

Assessment of Knowledge and Attitude of Health Workers in the Main Primary Health Care Service in the Kurdistan Region of Iraq

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Abstract

Background: Primary health care (PHC) issue is trying to promote the best possible health and well-being for all individuals, regardless of their background, by focusing on the community's needs for sustainable and affordable healthcare.

Objective:

The primary goal of this study is to assess the key elements of primary healthcare services regarding knowledge and attitude of PHC staff in the PHC services centers located in the Kurdistan Region of Iraq.

Methods:

It is a mass cross-sectional observational study including PHC services in the Kurdistan region, Iraq. Sampling is done using multistage sampling that includes simple random sampling, stratified random sampling, and systematic random sampling design. The required PHC (primary health care) data were collected in Sulaimani, Halabja, Erbil, and Duhok governorates. The method of data collection involves visiting all primary healthcare centers and obtaining prior permission from the health directorate in each governorate. Face-to-face interviews with medical

personnel will be conducted, and a standardized checklist will be used to evaluate health service indicators.

Results:

Out of a total of 222 primary healthcare centers in the Kurdistan region, we chose to focus on 68 main primary healthcare centers for this study. In the 68 primary health care invited 311 health staff to participate in the survey. Questionnaires related to their socio-demographic and characteristics of PHCs health staff, as well as their knowledge and attitudes about health services, and self-efficacy. Descriptive analyses and regression models were performed.

Conclusion:

Monitoring a child's growth is a crucial measure for promoting their survival. To improve the effectiveness of current primary healthcare centers, prioritizing laboratory services, and improving the staff's attitudes and practices are essential.

Keywords: Primary health care, knowledge, health Professionals, attitudes

Introduction

Primary care represents the entry-level cornerstone of many health systems which provides accessible person-centered, appropriate, and equitable care from a population-based perspective. Primary care is aimed at preventing disease at an early stage, health promotion across the population, and comprehensive acute and chronic care involving rehabilitative and palliative approaches (Bevan et al., 2019). Half the world lacks access to essential health services, and more than 100 million are still pushed into extreme poverty because of health expenses. According to the latest available data, nearly 500 million people do not receive at least one of seven essential services (WHO, 2015., WHO, 2023). Inadequate basic infrastructure, human resource gaps, poor quality services, and low trust in health practitioners and medical authorities remain barriers to achieving health goals (WHO, 2019).

Nowadays in developed countries, the demands for healthcare services are increasing. However, the burden of disease and many other challenges in this regard are unequally shared across socio-economic groups (WHO, UNICEF, 2018). Primary health care (PHC) has been advanced as a cost-effective way to improve health outcomes in an equitable manner (WHO, UNICEF, 2018). Due to the low concentration of lower and middle-income countries on the quality of healthcare services delivered, they hardly ever achieve an appropriate level of health (W. H. Organization, 2015). High-quality primary health care is crucial to improve the health status of populations. On the other hand, poor quality leads to more diseases and costs, loss of public confidence, loss of

time, and low staff morale, and also results in the wastage of limited resources (Kress et al., 2016). One of the last updated reports of the primary health concept in the primary health care operation framework was ASTANA declaration in 2018. This declaration aimed to strengthen the commitment of countries and international partners to make concerted efforts to orient health systems towards PHC for accelerated progress on universal health coverage and the health-related Sustainable Development Goal (World Health Organization. 2018).

Based on the studies carried out by Kress et al (2016) the strength of a country's primary care system was negatively associated with mortality in Organization for Economic Co-operation and Development (OECD) countries. Moreover, PHC also has improved population health in low- and middle-income countries (Macinko et al., 2009). According to the Alma-Ata declaration, primary healthcare services should be in line with the needs of a particular population (Taha et al, 2021). PHC services mainly involve providing treatment for common illnesses, the management of long-term illnesses such as diabetes and heart disease, and the prevention of future ill-health through advice, immunization, and screening programs (Taha et al, 2021). Moreover, a health system needs staff, funds, information, supplies, transport, communications, and overall guidance and direction to function (WHO, 2015).

The health care system in Iraq is essentially a hospital oriented with little focus on primary care. However, there was no specialty in primary care or family medicine until the recent introduction of the family medicine specialty in Iraq. Moreover, because of the poor functioning of the primary care system in Iraq, including the Kurdistan region, there is a desperate need for re-organizing and restructuring the primary care services (Alwan, 2004). In developing countries, particularly in the Kurdistan region of Iraq, the assessment of the primary health care components was not done till now. Therefore, we believe that assessing our PHC (primary health care) operational framework should be in the priority of the policymakers. However, according to our knowledge their limited report on this area. So, the present study is aimed to assess the primary health care operational framework indicators based on the new standard tools (WHO) as well as human resource knowledge and attitude about these indicators.

Material and methods

Study setting: The research will be conducted in all four governorates of Iraqi Kurdistan (Sulaimani, Halabja, Erbil, and Duhok). The study participants including all PHC (Primary health care) services will be selected in the Kurdistan region, Iraq

Study design: A mass cross-sectional observational study will be used for conducting this study to create a representative sample of Kurdistan's PHC.

Sampling procedures (sample size and sampling methods)

Assessment of indicators:

In this study, we used multistage sampling, (Simple random sampling, stratified random sampling, and Systematic random sampling design) including all PHC in the Kurdistan region, Iraq. The required PHC data were collected in Sulaymaniyah, Halabja, Erbil, and Duhok governorates. The total number of main PHCs in the Kurdistan region was 222. We select 68 main PHC according to the sampling technique, 29 PHC in Sulaymaniyah, 3 PHCs in Halabja governorate, 20 PHC in (Erbil) and 16 PHC in Duhok. The data were collected by visiting all PHC and taking pre-permission from the directorate of health from all governorates. Data collection was done through face-to-face interviews with medical staff and for assessing the health services indicators using a standard checklist.

Study procedures:

Regarding implementing a knowledge and attitude (KA) study on the PHC human resources to evaluate their knowledge, and attitude by the questionnaire. The questionnaire consists of:

1. Socio-demographic characteristics variables such as age, sex, Level of Education, Occupation Position, Years since graduation, Years of the practice of PHC services, and Name of the governorate and District.
2. Knowledge consists of variables such as PHC facility having a system to keep a record of pregnant women, having immunization service available adequately, and PHC having a mental health program, etc.....
3. Attitude variables such as do you think that breast-feeding programs are important and essential in PHC, do you think Health Education - care of baby/maternal program is important to be available at PHC, Can your perform full physical examination for pregnant women, etc.....

Data management and statistical analysis:

Data was collected and coded. The collected data was reviewed and analyzed using the Statistical Package for Social sciences (SPSS version 23). Descriptive statistics such as frequency and percentage were calculated. For categorical variables, Chi-square test was used with a 95% confidence interval to determine significant associations between categorical dependent and independent variables. The p-value was considered significant if it was less than 0.05.

Ethical considerations:

The researcher sought the approval of the Ethics Committee of the University of Sulaimani/College of Medicine and the Ministry of Health for performing the study. This study complies with international Ethical Research Guidelines. Informed consent was obtained from the participants and the information was kept confidential and properly safeguarded.

Results

According to the results, the total number of main PHC services in the Kurdistan Region was 222 we select 68 main PHC services from the total number in the Kurdistan Region. In the Kurdistan region, the PHC services had a range of services available to the public. Based on the survey conducted in the 68 primary health care (PHC) centers, a total of 311 health staff members were invited to participate. Here's a breakdown of the distribution of socio-demographic characteristics and occupations among the participants:

The highest number of participants had an Institute level education, with 138 (44.4%) respondents. This was followed by those with a university education, with 82 (26.4%) respondents. The lowest number of participants were those with a Primary level education, with only 8 (2.6%) respondents, and Postgraduates, with 11 (3.5%) respondents. The majority of the participants in the study were female, with 213 (68.5%) respondents, while 98 (31.5%) were male. In terms of occupation, the largest group was assistant nurses, with 125 (40.2%) respondents. Paramedical staff accounted for 59 (19%) of the participants, while general physicians accounted for 37 (11.9%). Lab staff and dentists made up smaller proportions of the participants, with 30 (9.6%) and 15 (4.8%) respondents respectively. A small proportion of the health staff, 21 (6.8%), worked in administrative roles, while 59 (19%) were medical staff.

Table (1.1) Distribution of Socio-demographic characteristics of primary health care (PHC) services health staff in Kurdistan Region – Iraq

Variables	Number (Frequency)	Percent (%)
Level of education		
Primary	8	2.6
Secondary	72	23.2
Institute	138	44.4
University	82	26.4
Postgraduate	11	3.5
Total	311	100.0
Gender	98	31.5
Male	213	68.5
Female	311	100.0
Total		
Occupation		
Assistance nurse	125	40.2
Manager and administrative	21	6.8
Nurse	4	1.3
Paramedical	59	19.0
Physician	14	4.5
General physician	37	11.9
Preventive health specialist	6	1.9
Lab staff	30	9.6
Dentist	15	4.8
Total	311	100.0
Position		
Health Medical worker	262	84.2
Administration health staff	49	15.8
Total	311	100.0

As indicated in Table 1.2. Among respondents, percentage of health staff more than one-half of 168 (54%) participated in the district and 143 (46.0%) in the Governorate. In terms of their age, 48 (15%) were aged 20-30 years, more than one third 107 (34.4%) were 31-40 years, 93 (29.9%) were 41-50 years, and those aged 51 years and older accounted for 63 (20.3%), 110 (%35.5) of

them which is the majority had graduation years between 11-20 years, 75 (24.1%) were between 21-30 years, 74 (23.8%) were between 1-10 years and 52 (16.7%) of the staff were 31-40 years. The table shows the distribution of years of practice in PHC services for a total of 311 individuals. Here's the breakdown, 51.4% of the total number of practitioners have been practicing in PHC services for 1-10 years (160 out of 311), 31.8% of the total number of practitioners have been practicing in PHC services for 11-20 years (99 out of 311), 11.9% of the total number of practitioners have been practicing in PHCs for 21-30 years (37 out of 311) 4.8% of the total number of practitioners have been practicing in PHC services for 31-40 years (15 out of 311). Overall, we can see that the majority of practitioners (over 80%) have been practicing in PHC services for 20 years or less.

Table (1.2) Distribution of socio-demographic characteristics of primary health care (PHC) staff in Kurdistan Region – Iraq

Variables	Number (Frequency)	Percent (%)
Name of governorates		
provinces	143	46.0
District	168	54.0
Total	311	100.0
Age group		
20-30	48	15.4
31-40	107	34.4
41-50	93	29.9
≥ 51	63	20.3
Total	311	100.0
Years since in graduation		
1-10	74	23.8
11-20	110	35.4
21-30	75	24.1
31-40	52	16.7
Total	311	100.0
Years of practice in PHC		
1-10	160	51.4
11-20	99	31.8
21-30	37	11.9
31-40	15	4.8
Total	311	100.0

Based on the responses given, it appears that the majority of respondents are aware of the presence of certain programs and services in primary health care (PHC) facilities, but there are also some who are not sure or do not know about them. Specifically, a high percentage of respondents know that PHC facilities have a system to keep a record of pregnant women (88.7%) and that immunization services are available (96.8%). Additionally, a significant number of respondents are aware of child growth and development programs (90.4%), school health programs (81.7%), and the importance of promoting healthy lifestyles (60.1%).

However, there are also some areas where knowledge seems to be lacking. For example, less than half of the respondents know about the presence of a program for chronic diseases (52.1%) or for detecting diabetes using a total risk approach (46.9%). Similarly, only 45.3% of respondents are aware of the mental health program in PHC facilities, and even fewer (38.3%) know about the program for controlling communicable diseases. Finally, there are also questions related to the knowledge and skills of healthcare workers, with only 58.5% of respondents indicating that they can perform a full physical examination for pregnant women and 44.4% recognizing the importance of nurses being knowledgeable in managing diet and nutrition. Overall, while there is some level of awareness about certain programs and services in PHC facilities, there is also room for improvement in terms of knowledge and understanding among the general population.

Table (1.3)Frequency of distribution knowledge of primary health care staff

Variables	Yes (%)	No (%)	I don't Know (%)
PHC facilities have a system to keep a record of pregnant women	276 (88.7)	22 (7.1)	13 (4.2)
PHC facility management of pregnant women	249 (80.1)	42 (13.5)	20 (5.4)
Immunization services are present and available in the PHC system adequately	301 (96.8)	5 (1.6)	(5)1.6
Vitamin (A) is available adequately in the PHC system	174 (55.9)	101 (32.5)	36 (11.6)
Child growth and development services are available in PHC system	281 (90.4)	21 (6.8)	9 (2.9)
PHC system have a program for chronic diseases	162 (52.1)	124 (39.9)	25 (8.0)
PHC have a program for detecting diabetes by using a total-	146 (46.9)	139	26

risk approach		(44.7)	(8.4)
It is important for a primary health care system to have nurses knowledgeable in managing diet and nutrition	138 (44.4)	145 (46.6)	28 (9.0)
PHC system has a mental health program	141 (45.3)	150 (48.2)	20 (6.4)
Program control of communicable disease are available in PHC system	119 (38.3)	147 (47.3)	45 (14.5)
School health programs are available in the PHC system	254 (81.7)	39 (12.5)	18 (5.8)
PHC systems have a program to promote a healthy lifestyle	187 (60.1)	109 (35.0)	15 (4.8)
Full physical examination for pregnant women can be carried out	182 (58.5)	101 (32.5)	28 (9.0)

The table shows the distribution of participants in a survey based on different variables and their scores on a knowledge test. The variables included age group, gender, education level, position, years since graduation, years of practice in PHC, and name of province and district. The total number of participants in the survey was 311. The scores on the knowledge test were categorized as bad (≤ 10), good (11-19), and very good (≥ 20). The results show that the majority of participants were in the age group of 31-40 years (34.4%), followed by 20-30 years (15.4%). The highest proportion of participants with very good scores was in the age group of 41-50 years (28.7%), while the highest proportion of participants with bad scores was in the age group of 20-30 years (20.4%).

In terms of gender, the majority of participants were female (68.5%). There was no significant difference in the distribution of scores between males and females ($p = 0.226$). Regarding education level, the highest proportion of participants with very good scores had a secondary education level (34.5%), while the highest proportion of participants with bad scores had a primary education level (3.6%). There was a significant difference in the distribution of scores across education levels ($p < 0.001$). In terms of position, the majority of participants were health medical workers (84.2%). There was no significant difference in the distribution of scores between health medical workers and administrative health staff ($p = 0.217$).

Regarding years since graduation, the highest proportion of participants was in the 11-20 years category (34.7%). There was no significant difference in the distribution of scores across years since graduation ($P = 0.541$). In terms of years of practice in PHC, the highest proportion of participants in the 1-10 years category (51.4%). There was no significant difference in the distribution of scores across years of practice in PHC ($p = 0.221$). Regarding the name of the

province and district, the highest proportion of participants was from the district (54.0%). There was a significant difference in the distribution of scores across provinces and districts ($p < 0.001$). Overall, the results show that there are significant differences in the distribution of scores on the knowledge test across education levels and provinces/districts. However, there were no significant differences in the distribution of scores across other variables, such as gender, position, years since graduation, and years of practice in PHC.

Table (1.4). Relation between socio-demographic characteristics of PHC staff and total score of knowledge

Variables		Total Score Of Knowledge			Total	P-Value
		Bad ≤ 10	Good 11-19	Very Good ≥ 20		
Age Group	20-30	11 (20.4)	13 (11.0)	24 (17.3)	48 (15.4)	0.088
	31-40	12 (22.2)	40 (33.9)	55 (39.6)	107 (34.4)	
	41-50	17 (31.5)	36 (30.5)	40 (28.7)	93(29.9)	
	≥ 51	14 (25.9)	29 (24.6)	20 (14.4)	63 (20.3)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	
Gender	Male	18 (33.3)	43(36.4)	37 (26.6)	98 (31.5)	0.226
	Female	36 (66.7)	75 (63.6)	102 (73.4)	213 (68.5)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	
Education Level	Primary	1 (1.9)	2 (1.7)	5 (3.6)	8 (2.6)	< 0.001
	Secondary	6 (11.1)	18 (15.3)	48 (34.5)	72 (23.2)	
	Institute	25 (46.3)	50 (42.4)	63 (45.4)	138 (44.4)	
	University	20 (37.0)	41 (34.7)	21 (15.1)	82 (26.4)	
	Post Graduate	2 (3.7)	7 (5.9)	2 (1.4)	11 (3.5)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	
Position	Health Medical Worker	49 (90.7)	101 (85.6)	112 (80.6)	262 (84.2)	0.217
	Administration Health Staff	5 (9.3)	17 (14.4)	27 (19.4)	49 (15.8)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	
Years Since In Graduation	1-10	15 (27.8)	26 (22.0)	33 (23.7)	74 (23.8)	0.541
	11-20	16 (29.6)	38 (32.2)	54 (38.8)	108 (34.7)	
	21-30	15 (27.8)	27 (22.9)	32 (23.1)	74 (23.8)	
	31-40	8 (14.8)	27 (22.9)	20 (14.4)	55 (17.7)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	

Years Of Practice In Phcs	1-10	29 (53.7)	53 (44.9)	78 (56.1)	160 (51.4)	0.221
	11-20	14 (25.9)	40 (33.9)	45 (32.4)	99 (31.8)	
	21-30	8 (14.8)	16 (13.6)	13 (9.3)	37 (11.9)	
	31-40	3 (5.6)	9 (7.6)	3 (2.2)	15 (4.8)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	
Name Of Province And District	Province	22 (40.7)	75 (63.6)	46 (33.1)	143 (46.0)	< 0.001
	District	32 (59.3)	43 (36.4)	93 (66.9)	168 (54.0)	
	Total	54 (100.0)	118 (100.0)	139 (100.0)	311 (100.0)	

Based on the data presented in the table, the majority of respondents agree with the importance of various programs and services in primary health care (PHC), such as breastfeeding programs (93.6%), health education for maternal and baby care (94.9%), following visit schedules (94.9%), and having an antenatal care program (92.0%). Most respondents also trust the type of vaccines used (92.9%), think vaccines are stored well (86.2%), and believe vaccines are used correctly (92.0%). Additionally, the majority of respondents think that having a child growth monitoring system (88.4%), a family program such as contraceptives (86.8%), and a school health program (94.2%) are important in PHC. They also believe that the skills and experience of facilities administration influence the success of PHC programs (85.9%) and that the development of a family medicine program is an important step in the development of the health sector (92.0%). However, there are some items that have a more divided response. For example, respondents are split on whether PHC is able to correctly treat and assess for dehydration and diarrhea (54.7% agree, 28.0% disagree, 17.4% neutral). Similarly, respondents have mixed opinions about whether it is important to have X-rays and ultrasounds available in PHC (89.7% agree, 4.5% disagree, 5.8% neutral).

Table (1.5). Frequency of distribution attitude of primary health care staff

Variables	Agree	Disagree	Neutral
Breast-Feeding Programs Are Important And Essential In PHC	291 (93.6)	10 (3.2)	10 (3.2)
Health Education - Care Of Baby Maternal Program Is Important To Be Available At PHC	295 (94.9)	9 (2.9)	7 (2.3)
It Is Important To Follow The Visit Schedule For Return Dates	295 (94.9)	6 (1.9)	10 (3.2)
Having An Ante-Natal Care Program Is Important	286 (92.0)	13 (4.2)	12 (3.9)
The Vaccines Utilized Here Are Trusted	289 (92.9)	5 (1.6)	17 (5.5)

Vaccines Are Stored Correctly	268 (86.2)	11 (3.5)	32 (10.3)
Vaccines Are Used Correctly	286 (92.0)	8 (2.6)	17 (5.5)
Having A Child Growth Monitoring System Is Important	275 (88.4)	4 (1.3)	32 (10.3)
PHC Is Able To Correctly Treat And Assess For Dehydr: Diarrhea	170(54 .7)	87 (28.0)	54 (17.4)
The Skills And Experience Of Facilities Administration Influence The Success Of The PHC Program	267(85 .9)	10 (3.2)	34 (10.9)
It Is Important To Have X-Rays And Ultrasounds For Primary Health Care Program	279 (89.7)	14 (4.5)	18 (5.8)
It Is Important To Have A Family Program Such As Preservatives, And Contraceptives In PHC	270 (86.8)	12 (3.9)	29 (9.3)
It Is Important To Have A School Health Program In Primary Health Care	293 (94.2)	3 (1.0)	15 (4.8)
The Development Of A Family Medicine Program Is An Important Step In Developing The Current Health Sector	286 (92.0)	4 (1.3)	21 (6.8)

This table presents the distribution of attitude scores by different variables, including age group, gender, education level, position, years since graduation, years of practice in PHC, and name of province and district. The total number of respondents for each category is presented in the last column of the table. The attitude scores were categorized into three groups: disagree (≤ 10.6), neutral (10.7-19.3), and agree (≥ 19.4). The number and percentage of respondents falling into each category were not presented in this table. The p-values were also calculated to assess the significance of the differences in attitude scores among different categories of each variable. For example, the p-value for the name of the province and district variable is 0.044, indicating a statistically significant difference in attitude scores between respondents from the province and those from the district.

Table (1.6). Distribution of attitudes towards a certain variable across different demographic groups.

Variables	Total Score Of Attitude			Total	P-Value
	Disagree \leq 10.6	Neutral 10.7-19.3	Agree \geq 19.4		
20-30	0 (0.0)	1 (33.3)	47	48	

Age Group				(15.3)	(15.4)	0.883
	31-40	1 (100.0)	1 (33.3)	105 (34.2)	107 (34.4)	
	41-50	0 (0.0)	1 (33.3)	92 (30.0)	93 (29.9)	
	≥ 51	0 (0.0)	0 (0.0)	63 (20.5)	63 (20.3)	
	Total	1 (100.0)	3 (100.0)	307 (100.0)	311(10 0.0)	
Gender	Male	0 (0.0)	0 (0.0)	98 (31.9)	98 (31.5)	0.695
	Female	1 (100.0)	3 (100.0)	209 (68.1)	213 (68.5)	
	Total	1 (100.0)	3 (100.0)	307 (100.0)	1 (100.0)	
Education Level	Primary	0 (0.0)	0 (0.0)	8 (2.6)	8 (2.6)	0.413
	Secondary	0 (0.0)	1(33.3)	71 (23.1)	72 (23.2)	
	Institute	1 (100.0)	0 (0.0)	137 (44.6)	138 (44.3)	
	University	0 (0.0)	2 (66.7)	80 (26.1)	82 (26.4)	
	Post Graduate	0 (0.0)	0 (0.0)	11 (0.0)	11 (3.5)	
	Total	1(100.0)	3 (100.0)	307 (100.0)	311(10 0.0)	
Position	Health Medical Worker	1 (100.0)	3 (100.0)	258 (84.0)	262 (84.2)	1.000
	Administrati on Health Staff	0 (0.0)	0 (0.0)	49 (16.0)	49 (15.8)	
	Total	1 (100.0)	3 (100.0)	307 (100.0)	311(10 0.0)	
Years Since In Graduation	1-10	0 (0.0)	2 (66.7)	72 (23.5)	74 (23.8)	0.257
	11-20	1 (100.0)	0 (0.0)	107 (34.8)	108 (34.7)	
	21-30	0 (0.0)	0 (0.0)	74	74	

				(24.1)	(23.8)	
	31-40	0 (0.0)	0 (0.0)	37 (12.1)	55 (17.7)	
	Total	1 (100.0)	3 (100.0)	307 (100.0)	301(10 0.0)	
Years Of Practice In Phcs	1-10	1 (100.0)	3 (100.0)	156 (50.8)	160 (51.4)	0.708
	11-20	0 (0.0)	0.0 (0.0)	99 (32.2)	99 (31.8)	
	21-30	0 (0.0)	0 (0.0)	37 (12.1)	37 (11.9)	
	31-40	0 (0.0)	0 (0.0)	15 (4.9)	15 (4.8)	
	Total	1(100.0)	3 (100.0)	307 (100.0)	311(10 0.0)	
Name Of Province And District	Province	1 (100.0)	3 (100.0)	139 (45.3)	143 (46.0)	0.044
	District	0 (0.0)	0 (0.0)	168 (54.7)	168 (54.0)	
	Total	2 (100.0)	6 (100.0)	307 (100.0)	311(10 0.0)	

Discussion

PHC providers have a crucial function in providing healthcare services to individuals with health-related difficulties, as they are typically the initial point of contact for the majority of the population seeking medical attention. This role holds significance for healthcare professionals working in PHC facilities worldwide. In the present study, less than 30% of the participants had university and postgraduate education, 44.4% were educated in associated institutes, and a bit more than one-fourth of them had primary and secondary education. However, although the participants of the present study may have some related certificates, the majority of the PHC providers in our study do not have an appropriate related university education. In a similar study by Bahramian et al (2020), it was reported that no significant association was found between the health literacy of healthcare providers and their attitude toward the use of health literacy education strategies.

More than 40% of the participants were assistant nurses, 19% were paramedical staff, and 11.9% were general physicians. In a similar study by Fee et al (2020), it was stated that nursing assistants perform basic care duties in healthcare or nursing facilities, under the supervision of healthcare staff. Their tasks involve interacting with patients, monitoring vital signs, documenting patient status, promptly responding to emergencies and patient requests for help, reporting observations of behavior, complaints, or physical symptoms, administering medication or treatment, transporting patients using various equipment, assisting with physical tasks such as eating, bathing, dressing and toileting, and preparing rooms for medical procedures while supporting nurses and doctors with medical equipment usage.

Just a bit more than 20% of the participants were older than 51 years. However, it is unclear what the specific effect of age is on the performance of HCP (healthcare providers) regarding their knowledge and attitude. While age may be a factor in these areas, there are many other factors that can influence performance, such as education, experience, training, and individual differences. Additionally, research studies on this topic have produced mixed results, with some studies finding a positive correlation between age and knowledge/attitude, while others finding no significant correlation or even a negative correlation. Therefore, further research is needed to better understand the relationship between age and performance in HCP (Lövdén et al, 2020). In a similar study, Hong et al (2021) reported that younger and novice providers had lower knowledge, but younger providers had more positive attitudes, implying that professional education and training should begin early in their careers to enhance their confidence in emergency delivery of advanced care planning.

In less than 25% of the participants, it has been 1-10 years since they graduated. While, in more than 35% of them, it has been 11-20 years since they graduated. On the other hand, more than half of the participants were active in PHC for 1 to 10 years, and just a bit more than one-third of them were experienced for 11 to 20 years. Taken as a whole, it is evident that more than 80% of professionals have provided their services in PHC for a duration of 20 years or fewer. The experience of PHC providers has been shown to have a significant impact on their performance. Studies have found that providers with more experience tend to have better clinical skills, make more accurate diagnoses, and provide more effective treatments. In addition, experienced providers are often more efficient and can manage their time more effectively, which can lead to better patient outcomes. They are also more likely to have a deeper understanding of the social and cultural factors that can affect patient health, which can help them provide more personalized and effective care (Bangalore et al, 2021).

The majority of PHC facilities have a system to keep a record of pregnant women and are equipped with immunization services. Moreover, these facilities are mainly enforced with child

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growth and development programs, and school health programs, while in less than two-thirds of cases have the possibility of promoting healthy lifestyles. Pinaka et al (2021) conducted a similar investigation and found that primary healthcare (PHC) centers can facilitate the establishment of trust between healthcare providers and marginalized communities, promoting disease prevention and boosting immunization rates.

Participants complained about the presence of a program for chronic diseases in just about half of the centers as well as detecting diabetes using a total risk approach in less than half the centers. Moreover, just a bit more than 45% of the PHC providers were aware of the mental health program in PHC facilities, and those who were aware of the program responsible for controlling communicable diseases were less than 39%. In a similar study, Flood et al (2022) reported that routine PHC facilities can help in the detection of both hypertension and diabetes, as well as chronic kidney disease. Horner (2017) expressed a different perspective from the findings of the current investigation, contending that primary healthcare-based mental healthcare services offer patients the opportunity to acquire essential treatment and support, leading to the preservation of family units, maintenance of social networks, and integration within their communities. Furthermore, these services enable patients to continue contributing to household productivity.

In our study, only slightly more than half of the participants stated to be capable of performing a complete physical examination for pregnant women. There is some awareness of programs and services in primary healthcare facilities, but the general population could have better knowledge and understanding. In a similar study, Jain et al (2021) stated that not performing or doing a poor physical examination is a threat to patient safety as the probability of diagnostic errors and oversights is increased. Moreover, they showed that a careful physical exam can help a clinician refine the next steps in the diagnostic process, can prevent unnecessary diagnostic testing, and can aid in building trust through touch, with the patient.

Our data showed that there was a significant association between the education level of PHC providers and their total score of knowledge. So, PHC providers with higher levels of education have a higher level of knowledge too. Gualtieri (2020) revealed a significant association between the necessary education of PHC providers and their overall knowledge in various fields of patient management. Another study by Wang et al (2015) revealed that PHC providers with higher levels of education tend to have greater knowledge and understanding of healthcare practices and principles than those with lower levels of education. In this regard, policies aimed at increasing the education levels of PHC providers may have a positive impact on the overall health outcomes of the population they serve.

On the other hand, our data showed that the years since graduation and years of practice in PHCs for the staff could not significantly affect their total score of knowledge. As noted in various studies, the impact of years since graduation and years of practice on the total score of knowledge of primary health care (PHC) staff is not entirely clear. While some studies have found a positive correlation between years of experience and knowledge, others have found no significant relationship. Similarly, the relationship between years since graduation and knowledge score is also inconclusive. However, the impact of years since graduation and years of practice on the total score of knowledge of PHC staff may vary depending on a range of factors, including the specific context and the type of knowledge being assessed (Abu-Grain et al, 2018., Turki et al 2020).

Breastfeeding programs, health education for maternal and baby care, and antenatal care programs are among the most significant variables affecting the quality of services provided by the PHC staff. In a similar study by Al-Mutairi et al (2017), it was reported that in the PHC centers exclusive breastfeeding rate was lower than recommended by WHO. However, providing breastfeeding programs in PHC facilities can help to increase the rates and duration of breastfeeding, which can have significant positive impacts on the health and well-being of both mothers and infants (Gbagbo et al, 2022).

Providing a child growth monitoring system, family planning programs, and school health programs are among the most crucial options for quality improvement in PHC facilities. However, having x-rays and ultrasounds available in PHC centers was not such an important option as mentioned by respondents in the present study. In contrast to the findings of the present study, Makanjee et al (2015) reported that medical practitioners observed a common perception among patients that X-rays provide a comprehensive view of their health status and are expected to produce a miraculous cure. Patients were found to have high expectations from X-rays, considering it as a magical cure and a transformative treatment.

The current study's data suggests a statistically noteworthy variation in attitude scores between participants hailing from the province and those residing in the district. This observed difference may be attributed to the availability of different facilities within the examined centers that can affect the total score of attitudes. Although the impact of living place on the total score of attitudes among PHC providers is not clear, some studies have found that providers living in urban areas tend to have more positive attitudes toward their work than those living in rural areas, others have found no significant difference. Additionally, the specific factors that influence attitudes among PHC providers may vary depending on the local context and the characteristics of the population being served (McKenna, 2019).

Conclusion

Effective monitoring of a child's growth is a critical aspect of promoting their survival. In order to enhance the efficiency of existing primary healthcare centers in this regard, it is imperative to prioritize laboratory services and improve the attitudes and practices of healthcare staff. PHC facilities have the potential to maintain records of pregnant women and provide immunization services, which are two significant capabilities. Just over 50% of the respondents reported having the ability to conduct a thorough physical examination on pregnant women. There was a considerable correlation between the educational attainment of PHC providers and their cumulative knowledge score. Therefore, PHC providers with higher educational qualifications possess an elevated level of knowledge. The total score of knowledge exhibited by the staff was not significantly impacted by either the duration of their practice in PHC or the years that have elapsed since their graduation. Breastfeeding initiatives, maternal and child healthcare education, and antenatal care programs are among the most noteworthy factors that influence the quality of services rendered by PHC personnel.

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