

## RISK FACTORS AND SEROPREVALENCE OF DIABETES IN DISTRICT LAKKI MARWAT, KHYBER PAKHTUNKHWA, PAKISTAN

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### ABSTRACT

The diabetes is a chronic metabolic disorder that has emerged as a great socioeconomic burden for the developing world. The figure of individuals with diabetes is growing due to people growth, aging, urbanization, and increasing prevalence of obesity and physical inactivates. Counting the occurrence of diabetes and the amount of individuals pretentious by diabetes. This is a local issue therefore requires native data to develop a real picture of the problem. In this study prevalence of diabetes were noted using self-made proforma and then statistical analysis was preformed using SPSS software for analyzing data. Our results suggest that the prevalence of diabetes were so high without any difference of gender and also the age, Serious

safety measures and actions should be taken by the Government of Pakistan to control the spread of diabetes in this area.

**KEYWORDS:** Diabetes, socioeconomic, proforma, Government of Pakistan.

### INTRODUCTION

Diabetes mellitus which is also known as sugar diabetes. It is a condition in which glucose is not utilized normally by effected body. Harmons produced by pancreas is responsible for glucose controlling in the body. Body cells need insulin to take up glucose for their metabolic activities from blood streams. Insulin is made by pancreas and released into the blood stream, so that body cells can take it and use it during glucose intake. The increasing loss of human

and economy due to diabetes is big threat. Diabetes is not only the cause of increasing effected people at shocking rate but also occurs in people at a very young stage. It is one of the prominent socioeconomic burden for the word especially for the developing countries.<sup>[1,2]</sup>

Diabetes is one of the most serious condition, which have effects on the lives and comfort on human beings worldwide. It has been placed among the top 10 death causing condition in adults and about four million people have died due to diabetes in 2017. About USD 727 billion have been spent on diabetes globally in 2017.<sup>[3]</sup>

Diabetes are categorized in to four main types. Destruction of autoimmune  $\beta$  cells lead to deficiency of insulin causing Type 1 diabetes. Gradually and continuously loss of insulin secretion of  $\beta$  cells is a condition known as Type 2 diabetes. Gestational diabetes is a third type of diabetes caused due to onset pregnancy glucose tolerance disorder and the fourth types is specific types of diabetes which is due to some other causes.<sup>[4,5]</sup> According to International Diabetes Federation (IDF) the prevalence of diabetes in 2019 estimated globally is 463 million people which is 9.3% of the total world population. In 2030 it will be raised to 578 million people which will be 10.2% of the total world population and in 2045 it will be 700 million which will be 10.9% of the total world population. The prevalence of diabetes is 10.8% in urban areas and 7.2% in rural areas. It is 10.4% in high GDP countries and 4.0% in lower GDP countries. About half of the people do not know about their diabetic condition.<sup>[3]</sup>

IDF has placed Pakistan in Middle East and North Africa (MENA) region. Prevalence of diabetes in 2019 in MENA region is 39 million which will be raised to 67 million by 2045.<sup>[6]</sup> National Diabetes Survey of Pakistan were carried out from 1994-1998, according to which prevalence of diabetes was 8.7%<sup>[1]</sup> which raised to 26.3% in 2017.<sup>[6]</sup> Sind has the highest prevalence with 32.3%, Punjab has 30.2, Baluchistan has 29.5 while Khyber Pakhtunkhwa has the lowest prevalence with 13.2%.<sup>[1,6,7]</sup>

To explore the causes of diabetes and its ultimate prevalence in district Lakki Marwat. To highlight the different disadvantages of diabetes with respect to the population in district Lakki Marwat. To estimate the prevalence and risk factors associated with diabetes in district Lakki Marwat. To highlight the impact of health care measurements upon the prevalence of diabetes in district Lakki Marwat, KPK, Pakistan.

## **MATERIAL AND METHODS**

An out-door and clinically survey was conducted during, July 2018 to August 2019, in district hospital, Lakki Marwat. The main objective of this study was to find out the prevalence and risk factor associated with diabetes in district Lakki Marwat. The diabetes patients were observed carefully in district hospital, Lakki Marwat.

### **Proforma**

A set proforma was designed with the help of concerned supervisor and medical doctors. The proforma is designed according to related question such as; demographic variables of the sample respondents, family history of disease, type of diabetes mellitus, medication, complications associated with diabetes, symptoms and target blood sugar level of the sample respondents.

### **Study duration**

The study was conducted from July 2018 to August 2019.

### **Population**

#### **Target Population**

The targeted population was district Lakki Marwat. It was the population from which the samples were collected for the research.

### **Sample size**

A total of 150 patients were analyzed for having diabetes in hospital, Lakki Marwat.

### **Research tools**

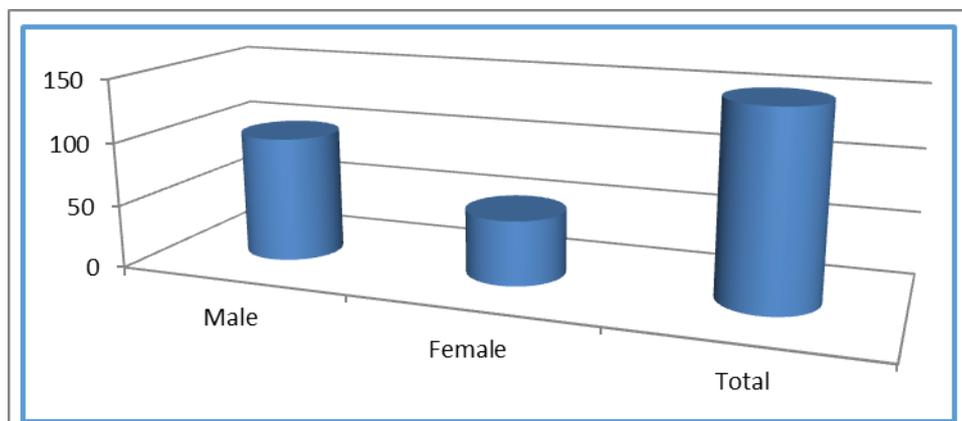
Questionnaire have the questions which were necessary to give answer and related to the corresponding research. It has the questions about the demographic variables of the sample respondents, family history of disease and type of diabetes mellitus, medication, complications associated with diabetes, symptoms and target blood sugar level of the sample respondents.

### **Statistical Analysis**

Data were coded and entered in the computer for analysis using Statistical Package for Social Sciences (SPSS) program version 16.0 was used for analyzing of multi-response data. Descriptive statistics was carried out for all quantitative data.

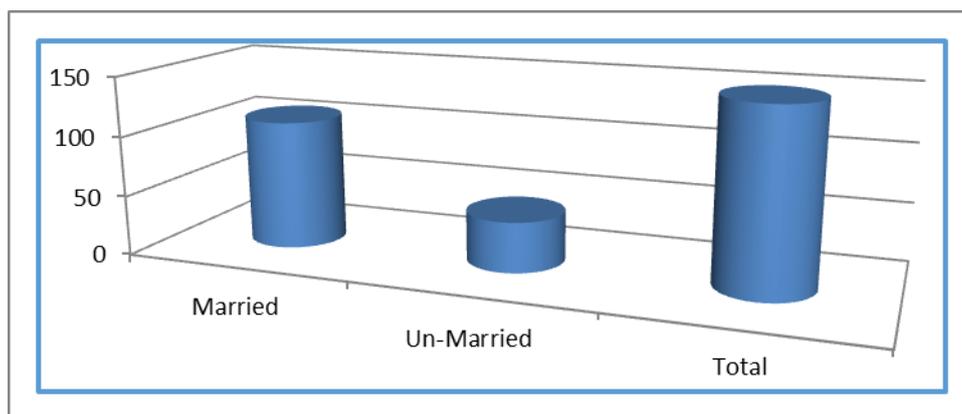
## RESULTS AND DISCUSSION

The figure 1 below shows the frequencies regarding the gender based classification. The current study includes the gender classification on the basis of gender. The male includes in the current research were 99 while the females included in the present study were 51.



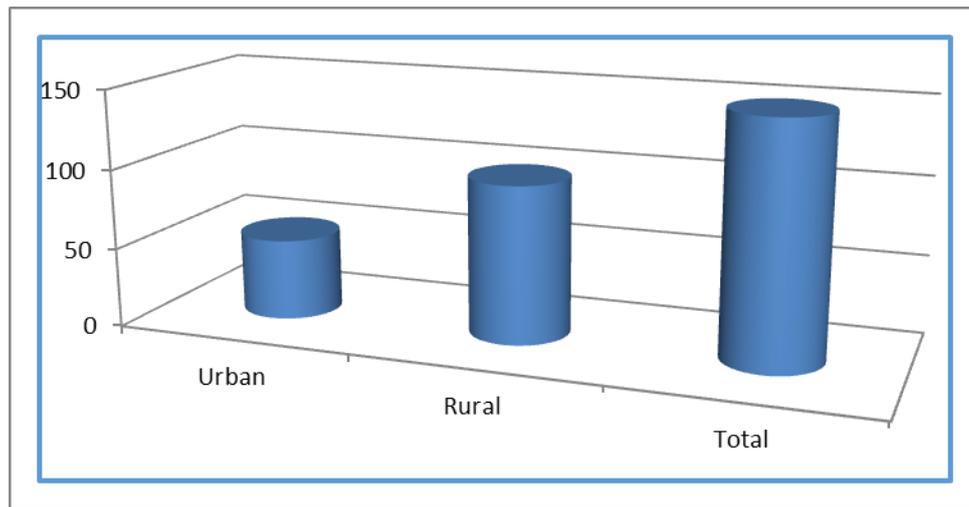
**Figure 1: The gender based classification.**

The graph above shows the frequencies regarding the Marital Status based classification. The current study includes the Marital Status classification on the basis of married and Un-married. The married includes in the current study were 108 while the un-married included in the present study were 42.



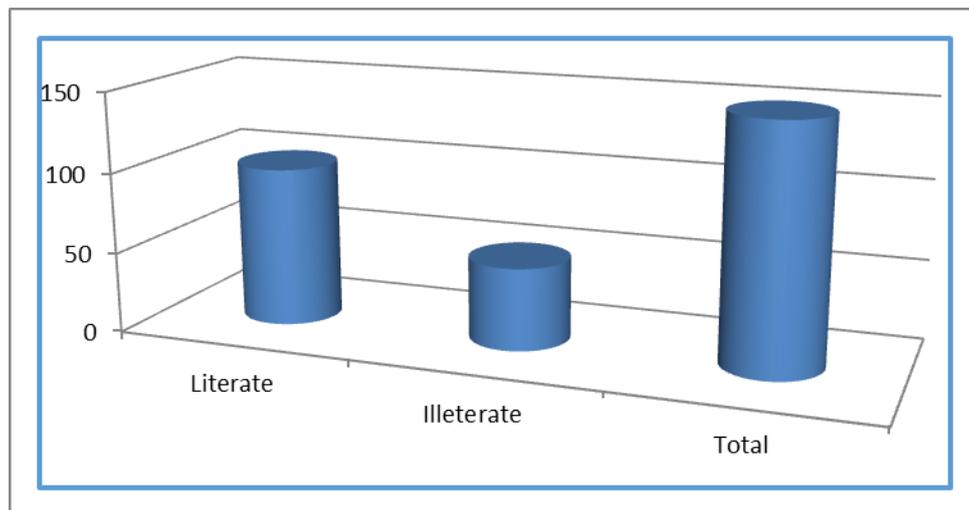
**Figure 2: The marital status based classification.**

The Figure 3 above shows the frequencies regarding the Residence based classification. The current study includes the Residence classification on the basis of urban and rural. The urban includes in the current study were 51 while the rural included in the present study were 99.



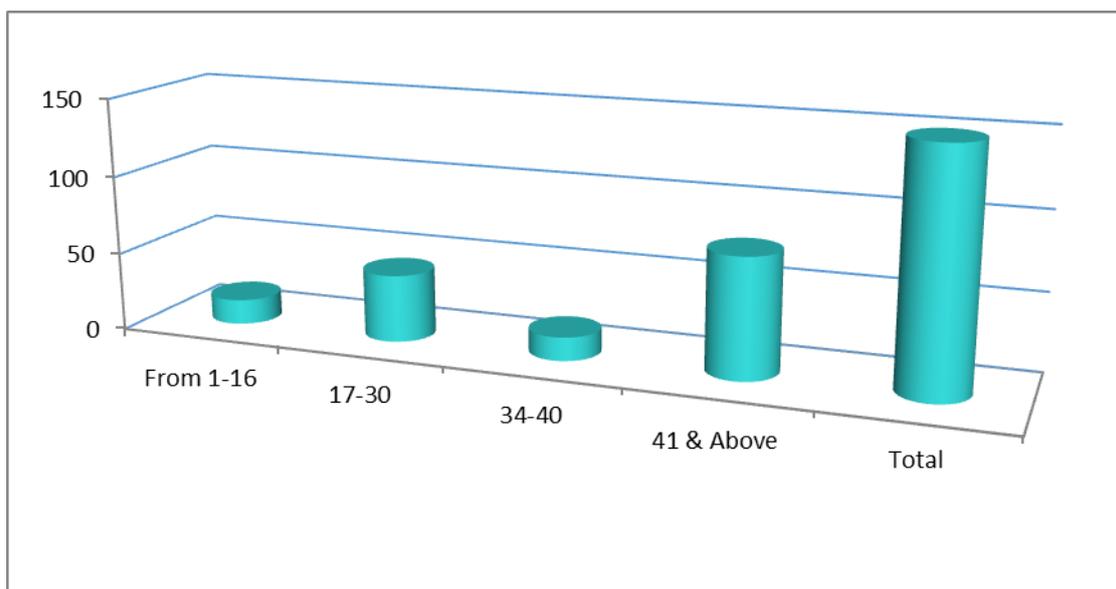
**Figure 3: The residence based classification.**

The Figure 1 above shows the frequencies regarding the education based classification. The current study includes the education classification on the basis of literate and illiterate. The literate includes in the current study were 99 while the illiterate included in the present study were 51.



**Figure 4: The education based classification.**

The figure 5 above shows the frequencies regarding the Age based classification. The current study includes the Age classification on the basis of 1-16, 17-30, 31-40 and 41 & above. The 1-16 includes in the current study were 16, the 17-30 includes in the current study were 43, 31-40 includes in the current study were 15 while the 41 & above included in the present study were 76.



**Figure 5: The age based classification.**

**Table 1: The Family History of Disease.**

		Frequency	%	Valid %	Cumulative %
Valid	Yes	50	33.3	33.3	33.3
	No	100	66.7	66.7	100.0
	Total	150	100.0	100.0	

The above table is about the statement concerning the family history of the disease and shows the frequencies regarding the disease with respect to yes and no. The current study includes the disease classification on the basis of yes and no. The yes includes in the current study were 50 while the no included in the present study were 100.

**Table 2: The types of diabetes.**

		Frequency	%	Valid %	Cumulative %
Valid	Type 1	37	24.7	24.7	24.7
	Type 2	41	27.3	27.3	52.0
	Not Knowing	72	48.0	48.0	100.0
	Total	150	100.0	100.0	

The above table is about the statement concerning the types of the diabetes and shows the frequencies regarding the disease with respect to type 1, type 2 and not knowing. The type 1 includes in the current study were 37 and the type 2 included in the present study were 41 while the not knowing included in the current study were 72.

**Table 3: The classification regarding medication.**

		Frequency	%	Valid %	Cumulative %
Valid	Oral	73	48.7	48.7	48.7
	Injection	77	51.3	51.3	100.0
	Total	150	100.0	100.0	

The above table is about the statement concerning the medication and shows the frequencies regarding the disease with respect to oral and injection. The oral includes in the current study were 73 while the injection included in the present study were 77.

**Table 4: The complications regarding the diabetes.**

Heart Attack					
		Frequency	%	Valid %	Cumulative %
Valid	Yes	56	37.3	37.3	37.3
	No	94	62.7	62.7	100.0
	Total	150	100.0	100.0	

Hepatic Disease					
		Frequency	%	Valid %	Cumulative %
Valid	Yes	64	42.7	42.7	42.7
	No	86	57.3	57.3	100.0
	Total	150	100.0	100.0	

Kidney Problem					
		Frequency	%	Valid %	Cumulative %
Valid	Yes	67	44.7	44.7	44.7
	No	83	55.3	55.3	100.0
	Total	150	100.0	100.0	

The above three tables are regarding the complications associated with the diabetes. The first one is concerned with the Heart attack in which 56 give the response of yes and 94 give the response of no. Similarly, the second table was concerned with the Hepatic disease in which the 64 replied with yes while 86 replied with no. Likewise, the last was concerned with the Kidney problems in which the 67 give the response of yes while the 83 give the responses with no.

**Table 5: The symptoms regarding the diabetes.**

		Frequency	%	Valid %	Cumulative %
Valid	Fatigue	10	6.7	6.7	6.7
	Fever	10	6.7	6.7	27.3
	Joint Pain	21	14.0	14.0	20.7
	Excessive Urination	25	16.7	16.7	44.0
	Weight Loss	16	10.7	10.7	54.7

	Skin Problem	20	13.3	13.3	68.0
	Eye Problem	16	10.7	10.7	78.7
	Sweets	22	14.7	14.7	93.3
	Polydipsia	10	6.7	6.7	100.0
	Total	150	100.0	100.0	

The above table gives the classifications and frequencies regarding the symptoms of the diabetes. It shows that 10 were in response of fatigues, 21 were in response of joint pain, 10 were in response of fever, 25 were in response of excessive urination, 16 were in response of weight loss, 20 were in response of skin problem, 16 were in response of eye problems, 22 were in response of sweets and 10 were in response of polydipsia.

**Table 6: The blood sugar level.**

		Frequency	%	Valid %	Cumulative %
Valid	Fast	87	58.0	58.0	58.0
	Random	63	42.0	42.0	100.0
	Total	150	100.0	100.0	

The above table is about the statement concerning to the blood sugar level and shows the frequencies regarding the disease with respect to fast and random. The fast includes in the current study were 87 while the random included in the present study were 63.

**Table 7: The descriptive statistics.**

	N	Minimum	Maximum	Mean	Std. Deviation
Family History	150	1	2	1.67	.473
Type of Diabetes	150	1	3	2.23	.823
Medication	150	1	2	1.51	.501
Heart Attack	150	1	2	1.63	.485
Hepatic Disease	150	1	2	1.57	.496
Kidney Problem	150	1	2	1.55	.499
Symptoms	150	1	9	5.07	2.396
Blood Sugar Level	150	1	2	1.42	.495
Valid N (listwise)	150				

The above table shows the descriptive statistics regarding all the variables with respect to the minimum and the maximum responses. Total number of respondents included in the current research study was 150.

## DISCUSSIONS

The diabetes is a main health hazard in the world. It has also been increasingly documented as a solemn health hazard in Pakistan. Presently about 7.0 million “diabetic patients” in

Pakistan and this number is growing. According to the World Health Organization estimates, by the year 2025 Pakistan will rank 4<sup>th</sup> from the current 8<sup>th</sup> position in the world rendering to the occurrence of diabetes.<sup>[8]</sup> The growth of tension in diabetic people is inclined by diabetes itself and hypertension has been renowned in from as low as one thirds to more than 3/4 of diabetic populace.<sup>[9]</sup> Previous, the investigators had stated that the occurrence of hypertension among diabetic populace was 50% more than the overall people.<sup>[10]</sup>

A review published freshly, showed with opinion to recognize the occurrence of hypertension and/or fatness amongst diabetic patients across the globe. The researchers noted that the prevalence of hypertension was usually high amongst diabetic patients through the world.<sup>[11]</sup> Most of the studies that were included in the systematic appraisal reported the occurrence of hypertension in excess of 52% and occurrence rates as tall as 70% for hypertension in diabetics were also noted. The prevalence of obesity varied from 35%–52%. The researchers also reported that the prevalence of hypertension among overweight diabetics individuals was 75% and more in readings from Asia. However, a lately available study from India stated a general occurrence of hypertension in 25% of diabetic population. Interestingly, they stated that 52.7% study members were pre-hypertensive. However, the investigators did not describe pre-hypertension.<sup>[12]</sup> Earlier, the Hypertension in Diabetes Reading described that the occurrence of hypertension in diabetes was 40%. As likened to diabetic males (35%), more diabetic females (46%) had hypertension.<sup>[13]</sup>

In order to advance the current status of healthcare system of Pakistan, it is suggested that decision makers at all heights need to assess the difference in health system performance, categorize factors that result it and expressive rules that will attain better belongings in a assortment of places.<sup>[14]</sup>

Another review has delivered info on the occurrence method of the persons distress through diabetes in the adult people of Pakistan and recognized fences to occurrence of diabetes and excellence of lifetime in that region.<sup>[15]</sup> Studies has established that Pakistan health care scheme is incompetent and in order to improve the healthcare method and its efficiency, it would need balanced rules to deliver effectual, actual, satisfactory, cost actual, reasonable and nearby facilities to its people.<sup>[16]</sup>

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