

Medical Aliteracy Among Senior Medical Personnel in Akoko South West Local Government Ondo State

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Abstract

The issue of medical aliteracy has drawn both scholars and medical practitioners' attention in the recent years. The negative cost of medical aliteracy has continued to constitute major threats to health related issue which has resulted in high mortality rate, high medical expenditure and medical underperformance among others. On this premise the study examined the influence of medical aliteracy among senior medical personnel. The study employed descriptive research design and Chi-Square to test the research hypotheses. A total number of 50 questionnaires were designed to collect information from the sampled population through a random sampling. From the result of the analysis it was revealed that factors such as ineffective supervision of medical personnel, low patient literacy level, lack of personnel-patients engagement could lead to medical aliteracy among senior medical personnel. Senior medical personnel have the knowledge of medical aliteracy and its implications on for medical personnel and the public. Medical aliteracy has an implication on health sector performance which includes increase in mortality rate, increase health expenditure, widening of the gap between patients – medical personnel communication among others. Perception of medical aliteracy has significant influence on medical personnel performance. The study concluded that, medical aliteracy is prevalent among medical personnel and patients and is associated with many poor medical outcomes in the health sector. It was however recommended that medical literacy training, schemes and programmes should be designed according to the needs of the different medical personnel and should therefore be included in medical professional training programs.

Keywords: Aliteracy; Medical aliteracy; Medical personnel; Low health literacy; Health sector.



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1. Introduction

Health literacy is an essential component in managing health. Research exploring the relationship between health literacy and health outcomes found that patients with low health literacy or health aliteracy are at risk of adverse health outcomes such as: higher systolic blood pressure, poor glycerin control, higher rates of hospitalization and longer hospital stays, insufficient knowledge of treatment plan after discharge, and less knowledge about chronic disease management [1]. Patients with low health literacy and chronic conditions find it difficult to manage their conditions effectively. There may be high levels of emotion and fear when facing an illness making it difficult to make clear decisions about one's health [2]. They may take multiple prescription medications and are confused about drug interactions, dosage, and instructions on how and when to take them.

Knowing that a certain level of inadequate health literacy exists makes the ability to recognize aliteracy an important one. According to the Joint Commission on Accreditation of Healthcare Organizations' [3], it is incumbent upon health professionals to identify learning and educational needs, use appropriate educational resources and to assess the patient's and family's ability to comprehend, use and apply information taught [4].

Assessing the level of health literacy can motivate senior medical practitioner and specialists to find ways to address the issue of health alliteracy and delivering care suitable to a patient's literacy level. Delivering care tailored to patients' literacy levels is key element to enabling patients to engage in the process of care and to accessing all the resources that may be available to them. Literacy assessment is an important component of effective advanced practice nurse-patient communication, enabling a nurse practitioner or clinical nurse specialist to elicit a better medical history, explain a treatment plan in understandable terms, assist the patient to integrate treatment recommendations into their usual daily routine, be sensitive to other psychosocial issues the patient may be dealing with, and convey empathy. All of these factors may lead to increased patient satisfaction with care, an important health care outcome and indicator of quality of care that is valued by patients, payers, and health care administrators [4].

Considering the fact that poor health literacy or aliteracy is a barrier to medical care and people health aliteracy experience greater illness severity than people with higher health literacy [5], health aliteracy may therefore be an important challenges being faced by senior medical practitioner which continues to retard health performance in Nigeria.

1.1. Statement of the Problem

While health literacy has drawn both scholars and medical practitioner attention, issue of medical aliteracy is still emerging. Low health literacy has been recognized by scholars and medical practitioner as a serious public health issue known to be associated with the social gradient and health inequalities which has continue to affect health outcome [6]. The inability of patients to understand medical information makes it difficult for them to effectively manage their healthcare needs. This problem is further exacerbated when medical practitioner, including medical trainees and nursing students lack the knowledge and skills to address the needs of patients with low health literacy [7]. It has been suggested that a lack of medical and nursing student training about health literacy has contributed to this gap in their knowledge and skills, as well as their inability to provide high-quality patient-centred care because of poor communication skills [7].

Low health literacy, who typically engage in unhealthy lifestyle behaviours, include not only less educated, poorer, older and ethnically diverse patient but also patients who have strong educational background but have no interest in reading medical manuals and resources. Health aliteracy may have an impact on individual factors and circumstances, as well as the responsiveness of health services, healthcare providers and organizations. Regardless of their background and education, people with health aliteracy find it difficult to navigate healthcare systems and often ignore information provided to them by healthcare providers and organizations viewing the information as dense, technical, and has jargon-filled language. Medical aliteracy has been associated with poor patient self-care, high health-care costs, non-adherence to treatment plans and medical regimens, and increased risk of hospitalization and mortality.

The negative cost of health aliteracy has continued to prove that health aliteracy constitutes major threats to health related issue. For instance, major mortality rate in the recent years has been attached to health aliteracy which sometimes arises from the part of medical practitioners. Medical practitioners due to their lackadaisical attitudes towards health issue with result in medical error. Also failures of senior medical practitioners to continuously improve their medical skills relaying on outdated method providing health services also contributes to the menace of medical aliteracy. The resultant effect of adoption of old method by practitioners especially in Nigeria and some other developing countries includes wrong diagnosis, wrong prescription, inaccurate medical educations to patients among others.

In line with the aforementioned problem, this study assesses the issue medical aliteracy among medical personnel in Akoko South West local government area of Ondo State.

1.2. Research Questions

1. What is the level of aliteracy among the medical personnel?
2. What is the reading rate among medical personnel?
3. What is the reading preference of medical personnel?
4. What is the reading interest of medical personnel?
5. Is there gender equity in the aliteracy level of medical personnel?
6. What are the factors causing medical aliteracy among senior medical personnel?
7. What is the awareness level and perception of the impact of medical aliteracy among medical personnel?
8. What is the effect of medical aliteracy on health sector among senior medical personnel?

1.3. Research Hypotheses

1. There is no gender equity in the aliteracy level of medical personnel
2. Perception of medical aliteracy has no significant influence on the performance of medical personnel.
3. Medical aliteracy has no significant influence on health sector
4. There is no significant gender difference in the perception of the awareness of medical aliteracy among medical personnel.
5. There is no significant gender difference in the perceived impact of medical aliteracy among health sector.

2. Methods

This study adopts descriptive research design which is correlative in nature, in order to collect the data. The population of this study comprises of senior medical personnel in Akoko South West local government area of Ondo State. For the purpose of this study a total number of 50 medical personnel will be selected randomly. The sample of fifty (50) respondents is considered to be manageable in terms of size, cost and affordability. A purposive random sampling technique will be used in order to select the medical personnel.

This study shall employ primary method of data collection which involves the use of questionnaires to collect data from medical personnel. The questionnaire divided into two sections. Section A will contain the demographic information of the respondents while section B shall contain questions on the medical aliteracy among medical personnel. This study employed content validity. The data of the study will be presented in tables to show the frequency of responses to the questionnaire. A simple percentage will be used to analyzed the data collected to ensure that results arrived at were valid and not out of chance while regression evaluation technique is employ for

testing the hypotheses. The Statistical Package for Social Sciences (SPSS) will be used to carry out the analysis of the research work.

3. Results

The data collected were analyzed utilizing both inferential and descriptive statistics. Frequency and percentage distributions were utilized in analyzing respondent's personal information and chi square statistic was added to answer some of the research questions. The formulated hypotheses were tested using Chi Square statistics and Independent sample T-test. The results are presented in tables below.

3.1. Demographic Information

Table-1. Frequency Distribution showing Respondents' Gender

Gender	Frequency	%
Male	41	82.0
Female	9	18.0
Total	50	100.0

The gender distributions indicated that 82% of the respondents were male, while 18% were females. This implied that majority of the responding senior medical personnel were male, although, both genders were represented within the sample.

Table-2. Frequency Distribution showing Respondents' Area of Specialty

Area of Specialty	Frequency	%
Optometry	3	6.0
Surgery	9	18.0
Pediatrician	4	8.0
General Practitioner	26	52.0
Gynaecology	2	4.0
Orthopedics	1	2.0
Orthodontist	3	6.0
Human Physiology	2	4.0
Total	50	100.0

The distribution of respondents' field of specialization revealed that 6% were optometry, 18% were specialized in surgery, 8% were pediatrician, 52% were general practitioner, 4% were specialized in gynecology, 2% were orthopedics, 6% were in gynecology, 6% were in orthodontist, while 4% were specialized in human physiology

Table-3. Frequency Distribution showing Respondents' Years of Experience

Years of Experience	Frequency	%
Below 5 years	19	38.0
5 - 14 years	28	56.0
15 - 24 years	1	2.0
25 years and above	2	4.0
Total	50	100.0

The analysis of respondents years of working experience revealed that 38% of the respondents had working experience of below 5 years, 56% had experience ranging between 5 and 14 years, 2% had between 15 and 24 years of experience, while 4% had experience of 25 years and above. This proves that the opinions of the sample respondents is bias controlled based on working experience.

Research Question 1: What is the level of aliteracy among the medical personnel?

Table-4. Frequency summary on the level of aliteracy among medical personnel

Questions	Options	Frequency	%
How regular do you receive medical journal?	Monthly	10	20.0
	Annually	39	78.0
	Biannually	1	2.0
	Total	50	100.0
How often do you read medical journal?	Not often	11	22.0
	Often	30	60.0
	Very Often	9	18.0
	Total	50	100.0
Do you have a reading room at home?	No	18	36.0
	Yes	32	64.0
	Total	50	100.0

Table 4 indicated that 20% of the respondents received medical journal on monthly bases, 78% does annually, while 2% does biannually. This implied that most of the respondents received medical journal annually. On the frequency of reading medical journal, it was observed that 22% do not read it often, 60% read it often, while 18% read it very often. This revealed an average extent of reading medical journals. Lastly, it was observed that majority of the respondents (64%) affirmed that they have reading room at home, while 36% said they do not. this implied that most medical personnel do read at home also. This revealed an average extent of engagement in study, thus indicating low aliteracy among medical personnel.

Research Question 2: What is the reading rate among medical personnel?

Table-5. Frequency summary on the reading rate among medical personnel

Questions	Options	Frequency	%
Rank your reading rate	Below average	1	2.0
	Average	36	72.0
	Above average	13	26.0
	Total	50	100.0

The result indicated that 2% of the respondents read below average, 72% read on average, while 26% read above average. This implied that majority of the medical personnel read on an average bases.

Research Question 3: What is the reading preference of medical personnel?

Table-6. Frequency summary on the reading preference of medical personnel

Questions	Options	Frequency	%
When do you like to read?	Early in the morning	10	20.0
	Midnight	13	26.0
	Anytime	27	54.0
	Total	50	100.0
Which area of Medicine would you like to read?	Pharmacology	3	6.0
	Paediatric	3	6.0
	Neurology	1	2.0
	Haematology	2	4.0
	Gynaecology	3	6.0
	Family Medicine	3	6.0
	Obstetric	4	8.0
	Human Physiology	6	12.0
	Surgery trauma	1	2.0
	Orthodontic	3	6.0
	Pathology	6	12.0
	Medical Research	1	2.0
	Optometry	4	8.0
	Surgery	8	16.0
Epidemiology	2	4.0	
Total	50	100.0	

Table 6 indicated that majority of the respondents (54%) affirmed the that they like to read anytime, 26% said they like reading in the midnight, while 20% said early in the morning is when they like reading. This implied that most medical personnel read anytime they have the opportunity to do so. Thus they do not have specified preference time for reading. Further observed were the aspect of medicine that medical personnel like to read and it was noted that the mostly preferred aspect was surgery with 16%. Other preferred aspects were human physiology (12%) and pathology (12%), while several other minor aspects were identified.

Research Question 4: What is the reading interest of medical personnel?**Table-7.** Frequency summary on the reading interest of medical personnel

Questions	Options	Frequency	%
Do you enjoy reading newsletter on medical breakthrough	No	-	-
	Yes	50	100.0
	Total	50	100.0
Do you like to read about other areas of medicine aside your favourite?	No	-	-
	Yes	50	100.0
	Total	50	100.0
What area of medicine interests you?	Surgery	9	18.0
	Family Medicine	1	2.0
	Cardiology	4	8.0
	Epidemiology	1	2.0
	Pathology	2	4.0
	Public Medicine	11	22.0
	Gyneacology	7	14.0
	Human Physiology	2	4.0
	Orthodontist	4	8.0
	Obstetrics	1	2.0
	Medical Investigation	1	2.0
	Pediatric	4	8.0
	Optometry	1	2.0
	Neurology	1	2.0
	Anatomy	1	2.0
Total	50	100.0	

Test on items relating to reading interest of medical personnel indicated that all the respondents confirmed that they enjoy reading newsletter on medical breakthrough. Also, all the respondents confirmed that they like reading other areas of medicine aside their favorites. The test on area of interest indicated that most medical personnel are interested in public medicine (22%). Another other notable area of interest was surgery with 18%. There are other observed areas, but they had very few interested personnel.

Research Question 5: Is there gender equity in the aliteracy level of medical personnel?**Table-8.** Cross tabulation indicating gender equity in the aliteracy level of medical personnel

Items	Response					
			Not Often	Often	Very Often	Total
How often do you read medical journal?	Male	F	10	23	7	40
		%	25.0	57.5	17.5	80.0
	Female	F	1	7	2	10
		%	10.0	70.0	20.0	20.0
Rank your reading rate			Below Average	Average	Above Average	
	Male	F	1	29	10	40
		%	2.5	72.5	25.0	80.0
	Female	F	0	7	3	10
%		0	70.0	30.0	20.0	

Table 8 indicated that most of the male (57.5%) and female (70%) medical personnel often read medical journals, while the least numbers of male (17.5%) read it very often and the least numbers of female (10%) read it not often. Based on the majority, it was indicated that both gender read medical journal often times.

It was also observed that majority of the responding male (72.5%) and female (70%) personnel said they engage in reading averagely, while the least were those that do below average. This implied that both male and female medical personnel had similar reading rate, thus there is no difference in their aliteracy level.

Research Question 6: What are the factors causing medical aliteracy among senior medical personnel?

Table-9. Chi Square summary on statement regarding factors causing medical aliteracy among senior medical personnel

Items	Response						
		SA	A	UN	D	SD	Total
Lack of adequate training of medical personnel lead to medical alitracy	F	11	14	2	18	5	50
	%	22.0	28.0	4.0	36.0	10.0	100.0
Ineffective supervision of medical personnel lead to medical alitracy	F	10	25	4	9	2	50
	%	20.0	50.0	8.0	18.0	4.0	100.0
Low literacy level of patients can lead to medical alitracy	F	9	13	6	20	2	50
	%	18.0	26.0	12.0	40.0	4.0	100.0
Lack of medical personnel-patients engagement can lead to medical alitracy	F	13	27	5	3	2	50
	%	26.0	54.0	10.0	6.0	4.0	100.0
Illiteracy among patients resulted in medical alitracy among doctors	F	4	5	15	22	4	50
	%	8.0	10.0	30.0	44.0	8.0	100.0
Averaged Total	F	10	17	6	14	3	50
	%	20.0	34.0	28.0	6.0	12.0	100.0
Chi Square	X ²				13.000		
	Df				4		
	P				< .05		

The test on statements about the factors causing medical aliteracy among senior medical personnel were presented in Table 6 and it was noted that 50% of the respondents affirmed the statement that lack of adequate training of medical personnel could lead to medical aliteracy, 4% were undecided, while 46% negated it. This implied that to a reasonably extent, training has impact on the occurrence of medical aliteracy among medical personnel. Another identified reason it that ineffective supervision of medical personnel could lead to medical aliteracy. This was such that 70% affirmed it, 8% were undecided, while 22% did not. On a different view, 44% of the respondents affirmed the statement that Low literacy level of patients can lead to medical aliteracy, 12% were undecided, while 44% also did not support the view. This implied that low literacy level of patient is not a major cause, but its impact cannot be eliminated since the response was equivocal. It was also observed that 80% of the respondents affirmed the statement that Lack of medical personnel-patients engagement can lead to medical aliteracy, 10% were undecided, while 10% negated it. Lastly, 52% of the respondents negated the statement that Illiteracy among patients resulted in medical aliteracy among doctors, 30% were undecided, while 18% supported the view. This implied that patients' illiteracy level does not lead to medical aliteracy.

On a summary note it was observed that 54% of the respondents confirmed the identified causes of medical aliteracy, 28% were undecided, while 18% negated the view. This implied that the listed factors were contributors towards health aliteracy.

With X² value of 13.000, df of 4 and p value that was less than 0.05 level of significant, the observed variances in the average distribution was reliable for conclusion. Therefore, it confirmed the above findings.

Research Question 7: What is the awareness level and perception of the impact of medical aliteracy among medical personnel?

Table-10. Chi Square summary on statement regarding the awareness level and perception of the impact of medical aliteracy among medical personnel

Items	Response						
		SA	A	UN	D	SD	Total
Medical aliteracy has influence on health performance of medical personnel	F	30	20	-	-	-	150
	%	60.0	40.0	-	-	-	100.0
Medical aliteracy is prevalent among rural medical personnel	F	11	16	2	15	6	150
	%	22.0	32.0	4.0	30.0	12.0	100.0
Medical aliteracy leads to increase in mortality rate	F	23	21	3	3	-	150
	%	46.0	42.0	6.0	6.0	-	100.0
Averaged Total	F	21	19	2	6	2	150
	%	42.0	38.0	4.0	12.0	4.0	100.0

Answering research question 2 and analyzing the responses on statements regarding the awareness level and perception of the impact of medical aliteracy among medical personnel it was observed that 60% of the respondents strongly agree with the statement that medical aliteracy has effect on health performance of medical personnel, while 40% agreed. This implied that all the respondents were in support of the statement that medical aliteracy has effect on health performance of medical personnel. It was also observed that 54% of the respondents affirmed the statement that medical aliteracy is prevalent among rural medical personnel, while 42% negated it. Lastly, 88% of the respondents supported the statement that Medical aliteracy leads to increase in mortality rate, while 12% was not.

On a conclusive note, it was indicated that 80% of the respondents confirmed the identified outcome of aliteracy on health personnel and it also revealed that senior health personnel have good knowledge of medical aliteracy, 4%

were undecided, while 16% were of the contrary view. This implied that senior health personnel have knowledge of health aliteracy and its implications for the health personnel and the public.

Research Question 8: Was there influence of medical aliteracy on the health sector?

Table-11. Chi Square summary on statement regarding the effect of medical aliteracy on the health sector

Items	Response						
		SA	A	UN	D	SD	Total
Medical aliteracy among medical personnel can result in poor health status of patient	F	27	22	1	-	-	150
	%	54.0	44.0	2.0	-	-	100.0
Medical aliteracy also has a negative effect on doctor patient communication which influence health performance	F	17	27	2	2	2	150
	%	34.0	54.0	4.0	4.0	4.0	100.0
Medical aliteracy can result in high health expenditure	F	14	27	5	4	-	150
	%	28.0	54.0	10.0	8.0	-	100.0
Medical aliteracy is more prevalent among old medical personnel	F	2	8	5	23	12	150
	%	4.0	16.0	10.0	46.0	24.0	100.0
Medical aliteracy is more prevalent among female doctors than male	F	3	6	4	19	18	150
	%	6.0	12.0	8.0	38.0	36.0	100.0
Averaged Total	F	13	18	3	10	6	150
	%	26.0	36.0	6.0	20.0	12.0	100.0

Considering the influence of medical aliteracy on the health sector, it was observed that 98% of the respondents affirmed the statement that medical aliteracy among medical personnel can result in poor health status of patient, while 2% were undecided. It was also indicated that medical aliteracy also has a negative effect on doctor patient communication which influence health performance, 4% were undecided, while 4% did not support the statement. In a similar trend, 82% of the respondents affirmed the statement that medical aliteracy can result in high health expenditure, 10% were undecided, while 8% did not. Majority of the respondents (70%) were not in support of the statement that medical aliteracy is more prevalent among old medical personnel, 10% were undecided, while 20% supported it. This implied that both young and old experienced medical aliteracy. Lastly, 74% of the respondents negated the statement that medical aliteracy is more prevalent among female doctors than male, 8% were undecided, while 18% concur with the statement. This implied that both male and female experience medical aliteracy.

The average summary revealed that 62% of the respondents confirmed the opinion that medical aliteracy affect the health sector negatively, 6% were undecided, while 32% did not support the opinion. This shows that health aliteracy affect the effectiveness of the public health sector.

4. Research Hypothesis

Hypothesis 1: There is no gender equity in the aliteracy level of medical personnel?

Table-12. Chi Square summary on gender equity in the aliteracy level of medical personnel

Items	Response						df	X ²	p
			Not Often	Often	Very Often	Total			
How often do you read medical journal?	Male	F	10	23	7	40	2	1.054	> .05
		%	25.0	57.5	17.5	80.0			
	Female	F	1	7	2	10			
		%	10.0	70.0	20.0	20.0			
Rank your reading rate			Below Average	Average	Above Average				
	Male	F	1	29	10	40	2	.334	> .05
		%	2.5	72.5	25.0	80.0			
	Female	F	0	7	3	10			
%		0	70.0	30.0	20.0				

The result in Table 12 indicated that the X² value of 1.054 and df of 2 revealed a p value that was greater than 0.05 level of significant. This implied that there is no significant difference in how often male medical personnel read medical journal compared to that of females. In a similar trend, the X² value of 0.334 and df of 2 revealed a p value that was greater than .05 level of significant. This implied that the rating of both male and female personnel was similar in terms of their reading.

It could therefore be concluded that there is no significant difference in the aliteracy level of medical personnel on the bases of gender.

Hypothesis 2: Perception of Medical aliteracy has no significant influence on performance of medical personnel**Table-13.** Chi Square summary on statement regarding the awareness level and perception of the impact of medical aliteracy among medical personnel

Items	Response						
		SA	A	UN	D	SD	Total
Health aliteracy and awareness affects the health of medical personnel	F	21	19	2	6	2	150
	%	42.0	38.0	12.0	4.0	4.0	100.0
Chi Square	X ²				34.600		
	Df				4		
	P				< .05		

It was observed that 80% of the respondents confirmed the impact of medical aliteracy and awareness on the performance of medical personnel such that increase level of aliteracy and poor awareness level leads to poor performance of medical personnel. This distribution was confirmed by the X² value of 34.600, df of 4 and p value that was less than 0.05 level of significant. The observed variances in the distribution of the average responses were reliable for conclusion. Therefore, it could be concluded that the perception of medical aliteracy has significant influence on performance of medical personnel. The findings negated the formulated null hypothesis 1 and it was rejected.

Hypothesis 3: Medical aliteracy has no significant influence on the Health sector**Table-14.** Chi Square summary on statement regarding the effect of medical aliteracy on the health sector

Items	Response						
		SA	A	UN	D	SD	Total
Health aliteracy has effect on the health sectors	F	13	18	3	10	6	150
	%	26.0	36.0	6.0	20.0	12.0	100.0
Chi Square	X ²				13.800		
	Df				4		
	P				< .05		

The result in Table 14 revealed that 62% of the respondents confirmed the opinion that medical aliteracy affects the health sector negatively, 6% were undecided, while 32% did not support the opinion. This shows that medicalaliteracy affect the effectiveness of the public health sector. With X² value of 13.800, df of 4 and p value that was less than 0.05 level of significant, the observed variances in the distribution of the average responses was reliable for conclusion. Therefore, medicalaliteracy influences the health sector significantly in such a way that it hinders its efficiency. The result negated the formulated null hypothesis 2 and it was rejected.

Hypothesis 4: There is no significant gender difference in the perception of medical aliteracy among medical personnel**Table-15.** Independent T-test showing gender difference on the perceived awareness of medical aliteracy among on the health sector

	Gender	N	Mean	SD	df	t	P
Awareness of medical aliteracy among medical personnel	Male	41	12.10	1.76	48	-.021	> .05
	Female	9	12.11	1.90			

Table 15 revealed that gender had no significant difference in the perception of the awareness of medical aliteracy among medical personnel [t(48)= -0.021, p > .05]. This implied that male respondents (M=12.10; SD=1.76) do not differ from their female counterparts (M=12.11; Sd=1.90) when compared on the bases of their awareness of medical aliteracy. The result confirmed null hypothesis 3.

Hypothesis 5: There is no significant gender difference in the perceived impact of medical aliteracy in the Health sector**Table-16.** Independent T-test showing gender difference on the perceived impact of medical aliteracy among on the health sector

	Gender	N	Mean	SD	df	t	P
Perceived impact of health aliteracy among on the health sector	Male	41	17.29	2.44	48	1.268	> .05
	Female	9	16.11	2.93			

It was noted that gender had no significant difference in the perceived impact of health aliteracy among on the health sector [t(48)= 1.268, p > .05]. This implied that male respondents (M=17.29; SD=2.44) do not differ from

their female counterparts ($M=16.11$; $SD=2.93$) when compared on perceived impact of health aliteracy among on the health sector. This finding confirmed hypothesis 4, therefore, the hypothesis was accepted.

5. Discussion

The findings agreed with the empirical results of Lipkus, *et al.* [8] who found that the level of aliteracy among the medical personnel was low because many medical personnel were being given adequate training facilities and incentives toward ensuring proper discharge of their duties. As such most of them were highly educated on aliteracy. This is also supported by what Rudd [9] who asserted that very few medical personnel are trained on the medical cost of aliteracy. Medical doctors are therefore encouraged to proceed in writing professional exams for the improvement of their knowledge on health related matters. With empirical evidence stated above, it is clearly seen that aliteracy level is average while their literacy is also average.

The reading rate among medical personnel is averaged. Which implies that most medical practitioners have little reading habit and are not equipped with adequate and updated health related issues. This is also supported by what Fox [10] that “majority of medical personnel lack the willingness to obtain further knowledge on health related issues”. Discussing on the cost of low reading habit among medical practitioners, Coleman, *et al.* [11] asserted that lack of medical training about the relative cost of medical aliteracy contributed to the widening gap in knowledge and skills among medical practitioners.

It is widely believed that the time preference of reading and subject area contributed to high aliteracy level among medical personnel. The findings above revealed that medical personnel have no precise time of reading as majority of them preferred to read at any time. This finding supported the result of Kanj and Mitic [12] whose findings indicated that medical personnel preference of teaching influence their literacy level. It was asserted that majority of medical personnel prefer to read at any time especially when they are less busy which often may not be possible due to their high work load.

This finding was in line with Ali [13] and Ali, *et al.* [14] that a lack of medical and nursing student training about health literacy contributed to this gap in their knowledge and skills as well as their inability to provide high-quality patient-centred care because of poor communication skills.

The finding also agrees with Coleman [7] who found that poor training such as workshop, role plays, videotaped and patients-personnel training engagements are not enough which affect performance of medical personnel.

The study also revealed that low literacy level of patients could lead to medical aliteracy. This finding agreed with the result of Davis, *et al.* [15] who discovered that rate of misunderstanding were higher among patients with marginal and low aliteracy. Also, Lokker, *et al.* [16] found that low numeracy and reading skills of patients are associated with poor health.

It was also found that lack of personnel-patient medical engagement could lead to aliteracy. This result is supported by the finding of Frosch and Elwyn [17] who established that problem of aliteracy, social determinants and health inequalities resulted from lack of patient engagement.

However the study is not in line with Coleman [7] who indicated that gaps still exist in the health professional’s awareness and knowledge of low health literacy in the patient and caregivers, intervention to address low health literacy, and attitudes about patients with low health literacy among nurses, physicians, dentists, physician assistants, and other allied health professionals.

Vermeire, *et al.* [18] found evidence of relationships between low literacy and medical performance. Vermeire, *et al.* [18] found that the menace of medical aliteracy cost an estimated \$ 100 billion annually in the US and accounts for 10% hospital admission.

On the influence of medical aliteracy on health sector performance, Mancuso and Rincon [19] and Schillinger, *et al.* [20] established a direct link between low literacy level and chronic disease control, such as high blood pressure, diabetes and asthma among others which has resulted in high mortality rate.

Findings revealed that Medical aliteracy among medical personnel can result in poor health status of patient. This finding conformed to the results of Baker, *et al.* [21] who found a clear correlation between inadequate health literacy—as measured by reading fluency—and increased mortality rates. It was indicated that about 50 to 80 percent increased mortality risk was associated among people with inadequate health literacy. Also Health care is complex and many patients struggle to communicate and understand health information as well as navigate the healthcare system [22].

It was found that medical aliteracy has negative influence on doctor patient communication which influence health performance which is in line with result of finding corroborate with the findings of DeWalt, *et al.* [23] that patients with low health literacy more often use a passive communication style with their physician, do not engage in shared decision making, and report that interactions with their physician were not helpful or empowering. Also, Howard, *et al.* [24] found that medical professionals do not use recommended techniques to communicate with low health literate patients which result in poor health performance. Also, Rajah, *et al.* [25] found that poor outcomes associated with low health literacy may be caused or exacerbated by inadequacies in both clinician-patient and system-patient communication.

Also, the study found that medical aliteracy has resulted in high expenditure. The result corroborated with the findings of Vernon, *et al.* [26] who established that the cost of low health literacy to the U.S. economy is in the range of \$106 billion to \$238 billion annually and that when one accounts for the future costs of low health literacy that result from current actions (or lack of action), the real present day cost of low health literacy is closer in range to \$1.6 trillion to \$3.6 trillion. Eichler, *et al.* [27] found in their study that the additional costs of limited health literacy ranged from 3 to 5% of the total health care cost per year and at patient level the additional expenditures per year for

each person with limited health literacy as compared to an individual with adequate health literacy range from US \$143 to 7,798.

This finding corroborate with the empirical finding of Toronto and Weatherford [28] who asserted that awareness, knowledge and training about health literacy is important for health professionals to better communicate with and improve the healthcare outcomes of their patients, especially those patients with low health literacy.

This result is in line with the findings of DeWalt, *et al.* [29] and Bosworth [30] who asserted that lower levels of health literacy are associated with poorer global health status, higher rates of hospitalization, decreased use of preventive and early detection procedures (eg, mammography), poorer adherence to medications regimens, poorer disease management (eg, poor glycemic control), and lower levels of knowledge about chronic disease, health outcomes, and health services.

Also Berkman, *et al.* [6] and Benneth, *et al.* [31] found that low health literacy was associated with numerous adverse health outcomes including low medication adherence, increased use of emergency care and increased risk of hospitalization, besides unable to obtain appropriate health services and preventive health screening. In the same vein Eichler, *et al.* [27] documented negative economic impact of low health literacy on both patient and the health system

The above table revealed the test of hypothesis on gender difference on the perceived impact of medical aliteracy among on the health sector and the null hypothesis was accepted which corroborates with the result of Liu, *et al.* [32] who established lack of gender difference on the perceived impact of health aliteracy among on the health sector.

6. Conclusion

Based on the findings of the study it was concluded that medical aliteracy is prevalent among medical personnel and patients and is associated with many poor medical outcomes in the health sector. While the explanatory pathways for relationships between medical aliteracy among medical personnel and sector health performance are complex, many of the poor outcomes associated with medical aliteracy may result from inadequacies in medical personnel-patient communication.

In line with the conclusion, the following recommendations were proposed: Medical literacy training, schemes and programmes should be designed according to the needs of the different medical personnel and should therefore be included in medical professional training programs. Federal government should encourage health literacy by creating awareness centers to promote its study and the adoption of best practices and known interventions that could improve medical literacy. Furthermore, based on the premise that a high level of medical literacy is required to assist medical personnel to manage their own care, and the care of their patients, future research should explore on the subject area in order to improved health literacy amongst medical personnel which could to translates into improved self-care and patient outcomes.

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