PHARMACISTS' ATTITUDES AND KNOWLEDGE OF BASIC FIRST AID

Stella F. Usifoh and Azuka C. Oparah
Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, University of Benin, Nigeria.

ABSTRACT
The objectives of this study were to assess the opinions of pharmacists and determine the extent they are prepared to administer first aid in emergency cases, to determine the pharmacists' knowledge, attitudes and practice of applying basic first aid within the community and to assess need for pharmacists' further training on first aid. The knowledge, attitudes and practice of pharmacists towards first aid were surveyed in Benin City. In the pre intervention study, 300 questionnaires were self completed anonymously, a response rate of 75.7% was obtained. After an educational intervention, 200 questionnaires were self completed with a response rate of 74.5%. The result suggested that while the attitudes towards first aid were generally positive, the knowledge on resuscitation techniques was poor, 50% of Pharmacists could not identify circulatory arrest while majority had no knowledge of cardiac massage in case of emergency. Many respondents were affirmative that they would be willing to undertake mouth-to-mouth resuscitation on family member but only one third were willing to perform it on strangers. Also, on artificial respiration techniques application on patients, only few Pharmacists could perform it while many couldn't. Unfortunately, only a few knew the phone number to call in case of emergency. However, in Nigeria today, there is no national unified number to call and get prompt response in emergency situations. On the issue of training of Pharmacist on first aid techniques and willingness to pay for such training, almost all the Pharmacists agreed that they would be willing to be further trained and will also like to pay for such training. There was a significant increase in knowledge and attitude when we compare the average Pre-Intervention mean, standard deviation and sample size with Post-Intervention mean, standard deviation and sample size and subjecting it to inferential statistics, the unpaired t test and P values was less than 0.0001 and so is interpreted as significant. The study concluded that attitudes of the pharmacists were positive, with an evident desire for greater knowledge, and a high willingness to learn more about first aid. Unfortunately, the level of first aid training is poor and pharmacists do not learn practical skills. Training should start in school and continue even at the place of work. It should be conducted by well trained personnel using the most modern didactic devices. This will further enhance primary health care in the area of prevention and appropriate treatment of common diseases and injuries, and then pharmacists can impact appropriately on the health of Nigerian citizenry.

KEY WORDS: Pharmacist, knowledge, attitudes, practice and basic first aid.

INTRODUCTION

The Alma – Ata Declaration on primary health care (PHC, 1978) states that -"Health is a fundamental human right and that the attainment of the highest possible level of health is a most important worldwide social goal-". In addressing the main health problems of the community, primary health care must -"provide promotive, preventive, curative and rehabilitative service-". The declaration states that PHC includes at least prevention and control of locally endemic diseases, appropriate treatment of common diseases and injuries and the provision of essential drugs-". It recognizes the role played by all health workers and the need for suitable training to enable these people to work as a health team to respond to the expressed needs of the community.[1]

Knowledge of first aid, which constitutes life saving treatments for injuries, or unexpected illnesses, is important for every individual at every age. First aid and basic life support is so important that teaching basic first aid should be compulsory in all schools.[2] Properly administered first aid, which is restoration of upper respiratory tract patency, pulmonary – circulatory resuscitation, massive internal bleeding arrest, placement of the victims in safe position etc. may save the lives of many victims of accidents. Every first aider should know the first aid principles and administer it before paramedic's arrive.[3] The 3 main aims of first aid, commonly referred to as the "3 Ps" are to Preserve life, Prevent further injury and Promote recovery. In addition, some trainers may also advocate a 4th 'P' - Protect yourself, although this is not technically an 'aim' of providing first aid, and some people would consider that it is adequately covered by 'Prevent further injury' as this is to the casualty, yourself or others.[4]

There are universal precautions to protect yourself. Universal precautions," as defined by CDC, are a set of precautions designed to prevent transmission of human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other blood borne pathogens when providing first aid or health care. Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for HIV, HBV and other blood borne pathogens[5].

Professional rescuers practice universal precautions when providing medical care to victims. Universal precautions are steps used to reduce the potential for victims to infect rescuers and this requires personal protective equipment such as gloves or eye protection.

The most common hazard faced by medical rescuers is the threat of communicable disease. The routes of transmission for occupational exposure are puncture of the skin with a contaminated sharp object, contact with broken skin, and splash to mucous membranes of the eye, nose, or mouth.

Universal precautions may include the following practice[6]

- Wash hands before and after each medical procedure (may use a waterless hand cleaner)
- Wear gloves whenever there is a possibility of coming in contact with blood or other potentially infectious materials (body fluids and tissues)
- Wear full-body gowns whenever there is a possibility of blood splashing onto the rescuer Wear face masks and eye protection whenever there is a possibility of blood splashing into the rescuer's face
- Dispose of all contaminated sharp objects in an appropriate puncture-proof container
- Dispose of all contaminated personal protective equipment in an appropriate container marked for bio-hazardous waste

Much of first aid is common sense, and people are almost certain to learn some elements as they go through their life (such as knowing how to apply an adhesive bandage to a small cut on a finger). However, effective life-saving first aid requires hands- on training by experts, especially where it relates to potentially fatal illnesses and injuries, such as those that require cardiopulmonary resuscitation (CPR), as the procedures may be invasive, and carry a risk of further injury to the patient.

Fundamentals of first aid are the "ABC". There are certain skills which can be regarded as core. First aiders are taught to focus on the "ABC"s of first aid before giving additional treatment these are: Airway, Breathing and Circulation[7]. This means any first aider should first evaluate and attempt to treat problems with a casualty's airway. If the airway is open the first aider should then evaluate and attempt to treat problems with breathing followed by circulation (circulation of blood). Some instructors add a fourth step of "D" for Deadly Bleeds or Defibrillation. Variations on techniques to evaluate and maintain the ABCs depend on the skill level of the first aider. Once the ABCs are secured first aiders can begin more advanced treatments, if required.[7]

Members of the public were questioned about previous first aid training and whether they believed that they would be able to manage a seriously injured adequately. It was found that those who had some form of training were significantly more confident about their abilities to be involved in initial treatment of a seriously injured patient[8]. In another survey, Gonvewiez et al concluded that training should start in primary school and continue in adult life in the place of work. This should be conducted by physicians using the most modern didactic devices.[9] Larsen et al noted that 70% of the public said that cardiopulmonary resuscitation should be compulsory component of the driver's license test in New Zealand[10]

Pharmacists' participation in cardiopulmonary resuscitation, including the basic life support activities of artificial respiration and chest compression was first evaluated by Leslie et al-' they found that hospitals with decentralized pharmacists were more likely to have their pharmacist involved in their cardiopulmonary resuscitation team than hospitals with centralized Pharmacist though little of their training is utilized in their current practice- [11]. Previous studies by Chemperek et al in 2004 on pharmacists' attitude to the issue of applying basic first aid showed that pharmacist knowledge on resuscitation technique is insufficient and they would be glad to update guidelines concerning basic rules of behavior in emergencies.[12]

It has been assertained that pharmacists are the most accessible members of the health care team to the public.[13] Also many Pharmacists are always on the road as medical representatives, their abilities as drivers and health providers to give first aid will be essential in saving many lives Therefore, it is important that a good attitude, practice and knowledge of first aid by pharmacists will be of immense help in saving lives within the community.

Traffic crashes and emergency situations constitute a major worldwide public-health problem that can cause disabilities, life-long suffering, and huge economic losses. When a person is involved in a traffic crash or in emergency situations, actions taken by bystanders often are of crucial importance. To perform first-aid actions in a correct manner, bystanders, often laypersons, need both the courage and the knowledge to do so. ►

For preventive purposes, society spends large resources to inform and educate the public in order to enhance people's ability to take correct actions. However, there is little information on the rate in a population of persons who have had first-aid training, have been bystanders at a traffic crash, on the actions taken by such persons, and on effects of first-aid training on patient care.[14]

The objective of the study is to assess the opinions of Pharmacists and determine the extent they are prepared to administer first aid in emergency cases, to determine the Pharmacists knowledge, attitude and practice of applying basic first aid within the community and to evaluate if Pharmacists need further training in first aid.

METHODS

The study was carried out at five major places of meetings of pharmacists. At University of Benin Teaching Hospital (UBTH) pharmacy department clinical meetings, Pharmaceutical Society of Nigeria (PSN) meetings, University of Benin Pharm D conversion classes, Association of Community Pharmacists of Nigeria meeting (ACPN) and the Pharmacists Council of Nigeria (PCN) Mandatory Continuing Education for Pharmacist (MCPD) modules 6 and 7.

The survey was conducted using anonymous self-completion questionnaire. The instrument was developed and pre tested. The 29-item instrument contained questions on the demographic profile of respondents which were age, sex, level of education, years of practice, area of practice and working experience. Data was also gathered on assessment of practice, attitude and knowledge using the 5-point {Likert-type}response scale which was anchored as; strongly agree = 5; agree = 4; undecided =3; disagree =2 and strongly disagree =1. Respondents were also questioned on their first aid knowledge using a 4-point scale of 3, 2,1and 0. Three correct answer =3, two correct =2, One correct = 1 and wrong answer = 0. There were also closed ended questions on their knowledge of resuscitation techniques.

Data analysis

The raw data were entered into Microsoft Excel software and checked for accuracy. Data was analyzed using the Statistical Package for Social Sciences SPSS (version 11.0) for descriptive statistics and GraphPad Instat (version 2.05a) for inferential statistics. Mean scores with standard deviations and percentage frequencies were determined. Inferential statistics were calculated with the aid of GraphPad Instat, which reports the exact unpaired t test and P values; hence a P value of less than 0.05 was interpreted as significant.

RESULTS

A total of 300 questionnaires were distributed. 227 questionnaires were duly completed and returned at a response rate of 75.7%. A total of 90.7% of the pharmacists obtained their professional qualification in Nigeria, 2.2% in Europe and 1.3% in America. Only 5.7% of the pharmacists had previously practiced outside Nigeria. Though a low proportion of the pharmacists 26.4% had received previous training on first aid, 19.8% got such training in school of pharmacy, 3.5% in paramilitary training and 6.6% in other places. Majority of the pharmacists were male (65.3%) while two thirds had B.Pharm degree. Details of demographics are presented in Table 1.

Table 1 Pre-Intervention Demographics

Item	Frequency	Percentage (%)
Degree		
B. Pharm	151	66.5
Pharm D	52	22.9
M Pharm	19	8.4
Ph D	5	2.2
Years of Practice (yr)		
Below 5	27	11.9
5-10	52	22.9
10-14	42	18.5
15-19	30	13.2
20-24	30	13.2
>25	46	20.3
Area of Practice:		
Hospital	80	35.2
Community	82	36.1
Academics	14	6.2
Consultancy	6	2.6
Industry	18	7.9
Others	16	7.0
Sex		
Male	148	65.3
Female	76	33.5
Missing system	3	1.3
Age (yrs)		
20-29	22	9.7
30-39	76	33.4
40-49	59	26.0
>50	66	29.1
Missing system	4	1.7

The study examined the practices, attitude and knowledge of pharmacists towards first aid. The results indicated a low positive attitude (Table 2). About 2.3% considered their knowledge adequate, only 3.5% strongly agreed that they could undertake first aid procedure at the scene of an accident, of the respondents, 50.7% strongly agreed that they required further training,

Table 2: Practice Attitude and Knowledge of Pharmacists towards First Aid

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I consider my knowledge in first aid to be adequate	15%(34)	45.4%(103)	18.1%(41)	16.7%(38)	2.3%(5)
2. I can be better trained in first aid.	1.3%(3)	1.3%(3)	0.4%(1)	43.6%(99)	50.7%(115)
3. I require improved or additional knowledge in first aid	1.4%(3)	Nil	0.9%(2)	48.7%(110)	47.2%(107)
4.I can join rescue team in case of emergency	6.2%(14)	7.9%(18)	17.6%(40)	46.7%(106)	17.2%(39)
5. My level of knowledge in the field of emergency action is sufficient or satisfactory	17.6%(40)	54.2%(123)	14.1%(32)	9.7%(22)	1.8%(4)
6.At the scene of an accident, I can adequately undertake first aid procedure	12.8%(29)	37%(84)	22.9%(52)	21.1%(48)	3.5%(8)

Post Intervention

First Aid Demographics profiles.

A total of 200 questionnaires were distributed after interactive lecture on first aid; 149 usable ones were returned. The response rate was 74.5%.

Only 108 subjects (72.5%) had correct knowledge of ABC rules which stands for airways, breathing and circulation, with 83.2% respondent knowing the correct meaning of ABC.

On knowledge of phone number to call in case of emergency only 23.5% had such knowledge.

Majority of the pharmacist (77.9%) have B. Pharm and only 1.3% are with PhD. One third 34.9% are working as community Pharmacists and 61.15% are males. (Table 3)

TABLE 3 POST INTERVENTION

Level of Education	N = 227	
Item	**Frequency**	**Percentage**
Degree		
B. Pharm	116	77.9
Pharm D	23	15.4
M Pharm	6	4.0
Ph D	2	1.3
Years of Practice (yr)		
Below 5	3	2.0
5-10	31	20.8
10-14	26	17.4
15-19	20	13.4
20-24	25	16.8
>25	40	26.8

Area of Practice		
Hospital	43	28.9
Community	52	34.9
Academics	4	2.7
Consultancy	5	3.4
Industry	10	6.7
Others	16	10.7
Sex		
Male	91	61.1
Female	45	30.2
Age (yr)		
20-29	1	0.7
30-39	42	28.9
40-49	53	35.6
>50	48	32..2

57% of the pharmacists considered their knowledge of first aid to be adequate, 58.4% could undertake first aid procedure, and 57.7% strongly agreed that they required further training, Table 4.

On the knowledge on resuscitation techniques, 53.7% of Pharmacists cannot identify circulatory arrest while 71.5% have no knowledge of cardiac massage in case of emergency. A total of 49.35% did not know that cardiac arrest is different from heart attack.

TABLE 4: Post Intervention Assessments of Attitude, Knowledge and Practice on First Aid

Item	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.I consider my knowledge in first aid to be adequate	4%(2.7)	22.8%(34)	10.1%(15)	57%(85)	4.7%(7)
2. I can be better trained in first aid.	1.3%(2)	2.0%(3)	1.3%(2)	57.7%(86)	36.9%(55)
3. I require improved or additional knowledge in first aid	1.3%(2)	2.7%(4)	2.0%(3)	63.1%(94)	30.9%(46)
4. I can join rescue team in case of emergency	2.7%(4)	4.7%(7)	14.1%(21)	64.4%(96)	12.8%(19)
5. My level of knowledge in the field of emergency action is sufficient or satisfactory	5.4%(8)	33.6%(50)	20.8%(31)	37.6%(56)	2.0%(3)
6. At the scene of an accident, I can adequately undertake first aid procedure	4.0%(6)	11.4%(17)	17.4%(26)	58.4%(87)	6.7%(10.0)

The average percentage positive attitude in post intervention is higher than in pre intervention where 65.1% now said they can adequately undertake first aid at accident scene compare to 24.6%in the pre evaluation. Details below in table 5

Table 5: Comparison of Sample Subscales

Subjects	Pre Education				Post Evaluation			
	Mean	Standard Deviation	Sample Size	Average %Positive Attitude	Mean	Standard Deviation	Sample Size	Average %Positive Attitude
1. I consider my knowledge in first aid to be adequate	2.44	1.03	222	18.95	3.39	0.99	145	61.7
2. I can be better trained in first aid.	4.45	0.71	222	94.30	4.28	0.72	148	94.60
3. I require improved or additional knowledge in first aid	4.43	0.65	218	95.85	4.20	0.72	149	94.0
4. I can join rescue team in case of emergency	3.63	1.07	222	63.90	3.81	0.82	147	77.20
5. My level of knowledge in the field of emergency action is sufficient or satisfactory	2.22	0.92	222	11.50	2.97	1.01	148	39.60
6. At the scene of an accident, I can adequately undertake first aid procedure	2.64	1.07	222	24.60	3.53	0.93	146	65.10

Table 6 Comparison of pre- and post- intervention positive responses

S/No	Title	Pre Intervention %	Post Intervention %
1	Knowledge on ABC rules of first aid	13.6	72.5
2	Knowledge on correct meaning of ABC	6.1	83.2
3	Knowledge on identification of circulatory arrest	39.0	75.2
4	Knowledge on cardiac massage	21.9	60.4
5	Difference between cardiac arrest and heart attack	38.2	43.0
6	Overall aim of first aid	0.9	1.3
7	Phone number to call in emergency	16.7	23.5
8	First aid training should be compulsory in pharmacy curriculum	96.9	91.3
9	Willingness to perform mouth to mouth resuscitation on family member	89.0	88.6
10	Willingness to perform mouth to mouth resuscitation on stranger	38.2	50.3
11	Willingness to receive further training on first aid	94.7	89.9
12	Willingness to pay for such training	86.4	81.9
13	Mean	51.5	72.0

In table 6 above, comparing the attitudinal data of pre- intervention with post- intervention many as much as 89% to 88.6% were affirmative that they would be willing to undertake mouth-to-mouth resuscitation on a family member with 38.3% to 50.3% willing to perform it on strangers. The mean positive attitude is 51.5% to 72.0%.

However, on the issue of training of pharmacists on first aid techniques and willingness to pay for such training, 94.7% to 89.9% agreed that they would be willing to be trained and 86.3% to 81.9% would also like to pay for such training.

Comparing the Pre Intervention with Post Intervention scores the unpaired t test and P values was less than 0.0001.

DISCUSSION

The study examined the knowledge, attitude, and practices of pharmacists towards first aid. The result suggested that while the attitudes towards first aid were generally positive as in table 5, the knowledge on resuscitation techniques was poor. Half of the pharmacists could not identify circulatory arrest while majority had no knowledge of cardiac massage in case of emergency. About half of the respondent did not know that cardiac arrest is different from heart attack. A cardiac arrest, also known as cardiorespiratory arrest, cardiopulmonary arrest or circulatory arrest, is the abrupt cessation of normal circulation of the blood due to failure of the heart to contract effectively during systole.[15] A cardiac arrest is different from (but may be caused by) a heart attack or myocardial infarction, where blood flow to the still-beating heart is interrupted.[16] ►

First aid procedure and resuscitation techniques are vital areas of studies to equip health professionals and lay men in rescuing and saving lives of many victims. Thus almost all the pharmacist agreed that it should be included in the curriculum of training of pharmacist in Nigeria, the poor level of training is reflected in the response about the overall aim of first aid where only a few of the respondents got the correct answer, which is to preserve life, prevent further injury and promote recovery, otherwise known as the 3P's. This study further supports a similar work done where it was noted that Pharmacists attitude to first aid were positive but skill were poor, also that pharmacists knowledge on resuscitation technique is insufficient and they would be glad to update guidelines concerning basic rules of behavior in emergencies.[10]

Many respondents were affirmative that they would be willing to undertake mouth-to-mouth resuscitation on family member with only one third being willing to perform it on strangers. However on artificial respiration techniques application on patients, only few could perform it while many could not. Studies addressing a bystander's willingness to perform mouth-to-mouth ventilation on a stranger have found large international variations. In Australia, 47% of people would perform rescue breathing on a stranger[17] in the United States 15%[18] and in Japan only 2–3%.[19] Although the likelihood of contracting HIV from rescue breathing is extremely low (indeed there is no reported case), the American study subjects cited fear of contraction of HIV as the principal concern. In contrast, in the Japanese study, despite the inevitable outcome of untreated apnea, fear of not being able to perform the skill correctly was cited as the principal barrier. Clearly, therefore, false perceptions relating cardiopulmonary resuscitation (CPR) skills are an important factor that modifies a person's willingness to provide an important life saving skill. In this regard, the results from our current study are not encouraging as one third of the respondents in the pre intervention with a slight increase to half in post intervention reported willingness to perform rescue breathing on a stranger.

In a previous study, it was noted that despite the importance of understanding the nature of a heart attack and cardiac arrest, fewer than half of the subjects believed these to be different. If a basic concept such as this is so poorly understood, then, given the major importance of myocardial infarction mortality, it is difficult to understand how the general public is likely to fully appreciate the need for CPR, early access to defibrillation, and early activation of the emergency medical systems.[20] This also is reflected in this study as two thirds of pharmacists could not identify circulatory arrest while more than half had no knowledge of cardiac massage in case of emergency. Almost half of the respondents did not know that cardiac arrest is different from heart attack and on artificial respiration techniques application on patients; majority could perform it while few could not. Concerning the issue of training of pharmacist on first aid techniques and willingness to pay for such trained, almost all the pharmacists agreed that they will be willing to be further training and pay for it.

Comparing the pre intervention scores with the post intervention, there was an increase in the mean percentage positive attitude. Unpaired t test showed a significant improvement in the knowledge, attitude, and practices of pharmacists.

Lack of knowledge as well as disbelief in one's skills can stop those who would like to help from taking part in rescue procedures. The results of the study indicated that a few considered their level of knowledge to be adequate, while many said they could join a rescue team in case of emergency and would undertake a first aid procedure at an accident scene. However one third of respondent admitted that their skills were insufficient. Unfortunately, only a few knew the phone number to call in case of emergency. Actually, in Nigeria today, there is no national unified number that one can call and get prompt response in emergency situations.

Limitations

This survey was carried out in the south west zone of Nigeria and at just one of the centers for the mandatory continuing professional development of pharmacist; the result may be an indication of attitudes of Pharmacists in other parts of Nigeria. The Pharmacist Council of Nigeria (PCN) is responsible of regulating pharmacists and pharmacy practice in Nigeria. Specifically, the Council is mandated to determine what standard of knowledge and skills are to be obtained by persons seeking to become Pharmacists in Nigeria. The pharmacy education in Nigerian is gradually refocusing the training of pharmacy professionals on patients rather than pharmaceuticals as sole element of practice. Therefore it will be appropriate to conduct this survey nationally.

Lack of knowledge as well as disbelief in one's skills may have affected their response which is reflected in a number of missing and unreturned questionnaires. Also a practical demonstration of skills would have been more appropriate to determine the skills of pharmacist. A previous study has indicated the loss of skills acquired in training due to lack of use as little of their training is utilized in their current practice[11].

CONCLUSION

The study concluded that attitudes of the pharmacists were positive, with an evident desire for greater knowledge, and a high willingness to learn more about first aid. Despite this, specific aspects of knowledge relating to basic first aid were poor, thus indicating limitation of present educational strategies to increase first aid knowledge within the context of mandatory continuing education. Unfortunately, the level of first aid training is poor and pharmacists do not have practical skills. As indicated previously, raining should start in school and continue even at the place of work. It should be conducted by well trained personnel using the most modern didactic devices. This will further enhance the primary health care in the area of prevention and appropriate treatment of common diseases and injuries, and then pharmacists can impact appropriately on the health of Nigerian citizenry.

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