A Comparative Study of Nurses Knowledge, Attitudes, and Practices Concerning Fluid Therapy in Children in Public versus Private Hospitals in Erbil City

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ABSTRACT

Background and objectives: Dehydration caused by diarrhea is considered as a significant cause of morbidity and mortality among children all over the world, fluid therapy remain the most effective methods to treat dehydration. Nurses are responsible for initiating, monitoring, terminating, knowing preventing and complications of intravenous fluid therapy. The main aim of the study was to compare nurses' knowledge, attitude, and practice concerning fluid therapy in children in public versus private hospitals.

Methods: A comparative study design was conducted in children hospitals in Erbil City. A randomized sampling technique was used for enrolling 98 nurses from three pediatric hospitals ; from three pediatric hospitals; 70 from Rapareen Public Hospital other 28 nurses from Lala and Consultant Medical City Private Hospitals. The data were collected through direct interview and analyzed through descriptive and inferential statistics (paired Samples t-test) using SPSS 22.0.

Results: The results revealed that highest percentage of nurses age group were 22-28 years, 67.1% %were female in public hospital , about 34.3% and 64.3% graduated from institutes in both hospitals. there was no significant difference between the nurses socio-demographic characteristics from public hospital and private hospitals. There was a significant difference between the nurses from public hospital and private hospitals regarding their KAP. The nurses from private hospital have better KAP than public Hospital .

Conclusion: Knowledge, attitude, and practice of fluid therapy among nurses of Rapareen Public Hospital were poor, while the nurses from private hospitals had an acceptable level of knowledge, attitude, and practice of fluid therapy.

Keywords: Nurses; KAP; Fluid; Public; Private; Hospital

INTRODUCTION

In fluid therapy, circulation is restored by increasing extracellular fluid. Proper functioning of cells depends greatly on water because it plays an essential role in chemical and metabolic reactions inside cells, transports nutrients to cells, removes waste from cells, and regulates body temperature. The balance between the input and output of fluids in the body is called fluid balance which helps metabolic processes function correctly[1]. Acute diarrhea remains a leading cause of death among children in developing countries [2]. Globally, in 2015, estimated that diarrhea was a leading cause of death among all ages (1·31 million deaths), and diarrhea was a common cause of death among children under 5 years old [3]. Nurses are in charge of initiating, monitoring, and terminating fluid therapy. They also need to know and prevent complications caused by catheter inserted through a vein or resulted from

intravenous fluid therapy[4.5.6].I Nurses are needed to increase their knowledge and performance regarding intravenous (IV) fluid therapy to manage its possible complications and improve patient safety [7]. In this regard, errors have been reported to be made by about 39% of nurses and 36% jointly by nurses and emergency physicians. Incorrect medication dose (35%), incorrect medication (30%), and fluid overload (35%) are among the most common errors[8].There has been a general tendency in the last decade toward establishing private systems in the health service; however, health services must be provided equally to all humans. Research has shown how patient satisfaction with health services can be affected by a tangible realm, and that this issue needs to be paid more attention to by the public sector [9]. It is argued that in low and middle income countries more efficient, accountable, and sustainable healthcare services are provided by private sector than the public sector which tends to deliver more equitable and evidence-based care[10].According to the results of a review of 17 studies including over 5,500 hospitals across Europe, public hospitals are reported to have a better economic performance than private not-for-profit (PNFP) and private for-profit (PFP) hospitals. The results of that review also showed that PNFP hospitals are better than PFP hospitals regarding their economic performance[11].Research has shown that nurses in private hospitals have higher and better skills and competence than those working in public hospitals[12].The results of another study indicate that private healthcare centers deliver better care and pay more attention to patients[13].The present study was aimed at comparing knowledge, attitude, and practice needed for fluid therapy in children among nurses working in public and private hospitals in Erbil city.

METHODS

A comparative study was carried out from January to August 2018 order to investigate and compare knowledge, attitude, and practice (KAP) required for fluid therapy in children among Public Hospital and Private Hospitals in Erbil, Kurdistan Region of Iraq. Researchers selected 98 nurses randomly to the study from selected hospitals with 70 nurses randomly chosen from Rapareen Public Hospital, 14 from Lala and other 14 from Consultant Medical City (CMC) Private Hospital. The study inclusion criteria were providing care to sick children admitted hospitals, both genders, having experience in caring for children of at least one year, and graduating from primary nursing schools, intermediate nursing schools, preparatory nursing schools, nursing institutes, or nursing colleges. The study exclusion criteria included nurses working in operation room and who held MSc or PhD in nursing. The required data were collected through observation during practice by the researcher and direct (face-to-face) interview using a questionnaire which was designed and developed by the researcher according to the international guideline of pediatric fluid therapy. It consisted of two sections: (1) The sociodemographic characteristics including personal data (age, sex, address, marital status, and years of experience) and socioeconomic data (occupation, education, and crowding index) and (2) The nurses knowledge (30 items), attitude (15 items), and practice (25 items). The content and structural validity of the questionnaire was determined initially by a panel of 15 experts from different related specialties. And its reliability was examined through the Spearman-Brown Coefficient Reliability of 10 cases which was obtained as 83.9 which is statistically adequate. Moreover, a checklist for fluid therapy in children was prepared which included assessment of dehydration,

status of dehydration, oral rehydration therapy, intravenous solution, method of administration (bolus), deficit, maintenance, and ongoing loss. The nurses' knowledge consisted of 30 multiple choice questions (MCQ) with 0 incorrect and 1 correct answer. The nurses' attitude was scored using a 5-point Likert scale (Strongly Disagree=1,Disagree=2,Neutral=3,Agree=4, and Strongly Agree=5). Higher scores in this section indicated higher attitude. The practice checklist was obtained from the College of Nursing, Hawler Medical University. To score the checklist, each achieved step was given 1 and each non-achieved step 0. The Nurses' KAP was rated as Poor ≤50%, Fair=50-75 %, Good≥75%. Data analysis was carried out through frequency and percentage and inferential statistics (chi square and Paired Samples t-test) using SPSS 22.0. Formal permission was take from an Ethical Committee of the College of Nursing, Hawler Medical University, Participants and hospitals(No.86in 26/1/2017).

RESULTS

Table 1. The present study reveal 54.3% of nurses from public and 60.7% from private hospital aged 22 to 28 years old. It was observed that most of them 67.1% from public and 60.7% from private hospital were female. As for their education, 41.4% from colleges from public, while 64.3% of them graduated from institutes in private hospitals. 54.3% of the nurses had 1 to 5 years of experience in public and 67.9% of nurses from private hospital. In respect of their socioeconomic status (SES), the highest percentage 53% of nurses were from low socioeconomic class. there was non significant association between nurses socio demographical characteristics in both hospital p-value ≥0.05.

Table 2. this table clarifies that majority 87.1 % of nurse in public hospital have had poor knowledge while 67.9% of nurses working in private hospital have had poor knowledge. About 47.1% and 7.1% of nurses were poor attitude in public and private hospitals respectively, 51.4% and 57.1% were fair in practice in both hospital respectively.

Table 3.
According to the present study, there was a significant association between the nurses' age, level of education and their knowledge on fluid therapy in both public and private hospitals 0.013, 0.041 and 0.022, 0.036 respectively. There was non significant association between nurses' gender with their knowledge, attitude, and practice in public hospital and attitude and practice in private hospitals , Moreover, there was a highly significant association between the nurses' years of experience toward fluid therapy and their Knowledge and practice and significant with their attitude in public and private hospitals. In addition, a non significant association was observed between the nurses' type of employment and their KAP regarding fluid therapy (p>0.05).

Table 1: Sociodemographic characteristics of the nurses

Sociodemographic characteristics	Category	Public hospital n=70		Private hospitals n=28		P-value
		F	(%)	F	(%)	
Age group/Years	22-28	38	(54.3)	17	(60.7)	
	29-35	8	(11.4)	4	(14.3)	0.643
	36-42	10	(14.3)	2	(7.1)	NS
	43-49	14	(20)	5	(17.9)	
Gender	Male	23	(32.9)	11	(39.3)	0.225
	Female	47	(67.1)	17	(60.7)	NS
Level of Education	Intermediate	6	(8.6)	0	(0)	
	Secondary	11	(15.7)	1	(3.6)	0.827
	Institute	24	(34.3)	18	(64.3)	NS
	College	29	(41.4)	9	(32.1)	
Marital Status	Married	41	(58.6)	16	(57.1)	
	Single	27	(38.6)	12	(42.9)	0.702
	Widow	2	(2.9)	0	(0)	NS
Type of Employments	Formal	55	(78.6)	0	(0)	
	Contract	3	(4.3)	28	(100)	0.080
	Volunteer	12	(17.1)	0	(0)	NS
Years of Experience	1-5	38	(54.3)	19	(67.9)	
	6-10	11	(15.7)	2	(7.1)	0.918
	11-15	9	(12.9)	2	(7.1)	NS
	>15	12	(17.1)	5	(17.9)	
Unit of Work	Medical	17	(24.3)	13	(46.4)	
	Surgical	18	(25.7)	0	(0)	0.078
	NICU	22	(31.4)	7	(25)	NS
	Emergency	13	(18.6)	8	(28.6)	
Training Course	Yes	0	(0)	0	(0)	a*
	No	70	(100)	28	(100)	
Residency	Urban	46	(65.7	20	(71.4)	
	Sub Urban	10	(14.3	6	(21.4)	0.901
	Rural	14	(20)	2	(7.1)	NS
Socio-Economical status	High	10	(14.3)	3	(10.7)	
	Middle	32	(45.7)	10	(35.7)	0.881
	Low	28	(40)	15	(53.6)	NS

*No statics because the participation was constant

Table 2: Nurse KAP in public and private Hospitals.

KAP	Category	Public Hospital (n=70)		Private Hospitals (n=28)	
		F	(%)	F	(%)
Knowledge	**Poor**	61	(87.1)	19	(67.9)
	Fair	5	(7.1)	2	(7.1)
	Good	4	(5.7)	7	(25)
Attitude	**Poor**	33	(47.1)	2	(7.1)
	Fair	33	(47.1)	19	(67.9)
	Good	4	(5.7)	7	(25)
Practice	**Poor**	32	(45.7)	11	(39.3)
	Fair	36	(51.4)	16	(57.1)
	Good	2	(2.9)	1	(3.6)

Table 3: The association between the nurses' KAP and their socio demographic characteristics

Sociodemographic characteristics	Public hospital			Private Hospital		
	Knowledge	Attitude	Practice	Knowledge	Attitude	Practice
Age	0.013	0.216	0.016	0.041	0.494	0.218
Gender	0.261	0.666	0.132	0.049	0.416	0.963
Level of Education	0.022	0.098	0.003	0.036	0.278	0.117
Type of Employments	0.678	0.068	0.976	0.515	0.396	0.788
Years of Experience	0.004	0.047	0.002	0.008	0.016	0.006
Socio-Economical status	0.045	0.177	0.035	0.539	0.411	0.956

DISCUSSION

The current study revealed that that most of the nurses from public and private hospitals were aged between 22 and 28 years. This finding agrees with findings from Elshamy et al (2015) who reported that 60% of the nurses aged from 21 to 32 years[14]. Similarly, Mohammed (2015) showed that most of the nurses aged under 30 years[15]. It was also concluded that about most of nurse from public and private hospital were female, which is in line with Deshmukh and Shind (2012) whose study consisted of 83.3% women [16]. Regarding the nurses' level of education, the current study revealed that more than half of the nurses public and private hospital graduated from institutes, which is in line with the studies carried out by Elshamy et al (2015) and Deshmukh and Shind (2012) who reported that most of the nurses held diploma[14, 16] .On contrary, the majority of the nurses (76.4%) in the study of Shaymaa et al (2013) graduated from nursing schools[17]. Concerning the nurses' clinical experience, most from public and private hospitals had 1 to 5 years of experience. This finding is in high agreement with the results reported by Deshmukh and Shind (2012) who reported that 71.67% of the nurses had worked 0 to 5 years in clinics[16]. Similarly, Ahmed (2007) concluded that 70.3% of the nurses had less than 5 years of experience[18]. Concerning the nurses' SES, about 40.0% and 53.6% of the participants were from both hospitals respectively belonged to the low socioeconomic class, which can be attributed to the current financial problems in the Kurdistan Region since 2014. There was no significant association between nurses socio-demographical characteristics in both hospital p-value ≥0.05.this finding is strongly with Ghorbani et al (2014) also demonstrated that in their there was no significant association between nurses gender and educational level between public and private hospital while a significant association was seen with nurses age group and years of experience p-value <0.05[19] . Our results agree with Javadi et al (2011), which found no significant association between nurses view point score of response based on gender and educational level and type of hospital p-value <0.05 [20]. similarly founded by Haukedal et al (2018) found there was no significant association between nurses age group, gender, and experience in health care in both control and intervention group p-value ≥0.05[21]. Likewise Keleekai et al (2016) reported no significant association between nurses socio demographical characteristics in both control and intervention group p-value ≥0.05[22]. With respect to knowledge about fluid therapy, results showed that the nurses from both hospitals had poor knowledge, nurses in the private hospital had better knowledge than public hospital. This finding aligns with Deshmukh and Shind (2012) and Mohammed and Taha (2016), which showed that nurses had poor knowledge [16,23]. Higher level of knowledge in the private hospitals could be due to attention to educational program and financial support than private one, while disagree with Alrubaee et al (2017) who found that most nurses (87%) had a fair level of knowledge[24]. Concerning nurse attitudes, our study revealed that 47.1% of nurses had a fair attitude about public hospitals while 67.9% had fair attitudes about private hospitals. this finding is completely agree with the study done by Kwateng et al (2017) in their study that indicate there was a higher level of care and attention at private healthcare facilities than the public[25]. but disagree with Moonaghi et al; (2012)

and Feng et al ;(2014) they concluded that the nurses' poor perception regarding toward fluid administration [26,27]. Unfortunately, regarding nurse practice, 51.4% of nurse demonstrated only fair practice in public hospital while 57.1% demonstrate fair practice in private hospitals. Camilleri et al (1998) also found that private hospitals are expected to offer a higher quality service[28] . the higher level of practice in the private hospitals of the present study can be due to greater financial support and adequate equipment supply in the private hospitals, and lower level of practice in Rapareen Hospital was because there is no infusion pump and they do not use flow meter despite its availability. The present study revealed a significant association between nurse age , level of education, and their knowledge about fluid therapy in children . This is agreement with Feng etal (2014) and Mogileeswari and Ruth Grace (2016), which demonstrated a significant association between the nurse knowledge about fluid and electrolyte replacement therapy and age and level of education[27,29]. However, this finding not in line with Deshmukh and Shind (2012) and Vijayan (2011) they concluded that there was no significant association between the nurse age and their knowledge[16, 30]. The present study also showed that there was a highly significant association between nurse years of experience and knowledge and practice in public and private hospitals p value 0.004, 0.008 and 0.002, 0.006 respectively . This finding is in strong agreement with the studies by Mohammed and Taha (2016) and Mogileeswari and Ruth Grace (2016) they reported in theirs studies a highly significant association between the nurses' knowledge and experience[23,29]. The results demonstrated a significant association between nurses socioeconomic status knowledge nurses'

and practice in public hospitals, p value 0.046 ,0.035 respectively, while non- significant association in private hospitals. This finding is in agreement with Mogileeswari and Ruth Grace (2016), which reported a significant correlation between the nurses' income and their knowledge and practice[29]. Regarding the nurses' attitude, there was a significant association between the type of hospital and the attitude in public hospital p.value 0.011, which may be due to greater accountability and administrating supervisor and better finance support in private hospitals.

CONCLUSION

The majority of nurses were between 22 and 28 years old, female, married, graduates of institutes, and formally employed. Nurses had less than five years of experience, and had low socioeconomic status , Nurse knowledge, attitudes, and practices were better in the private hospitals than public hospital. Researchers recommended supporting public hospitals financially and ,administratively to improve services at public hospitals.

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