

Table 5: Health protection requirements

Responses	Frequency (N)	Percentage (%)
Parents/family	33	16.25
Physicians/expert	7	3.44
Money	6	2.95
Society	10	4.92
Health authorities for providing care	7	3.44
Clean and calm environment	8	3.94
Health advice	7	3.44
Healthy food	3	1.47

According to the results, the adolescents believed they could increase their health knowledge through school (13.76%), training courses (12.8%), the internet (11.33%), social media (7.88%), TV (5.91%), health advice (4.92%), health care provider (3.44%), and parents (1.97%) (See Table 6).

Table 6: Methods of increasing health knowledge

Responses	Frequency (N)	Percentage (%)
Social media	16	7.88
Internet	23	11.33
Health care provider	7	3.44
TV/video	12	5.91
Training course	26	12.8
Health advice	10	4.92
School	28	13.79
All ways	6	2.95
Parents	4	1.97
Other (study health profession)	2	0.98

According to the results, a significant association was found between the adolescents age and their teacher (p=0.003). Their residency had significant associations with their friends (p=0.032), teachers (p=0.015), and book (p=0.005). Their gender had significant associations with their books

(p=0;010) and the internet (p=0.035). Their economic status was significantly correlated with their parents (p<0.001) and the internet (p=0.024) (See Table 7).

Table 7: The association between the participants’ demographics data and their source of information about health protection

Responses	Age	Residency	Mother’s education	Father’s education	Birth order	Gender	Economic status
Parents	0.970	0.799	0.471	0.236	0.923	0.127	<0.001*
Friends	0.158	0.032*	0.532	0.354	0.575	0.822	0.907
Teachers	0.003*	0.015*	0.185	0.824	0.029	0.212	0.777
Books	0.372	0.005*	0.295	0.446	0.970	0.010*	0.382
Internet	0.493	0.915	0.240	0.635	0.176	0.035*	0.024*
Social media	0.399	0.084	0.201	0.973	0.462	0.851	0.879

The results revealed that there was a significant association between the participants’ residency and their sleeping (p=0.002). Their mothers’ education was found to have a significant association with their exercise (p=0.004). There was a significant association between their fathers’ education and going to clinic (p=0.049). Their birth order was significantly correlated with their exercise (p=0.035), their sleeping (p=0.036), their rest (p=0.042), and their working (p=0.024). Their economic status was significantly correlated with their rest (p=0.001) (See Table 8).

Table 8: The association between the adolescents’ demographic data and effective factors on health

Responses	Age	Residency	Mother’s education	Father’s education	Birth order	Gender	Economic status
Nutrition	0.775	0.853	0.231	0.432	0.218	0.514	0.370
Exercise	0.789	0.050	0.004*	0.391	0.035*	0.421	0.635
Sleeping	0.596	0.002*	0.041	0.066	0.036*	0.292	0.447
Rest	0.940	0.651	0.065	0.449	0.042*	0.693	0.001*
Going to clinic	0.979	0.815	0.654	0.049*	0.620	0.968	0.088
Working	0.957	0.721	0.886	0.195	0.024*	0.983	0.348
I don’t know	0.805	0.781	0.024*	0.647	0.223	0.334	0.005*

DISCUSSION

In this study, the focus was on adolescents’ understanding of health in the Kurdistan region of Iraq. More than half of the participants were between 14-19 years and the rest of them were 10-13 years old. More than two-thirds of them lived in the city and less than 2% of them lived alone. Moreover, the results of the present study revealed that nearly half of the parents have visited institutes and universities. In a similar study, Mikkonen et al (2020) reported that high education of parents protected adolescents against the negative effect on their understanding of health and also the negative influence of mental disorders on completing their secondary education. They also pointed out that adolescent health problems and parental education are strong but chiefly independent predictors of educational attainment [21].

Based on the results of the present study, it was observed that 44.8% of the participants had a good economic status, and 44.3% a fair status. In a similar study by Poulain et al (2019), it was reported that there were very weak correlations between health problems and socioeconomic factors, which can be attributed to the fact that their participants’ socioeconomic status was good in general [22]. In another study by Boelens et al (2020), it was remarked that the differences between population groups are possibly due to families’ way of functioning, in the internal and external pattern of

communication, in the general emotional climate and in the degree of social integration in the society [23]. Our results revealed that nearly 90% of the adolescents felt healthy, and almost all of the participants stated that their parents took care of their health. Also, nearly three-fourths of them stated that they paid very much attention to their health. Moreover, less than one-third of the participants stated that their health was given importance by the society. In this regard, recent studies have indicated that the origin of the adolescents' health problems are primarily behavioral and environmental, dominated by mental disorders, inadequate physical activity, risky eating behavior, problems associated with risky sexual behavior, substance (including tobacco and alcohol) use and abuse, motor vehicle crashes, and interpersonal violence. Moreover, there is a significant association between the adolescents' overall health status and the society's health plan [24,25].

Our results showed that there was no difference between girls and boys in terms of their attention to their health. So, gender had no effect on the adolescents' health status. In contrast with our results, Greene et al (2020) pointed out that the implications of gender norms adopted in adolescence extend well beyond reproductive health and are reflected in the different health trajectories of boys and girls. For boys, injuries and injury deaths from homicide and accidents rise sharply across adolescence [26]. In this regard, it is also reported that from mid-adolescence onward, boys die at higher rates than girls, while girls and women generally have higher levels of health-related disability and lower subjective well-being [27]. These differences between boys and girls in terms of premature death, disease burden, and health risk vary across time and by place and to a large extent reflect the prevalent gender norms. Prevention programs for girls should focus on gender norms emphasizing girls' sexual and reproductive capacity at the expense of capabilities, agency, and education [28].

Nearly 90% of the participants stated that their health was protected and advised by their parents. The internet, teachers, books, and friends are other influential factors in this regard. Regarding the impact of the internet on the adolescents' health, Lahti et al (2021) reported significant associations between internet use and negative health outcomes in adolescence, such as lower sleep quality and psychosomatic complaints (including depressive symptoms and anxiety) [29]. The results of another study by Cassidy-Bushrow et al (2015) indicated that frequent internet use is correlated with social isolation, addiction, and anxiety which are all associated with high blood pressure in adults [30].

Over one-third of the participants stated that their health was protected and advised by their teachers. In their similar study, Guo et al (2019) reported that teachers provide adolescents with the mental health improving support. Furthermore, teachers can also make a great contribution to enhancing adolescent goal planning, affect control, and help-seeking behavior, and decreasing depression [31].

Our results revealed that nutrition, exercise, sleeping, rest, clinics and health care providers, and working had the strongest effect on the participants' health, respectively. In line with this finding, Oddo et al (2022) reported that long-term consequences, including obesity, hyperlipidemia, osteoporosis, loss of final adult height, and delayed sexual maturation can be resulted due to nutritional deficiencies established during adolescence [32]. In a similar study by Bruce et al (2017), it was reported that maintaining health and wellbeing of both adolescents and adults is highly dependent on sleep. They also pointed out that problems can be identified and managed before longer-term consequences develop by evaluating sleep in routine clinical practice [33].

Over one-fifth of the participants had respiratory problems, less than 12% had psychological problems, digestive metabolism problems, low iron or vitamins, addiction to the internet, mobile, smoking, and hookah, eye problems, and skin problems were reported in less than 10% of the

participants. In a similar study by Fitzpatrick et al (2019), it was reported that 15% of the sample had never tried hookah smoking and 60% had never tried cigarette smoking. Based on their findings, younger people are more likely to smoke hookah because smoking hookah has a stronger perceived social acceptability [36].

In our study, the adolescents believed that family, society, environment, availability of physicians and experts, and health advice are the most crucial factors which affect their health status. In a similar study, Lee et al (2016) stated that the adolescents' health needs should be addressed by building an effective global workforce of highly-skilled adolescent health professionals who understand the unique environmental, social, behavioral, psychological, and biological factors influencing the health of this group of individuals [37].

Based on the results of this study, the adolescents believed that school, training courses, the internet, and social media are among the most crucial factors for improving their health knowledge. In line with this finding, Hausmann et al (2017) reported that social media helps adolescents and young adults improve their health knowledge [38].

Our results also showed a significant association between the adolescents' economic status and the internet. Moreover, there was a significant association between the education of the adolescents' mothers and their exercise. In line with this finding, Lisinskiene et al (2019) indicated that parents' education, especially that of mothers, plays a significant role in maximizing adolescents' physical activity [39]. Another similar study by Mutz et al (2017) revealed that the family's socioeconomic status, parental support for the child's sports activities, parents' own sport activities, and the parents' belief in sports capacities to foster personality development, character building, and social integration significantly predict the health status of their adolescents [40].

STRENGTHS AND LIMITATION OF THE STUDY

Conclusion

The majority of the adolescent had moderate to good health awareness regarding adolescent health-related issues. On the other hand, educational institutions and families were playing a great role in creating awareness and/or removing misconceptions about adolescent health-related issues. Moreover, parents and teachers play a significant role in raising the adolescents' awareness of health-related issues. Furthermore, it was recommended that families, parents, and institutions should adopt more effective and efficient measures to increase the adolescents' awareness of their health.

Authors' Contribution

Conceptualization, HOS.; data curation, HOS, and HTAB; formal analysis, HTAB. and HOS; funding acquisition, HOS; investigation, HOS; methodology, HOS. and HS, HTAB.; project administration, HOS.; resources, HOS, HTAB, GHA and HS; software, HOS and HTAB.; supervision, HOS; validation, HOS, HTAB, HMA, and GHA; visualization, HOS and HTAB; writing—original draft, HOS, HTAB, HMA, and HS; writing—review and editing, HOS, HTAB, GHA, HMA, and HS All authors have read and agreed to the published version of the manuscript.

Ethical considerations

The ethical considerations were taken into account by obtaining a formal administrative approval Hawler Medical Technical Institute, Polytechnic University. Moreover, informed consent was retrieved from the participants or their parents.

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