

# Assessment of healthcare access barriers: A household survey in Ramadi city, Western Iraq, with implications for oncology care

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**ABSTRACT** **Background:** Many studies have emphasized the importance of accessing health care as a vital matter for planning and customizing health resources. This study aims to predict factors to access healthcare facilities by comparing the use of public and private healthcare sectors.

**Methods:** A cross-sectional study was conducted to survey head of household from 1<sup>st</sup> to 28<sup>th</sup> February 2022 in Ramadi city, Anbar province, Iraq. Data of 392 households were collected using semi-structured questionnaire through face-to-face interview. A multistage sampling technique was used to reach the target population. Univariate, bivariate, and multiple logistic regression were recruited to analyze the data and to predict variables. The statistically significant is considered at less than 0.05.

**Results:** The mean age of respondents was 42.03 ( $\pm$  11.36) years (range: 25 to 64 years). Most of respondents were females (51.8%), marries (61.7%), Out of total surveyed people, 52.8% were young (less than 44 years), male-headed families (59.6%), low educated level (65.5%), unemployed (50.8%), %, less than bachelor (55.4%), and earning monthly income of USD 400 and above (58.4%). More than sixty percent (62.5%) had frequently attended private healthcare institutions, however, 75.5% self-ranked health as good. Result of logistic regressions showed that the head of household who aged 45 years and more (POR=3.738, 95% CI: 1.746 to 8.004), married (POR=3.419, 95% CI: 1.724 to 6.781), monthly income is USD 400 and more (POR=3.240, 95% CI: 1.566 to 6.703), family of less than 7 members (POR=3.092, 95% CI: 1.553-6.159), did not exposed to internal displacement (POR=8.317, 95% CI: 4.023 to 17.192), employed (POR=7.727, 95% CI: 3.687 to 16.197), contracted COVID-19 infection (POR=5.938, 95% CI: 2.692 to 13.097), and had bachelor degree and above (POR=4.836, 95% CI: 2.316 to 10.099), are significantly associated with attending private healthcare sectors.

**Conclusion:** The levels of income and employment variables have impact on the accessibility and utilization of healthcare services in public and private health sectors.

**Keywords:** Healthcare accessibility; Equity; Household survey; Public and private health sectors; Anbar city; Iraq; Oncology care

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## INTRODUCTION

Among the basic and recognized human rights is the ability to access health care [1]. It has been ranked as one of the dependable standards for measuring health system performance [2]. Unfortunately, it is not possible for about four hundred million individuals worldwide to access the required healthcare services. In addition, among every five persons worldwide one individual forced to live in areas suffering from humanitarian crises [3]. The concept of access to healthcare was defined as the opportunity to attend the proper and available healthcare when we need it [1,4]. Many factors such as transportation, waiting time, the demographic, and socio-economic are an expressive image figuring the access to healthcare services [5]. Equality in health indicates equality between members of society in accessing and benefiting from good healthcare without distinguishing on the basis of sex, race or religion. There is no doubt that reducing inequality in accessing healthcare represents the most prominent goals of health reform in most countries worldwide. Therefore, all countries, especially low income, aspire to improve healthcare access as a strategic goal to achieve the goals set by the United Nations in the Millennium development goals [6]. In the profile of Iraq, after a period of remarkable development at the level of quality and access of healthcare during the 1970's and early eighties of the last century, the health system exposed to unexpected failure in performance [7]. Successive wars from 1980 and until now coupled with the economic sanction imposed in the early 1990's, affected the sustainability of the health system to provide proper healthcare services. Nevertheless, the US-led invasion of Iraq in 2003 was the most severe, because it caused the destruction of the infrastructure, the spread of corruption and the disabling the reform of the health system [8]. Moreover, the 2003 US-led invasion of Iraq paved the way toward a dangerous deterioration in the security and service situation, the outbreak of ethnic and sectarian conflicts, and the ISIS-led invasion of about half of Iraq in mid-2014 [9]. Many health institutions have become out of service due to unjustified attacks. Human resources for health have been violent, migrate and leave work [10]. Thousands of Iraqi families have been displaced. The rate of access to healthcare has sharply declined between 2014-2017. The efforts made to alleviate the suffering of the displaced families were very modest compared to the tragedy that the population lived [11]. The appearance of the Corona virus in the end of 2019, adding a burden to the already exhausted health care system. This study aims to define barriers that affect access to health care on the basis of the difference between the public and private health sector.

## MATERIALS AND METHODS

### Study design

A cross-sectional study was designed to collect data from Iraqi people residents in Al-Tameem neighborhood in the city-center of Ramadi, Anbar province. A semi-structured household-based survey was recruited to interview (face-to-face) the target population from 1<sup>st</sup> to 28<sup>th</sup> February 2022.

### The sampling method

In terms of administrative aspects Ramadi city subdivided into sixteen neighborhoods. The multistage sampling technique was recruited to randomly select one neighborhood. Then on average 2-4 quarters were elected and from each elected quarter 6-10 blocks were appointed. Then from each appointed block at least 1-2 heads of households have undergone to interview.

A team of trained interviewers has conducted the eligible heads of houses on the weekend days to explain the objectives and conditions of the survey. Respondents are also allowed to choose the place and the proper date for the interview. "The interviewers make assurance that each respondent has the chance (freedom) to participate or withdraw. The participants' information and opinions were anonymous, confidential and used for purpose of research". The supervision of study was assured during all stages. Out of 420 visited households, 392 signed the consent and agreed on the interview.

### Inclusion and exclusion criteria

In this study, Iraq households, aged 18 years and above, both genders, agreed to participate were included. However, the known cases of mental health disorder, unwilling to participate, incomplete data, family members other than the household were excluded from the study.

### Sample size

The sample size calculator arrived at 377 participants, using a margin of error of  $\pm 5\%$ , a confidence level of 95%, and a 50% response distribution [12].

$$N=(Za^2 \times P \times Q)/(M.E.)^2$$

$$\text{So, } n =(1.96)^2 \times (0.50) \times (0.50)/(0.05)^2$$

Non-response correction=10%. Thus, the total sample size was  $(377+38)=415$ . After excluding 23 incomplete documents, the sample was 392 for final analysis.

### Study instrument

A semi-structured household-based questionnaire used to collect the data. The questionnaire was prepared in English language and then translated into Arabic language (local native). The Cronbach alpha was 70.2 indicating good reliability of questionnaire. The content validity was confirmed. Twenty households (not included in the study) were used to test pilot the questionnaire. The questionnaire composed of two parts. The first part included the sociodemographic and economic factors. The second part included nine-items accessibility questionnaire. A consent form was in the first page that must be signed before allowing the head of household to engage in the survey.

### Dependent variable

The dependent variable was the intention of head of household to attend "public" or "private" healthcare institutions.

### Independent variables

Most of the sociodemographic and economic variables have undergone to categorization. The age of respondents was captured as binary as either "zero" for those aged less than 45 years, and "one" for respondents aged 45 years and more. Marital status was coded "zero" for single (unmarried, widows, divorced), and "one" for married people. The respondent who had married to closely related person (second cousins or closer) was considered as consanguineous marriage and coded "zero"; otherwise, coded "one". The code "zero" was assigned to the big families of seven members and more (including the parents, grandparents), while code "one" was given to the families of less than seven members. The education level was considered low and coded "zero" for those having less than bachelor degree, while those having bachelor and above coded "one" and considered high educated. Respondent who had engaged in a regular work with monthly salary (public or private sectors) considered as employed and coded "one", while those who had no regular work, retired, students and housewives were considered as unemployed and coded "zero". Based on the exchange rate of Iraqi Dinar (IQD) to United States Dollar (USD) on 1<sup>st</sup> May 2022 (USD 1=IQD 1470), the monthly income (including all incentives and bounces) was coded "zero" for respondents who earned less than USD 400 (IQD 600,000) and coded "one" for those earned USD 400 and more. The head of household was asked to rank their health status on a scale ranged from very bad to very good health. The responses were categorized into "poor health" and coded "zero", and "good health" and coded "one". The chronic disease was defined if any respondent presented with history of "last one year" requiring to medical attention or had limitation in the daily life activities or both. The chronic disease could be "cancer, diabetes, high blood pressure, cardiovascular diseases, etc." The code "one" assigned to respondent with at least on chronic disease and code "zero" assigned to those had no chronic disease. Smoking of tobacco, hookah, electronic cigarette, etc." coded "one" and "one" assigned to those who did not smoke.

### Statistical analysis

The Kolmogorov–Smirnov test used to test for normal distribution. Frequencies and percentages were recruited to analyze the categorical variables, while, the *chi-square* test was used to analyze the categorized variables in the bivariate analyses. An independent-sample t-test was run to recruited to identify the difference in means between households who were actively attending the public or private healthcare institutions. The IBM SPSS version 16 was used to analyze the data, and only the variables with a p-value of less than 0.05 entered to multivariate analysis. The Prevalence Odds Ratio (POR) and Confidence Intervals (CIs) were recruited to explore the factors that predict the head of household's trend of attending healthcare institutions in multiple logistic regression. The statistically significant is considered at less than 0.05.

## RESULTS

### Descriptive and general characteristics of households

Three hundred and ninety-two households have been included in the final analysis. Mean age ( $\pm$ SD) was 42.03 years ( $\pm$ 11.36), and the age ranged from 25 to 64 years old. More than half of households were married (61.7%), females (51.8%), unemployed (50.8%), less than bachelor (55.4%), monthly income of USD 400 and above (58.4%), history of consanguineous marriage (42.9%), internally displaced (47.7%) and headed families of less than seven members (51.5%). Most of respondents self-ranked health as good

(75.5%), and regularly attending private healthcare institutions (62.5%). About two-third (64.0%) of respondents declared that

they contracted COVID-19 infection, history of cigarette smoking (36.2%), and chronic diseases (39.5%) (Table 1).

<b>Tab. 1:</b> Households' sociodemographic and general characteristics (n=392).	<b>Variables</b>	<b>Categories</b>	<b>N (%)</b>
	Age	Mean (SD): 42.03 (11.36)25-64	
	Age	<45	227 (57.9)
		≥45	165 (42.1)
	Gender	Male	189 (48.2)
		Female	203 (51.8)
	Marital status	Single	150 (38.3)
		Married	242 (61.7)
	Family members	7 and more	190 (48.5)
		<7	202 (51.5)
	Education	<Bachelor	217 (55.4)
		Bachelor and above	175 (44.6)
	Employment	Unemployed (retired, housewives)	199 (50.8)
		Employed	193 (49.2)
	Income level	USD<400	163 (41.6)
		USD400 and above	229 (58.4)
	Displacement	Yes	187 (47.7)
		No	205 (52.3)
	Consanguineous marriage	No	224 (57.1)
		Yes	168 (42.9)
	Self-ranked health	Poor health	96 (24.5)
		Good health	296 (75.5)
	Attended healthcare institution	Public (Government)	147 (37.5)
		Private	245 (62.5)
	COVID-19 infection	No	251 (64.0)
		Yes	141 (36.0)
	Smoking	Yes	142 (36.2)
		No	250 (63.8)
	Chronic diseases	Yes	155 (39.5)
		No	237 (60.5)

An independent-sample t-test was run to determine if there were differences in overall accessibility between households who were actively attending the public or private healthcare institutions. Inspection of a boxplot indicated no outliers in the data. Moreover, the Kolmogorov-Smirnov test ( $p>0.05$ ) showed that the overall accessibility scores were normally distributed. The overall accessibility was more among households who were actively

attending the private healthcare institution ( $m=35.24$ ,  $SD=3.36$ ) than households who were actively attending the public healthcare institutions ( $m=31.90$ ,  $SD=3.11$ ), a statistically significant difference ( $m=3.34$ , 95% CI (2.67, 3.99),  $t(326.299)=9.966$ ,  $p<0.001$ ). About two-third of households (245, 62.5%) were actively attending private healthcare institutions compared to (147, 37.5%) who attend the public healthcare institutions (Table 2).

<b>Tab. 2.</b> Household's opinions on accessibility to healthcare institutions (n=392).	<b>Statements</b>	<b>SD</b>	<b>D</b>	<b>NA</b>	<b>A</b>	<b>SA</b>
	In an emergency, it's very hard to get medical care quickly	22 (5.6)	28 (7.1)	25 (6.4)	173 (44.1)	144 (36.7)
	Doctor not responsive to concerns	24 (6.1)	17 (4.3)	24 (6.1)	139 (35.5)	188 (48.0)
	Fear of medical bills	8 (2.0)	32 (8.2)	27 (6.9)	205 (52.3)	120 (30.6)
	Transportation difficulty	15 (3.8)	32 (8.2)	110 (28.1)	164 (41.8)	71 (18.1)
	Office hours when you can get medical care is good for most people	12 (3.1)	20 (5.1)	42 (10.7)	252 (64.3)	66 (16.8)
	Fear of discovery of serious illness	18 (4.6)	24 (6.1)	62 (15.8)	198 (50.5)	90 (23.0)
	Fear of unneeded tests	34 (8.7)	45 (11.5)	46 (11.7)	149 (38.0)	118 (30.1)
	Lack of specialists and shortage of doctors	46 (11.7)	106 (27.0)	142 (36.2)	46 (11.7)	52 (13.3)
	People are usually kept waiting a long time when they are at the doctor's office	24 (6.1)	34 (8.7)	47 (12.0)	114 (29.1)	173 (44.1)

**Factors associated with attending healthcare institutions in bivariate analysis**

Cross tabulation indicated that households who were aged 45 years old or more, (*Chi square* test ( $\chi^2=23.37$ ,  $p<0.001$ ), being married ( $\chi^2=43.57$ ,  $p<0.001$ ), less than seven members ( $\chi^2=28.90$ ,  $p=0.001$ ), highly educated (bachelor and above) ( $\chi^2=38.65$ ,  $p<0.001$ ),

employed ( $\chi^2=30.29$ ,  $p<0.001$ ), monthly income of USD400 and above ( $\chi^2=11.29$ ,  $p<0.001$ ), did not exposed to displacement ( $\chi^2=69.37$ ,  $p<0.001$ ), contract COVID-19 infection ( $\chi^2=26.94$ ,  $p<0.001$ ), and none-smokers ( $\chi^2=4.95$ ,  $p=0.026$ ) were significantly associated with the attending private healthcare institutions (Table 3).

<b>Tab. 3.</b> Bivariate analysis of predictors in attending healthcare institutions.	<b>Variables</b>	<b>Categories</b>	<b>N (%)</b>	<b>Public</b>	<b>Private</b>	<b><math>\chi^2</math></b>	<b>p-value</b>
	Age	<45	227 (57.9)	108 (47.6)	119 (52.4)	23.37	<0.001
		≥45	165 (42.1)	39 (23.6)	126 (76.4)		
	Gender	Male	189 (48.2)	79 (41.8)	110 (58.2)	1.88	0.09
		Female	203 (51.8)	68 (33.5)	135 (66.5)		
	Marital status	Single	150 (38.3)	87 (58.0)	63 (42.0)	43.57	<0.001
		Married	242 (61.7)	60 (24.8)	182 (75.2)		
	Family members	7 and more	190 (48.5)	97 (51.1)	93 (48.9)	28.9	<0.001
		<7	202 (51.5)	50 (24.8)	152 (75.2)		
	Education	<Bachelor	217 (54.4)	111 (51.2)	106 (48.8)	38.65	<0.001
		Bachelor and above	175 (44.6)	36 (20.6)	139 (79.4)		
	Employment	Unemployed (retired, housewives)	199 (50.8)	101 (50.8)	98 (49.2)	30.29	<0.001
		Employed	193 (49.2)	46 (23.8)	147 (76.2)		
	Income level	USD<400	163 (41.6)	77 (47.2)	86 (52.8)	11.29	<0.001
		USD 400 and above	229 (58.4)	70 (30.6)	159 (69.4)		

Displacement	Yes	187 (47.7)	110 (58.8)	77 (41.2)	69.37	<0.001
	No	205 (52.3)	37 (18.0)	168 (82.0)		
Consanguineous marriage	No	224 (57.1)	91 (40.6)	133 (59.4)	2.18	0.14
	Yes	168 (42.9)	56 (33.3)	112 (66.7)		
Self-ranked health	Poor health	96 (24.5)	32 (33.3)	64 (66.7)	0.94	0.332
	Good health	296 (75.5)	115 (38.9)	181 (61.1)		
COVID-19 infection	No	251 (64.0)	118 (47.0)	133 (53.0)	26.94	<0.001
	Yes	141 (36.0)	29 (20.6)	112 (79.4)		
Smoking	Yes	142 (36.2)	43 (30.3)	99 (69.7)	4.95	0.026
	No	250 (63.8)	104 (41.6)	146 (58.4)		
Chronic diseases	Yes	155 (39.5)	60 (38.7)	95 (61.3)	0.16	0.689
	No	237 (60.5)	87 (36.7)	150 (63.3)		

### Factors associated with attending healthcare institutions in multiple logistic regression

Table 4 reports the final model of the multiple logistic regressions. The overall accessibility (Prevalence Odds Ratio (POR)=1.401, 95% CI: 1.255 to 1.564) was associated significantly with attending private healthcare institutions ( $p<0.05$ ). The household who aged 45 years and more (POR=3.738, 95% CI: 1.746 to 8.004), married (POR=3.419, 95% CI: 1.724 to 6.781), monthly income is USD 400 and more (POR=3.240, 95% CI: 1.566 to 6.703),

and headed family of less than 7 members (POR=3.092, 95% CI: 1.553-6.159) had the lowest odds ratios. While the household who did not exposed displacement (POR=8.317, 95% CI: 4.023 to 17.192), employed (OR=7.727, 95% CI: 3.687 to 16.197), contract COVID-19 infection (POR=5.938, 95% CI: 2.692 to 13.-097), and had bachelor degree and above (POR=4.836, 95% CI: 2.316 to 10.099) had the highest odds ratios. The Hosmer and Lemeshow test indicated a good fit ( $p=0.386$ ). The total model was significant ( $p=0.001$ ) and accounted for 70.8% of variance (Nagelkerke R square=0.708).

<b>Tab. 4.</b> Factors associated with attending healthcare institutions in multiple logistic regression.	<b>Variables</b>	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>Sig.</b>	<b>Exp(B)</b>	<b>95.0% C.I. for Exp(B) Lower-Upper</b>
	Accessibility	0.337	0.056	35.948	<0.001	1.401	1.255-1.564
	45 years and more	1.319	0.388	11.524	0.001	3.738	1.746-8.004
	Less than 45 years					Reference	
	Married	1.229	0.349	12.382	<0.001	3.419	1.724-6.781
	Single (unmarried, widows, divorced)					Reference	
	Monthly income is USD 400 and more	1.176	0.371	10.044	0.002	3.240	1.566-6.703
	Monthly income is >USD 400					Reference	
	Employed	2.045	0.378	29.325	<0.001	7.727	3.687-16.197
	Unemployed (No job, retired, housewife)					Reference	
	Contracted COVID-19 infection	1.781	0.404	19.479	<0.001	5.938	2.692-13.-097
	Not contracted COVID-19 infection					Reference	
	Family has less than 7 members	1.129	0.352	10.315	0.001	3.092	1.553-6.159
	Family has 7 members and more					Reference	
	High educated bachelor and above	1.576	0.376	17.600	<0.001	4.836	2.316-10.099

Low education-less than bachelor					Reference	
Did not exposed displacement	2.118	0.370	32.689	<0.001	8.317	4.023-17.192
Exposed to displacement						
Constant	6.329	0.131	38.694	<0.001	0.000	-

## DISCUSSION

In best of researchers’ knowledge, it is the first household survey discussing the accessibility of healthcare institutions in light of attending the public and private sectors. Most of those who have been questioned (62.5%) have expressed the desire to attend the private health institutions. The access rate (odds ratio) was 1.40 times in favor of the private sector compared to the public sector. Unlike to findings reported by Awoke et al., [13] among Ghanaian patients. The authors found that more than half of (51.7%) of surveyed patients used a public health sector, compared to 17.8% used a private health sector, and 30.5% attended other healthcare facilities. It is not a surprise that Iraqis prefer private sector over the government for treatment. Unfortunately, the level of services provided in government health institutions declined sharply at the level of performance and quality. Most of these institutions lack infrastructure, efficient human resources for health, and modern technology necessary to diagnose and treat patients [14,15]. In contrast, the private sector witnessed a remarkable prosperity at the expense of the government side, but it did not meet the increasing demand on healthcare due to increased number of populations, repeated crises, and the failure of most strategic policies to reform the general health system. Alhusseiny et al., [16] reported that the private clinic changed to be COVID-19 clinic during the outbreak of pandemic.

Results of multiple logistic regression showed that the household aged 45 years and more, married, monthly income is USD 400 and more, and headed family of less than 7 members, did not exposed displacement, employed, did not contract COVID-19 infection, and had bachelor degree and above were significantly associated with attending the private health sector. The Nagelkerke R square was 0.708 indicating that our result explained 70.8% of variance. Most of the predict variables were interconnected. With respect to other demographic factors, the stability of economic and security situations had impact on the choices of head of household. In other words, the luxury enhances the options of the head of the household towards the private health sector. Rana et al., [17] studied the impact of socioeconomic, demographic, and lifestyle factors on the selection of private or public healthcare in Australia.

The authors found that despite of private health insurance, the probability of choosing public healthcare sector was higher among the young age group, lower incomes, lower levels of education, specialist doctor visitors. Similarly, Awoke et al., found that “the older age group, higher education, and higher wealth” were significantly associated with the use of private health sector. Regarding the findings from Ghana and Australia, the health

insurance has a direct impact on the decision to use public or private health facilities. The presence of private health insurance facilitated the use of the private sector among the Australian patients, while the health insurance pushed the Ghanaian patients to use public health facilities. In Iraq, health insurance has not yet been adopted in the general health system. Therefore, in contrast to above-mentioned finding from Ghana and Australia, our findings lacked an important confounding variable (health insurance) might be determining the patients’ choices. Some factors such as displacement and the number of family members and employment have determined the choices of head of the household when seeking healthcare facilities. Previous studies [9,11] conducted in Iraq found that because of ID, there was no medical treatment for 31.0% of displaced people and the rate of access to public health services come down to 21.6%. Moreover, big families (7 or more members), and residing in a renting house were significantly contributed to an economic burden. Nguyen, and Giang [18] studied the factors affecting the Vietnamese’s choices of healthcare facilities. The authors found that the necessity to pay with the availability of sufficient income were the predictive factors for using private healthcare facilities. This study has some limitations. First, the lack of national pricing of healthcare services and pharmacy makes it hard to estimate the cost of healthcare. Therefore, the patient’s decision is subject to change based on the flexibility in the healthcare price according to the supply and demand for health care. Second, the choice of the patient between public and private care is negatively and positively affected by the proximity of the healthcare center and the expectation of quality of the service provided. This study did not address the interpretation of these topics. Third, the researchers were unable to know the type of patient, the diagnosis of the disease or visiting the doctor. Therefore, this study does not examine the possibility of affecting the type of disease on the patient’s decision to choose the type of health service.

## CONCLUSION

In light of difference between the public and private health sectors, we tried to explore the factors affecting the accessibility of healthcare among head of households in Anbar city. Finding of this study showed increased tendency to attend the private healthcare institution among 62.5% of heads of households. The barriers influencing the choice of private health sector were accessibility, age (>45 yeas), married, monthly income is USD 400 and more, family members (<7 members), did not exposed to ID, employed, contract COVID-19 infection, and highly educated (bachelor degree and above) were significantly associated with choosing the private health sector.

## REFERENCES

1. Saurman E. Improving access: Modifying Penchansky and Thomas's theory of access. *J Health Serv Res Policy*. 2016; 21:36-39.
2. Levesque JF, Harris MF, Russell G. Patient-centred access to health care: Conceptualising access at the interface of health systems and populations. *Int J Equity Health*. 2013; 12:1-9.
3. World Health Organization. Expanding access to health services with selfcare interventions. WHO. 2019.
4. Nunez A, Chi C. Investigating public values in health care priority—Chileans' preference for national health care. *BMC Public Health*. 2021; 21:1-2.
5. Jadoo SA, Puteh SE, Ahmed Z, Jawdat A. Level of patients' satisfaction toward national health insurance in Istanbul city (Turkey). *World App Sci J*. 2012; 17:976-985.
6. Eide AH, Mannan H, Khogali M, Van Rooy G, Swartz L, et al. Perceived barriers for accessing health services among individuals with disability in four African countries. *PLoS One*. 2015; 10:e0125915.
7. Cetorelli V, Shabila NP. Expansion of health facilities in Iraq a decade after the US-led invasion, 2003–2012. *Confl Health*. 2014; 8:1-7.
8. Jadoo SA, Alhusseiny AH, Yaseen SM, Al-Samarrai MA, Mahmood AS. Evaluation of health system in Iraq from people's point of view: a comparative study of two different eras. *JIDHealth*. 2021; 4:380-388. [Google Scholar]
9. Al-Samarrai MAM, AL-Any BN, Al-Delaimy AK, Yahyaa BT, Ali Jadoo SA. Impact of internal displacement on psychosocial and health status of students residing in the hostel of Anbar University, Iraq. *J Ideas Health*. 2020; 3:140-144.
10. Ali Jadoo SA, Aljunid SM, Dastan I, Tawfeeq RS, Mustafa MA, et al. Job satisfaction and turnover intention among Iraqi doctors—a descriptive cross-sectional multicentre study. *Hum. Resour Health*. 2015; 13:1-11.
11. Jadoo SA, Sarhan YT, Al-Samarrai MA, Al-Taha MA, AL-Any BN, et al. The impact of displacement on the social, economic and health situation on a sample of internally displaced families in Anbar Province, Iraq. *J Ideas Health*. 2019; 2:56-59.
12. Oraibi O, Ghalibi AT, Shami MO, Khawaji MJ, Madkhali KA, et al. Adverse childhood experience as a risk factor for developing type 2 diabetes among the Japan population: A cross-sectional study. *Children*. 2023; 10:499.
13. Al-Saiedi A, Maram Haddad M. Physician for human rights, challenges faced by the Iraqi health sector in responding to COVID-19.
14. Al Janabi T, Chung S. Current impact and long-term influence of the COVID-19 pandemic on Iraqi healthcare systems: A case study. *Epidemiol*. 2022; 3:412-443.
15. Alhusseiny AH, Latif II, Jadoo SA. COVID-19 in Iraq: An estimated cost to treat patients at a private clinic. *J Ideas Health*. 2021; 4:304-306.
16. Rana RH, Alam K, Gow J. Selection of private or public hospital care: Examining the care-seeking behaviour of patients with private health insurance. *BMC Health Serv Res*. 2020; 20:380.
17. Awoke MA, Negin J, Moller J, Farell P, Yawson AE, et al. Predictors of public and private healthcare utilization and associated health system responsiveness among older adults in Ghana. *Glob Health Action*. 2017; 10:1301723.
18. Nguyen TA, Giang LT. Factors influencing the Vietnamese older persons in choosing healthcare facilities. *Health Serv Insights*. 2021;14.