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Research Article

**COUNTERING THE DEFICIENCY OF VITAMIN D (VIT-D)  
AMONG EXPECTING FEMALES AT TERTIARY  
HEALTHCARE FACILITY**<sup>1</sup>Dr Sahar Abid, <sup>2</sup>Dr Hadia Basheer, <sup>3</sup>Dr Ayesha Shafi<sup>1</sup>DHQ Hospital Vehari<sup>2</sup>Nishtar Hospital Multan<sup>3</sup>DHQ Teaching Hospital Sahiwal**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:**

**Background:** Vitamin D receptors and enzymes are present in many cells and tissues of the body. These receptors and enzymes transform vitamin D to its active form. According to the result of many report studies, the prevalence of infectious disorders, cardiovascular disorders and autoimmune disorders, have been reduced due to these vitamins and enzymes. The disorder of osteomalacia and rickets mainly occur due to vitamin D deficiency.

**Objective:** The objective of this study was to check the incidence of shortage of Vitamin D among pregnant females visiting a tertiary care hospital. **Subjects and Methods:** The current research study was conducted at Sir Ganga Ram Hospital, Lahore from October 2017 to November 2018. Total pregnant females enrolled for this study was 108. The selection was made regardless of age or gestational age. The females with chronic renal or liver disorder called asthmatic or diabetes were excluded, who were on antiepileptic drugs or ant tuberculous drugs. A proforma was designed for assemblage of information. SPSS was used for the assessment of data. **Results:** In this study, 108 was the total number of pregnant females. The normal levels of vitamins D with mean level of 15.9Mg/d were noticed in 13(12%) females. However, the females with inadequate vitamin D were 18(16.7%) and 77(71%) females were deficient in vitamin D. The relationship of any particular age gestation ages and parity with vitamin D was not significant statistically. **Conclusion:** it is concluded that all age groups with any gestational ages and parity are suffered from vitamin deficiency is high. The health of mother as well as baby can be effected through it. In Pakistan, there is a requirement of a targeted screening programs in order to identify and manage females with Vitamin D deficiency. Awareness should be created related to the health diet and exposure to sunlight at local and national levels.

**Keywords:** Vitamin D deficiency, Pregnant Woman, Parity

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**INTRODUCTION:**

The strong nature of bones is directly linked with the presence of vitamins D [1,2]. The incidence of fractures and osteoporosis becomes high with the scarcity of vitamin D. It can also cause osteomalacia in adults and rickets in children, when its levels are seriously depleted [3-6]. Receptors of vitamin D are also found in the Placenta. They may be performing various other functions there. The incidence of cancer is also reduced if the amount of vitamin D is sufficient [7-10]. Due to shortage of vitamin D, there is a risk of many disorders. It is illustrated in many study that health of pregnant is effected severely due to shortage of vitamin D and it could cause wheezing in neonates, types 1 diabetes, gestational and preeclampsia diabetes in children and other disorder like autoimmune disorder, diabetes cardiovascular disorders and neurological disorders [11,15,16,17]. From diet, dietary supplement and exposing our skin to sunlight, our body receiver's vitamin D. the main path of synthesis of Vitamin D in community is through ultraviolet B radiation [18]. In liver, vitamin D is converted to 25 hydroxyl vitamin D. the best biomarker of the status of vitamin D is 25 hydroxyl vitamin D. It is because of its longer half-life. [18]. The conversion of 25 hydroxyl vitamin D is carried out in kidney. 1-alpha hydroxylase is responsible for this metabolism. During pregnancy, many other changes occur. In normal pregnancy, from trimester 1st to 3rd, there noticed an increased in amount of serum 1,25 dihydroxy vitamin D. in kidney and placenta the expression of 1 alpha hydroxylase is increased intestinal calcium absorption during pregnancy [19]. All around world, the incidence of deficiency of vitamin D among general community as well as pregnant females is high. It is illustrated by the small studies that there is no accurate estimate to incidence of vitamin D deficiency. But, this deficiency is frequently found in females of Pakistan. The objective of this research study was to check the incidence of shortage of Vitamin D among pregnant females visiting a tertiary care hospital.

**SUBJECTS AND METHODS:**

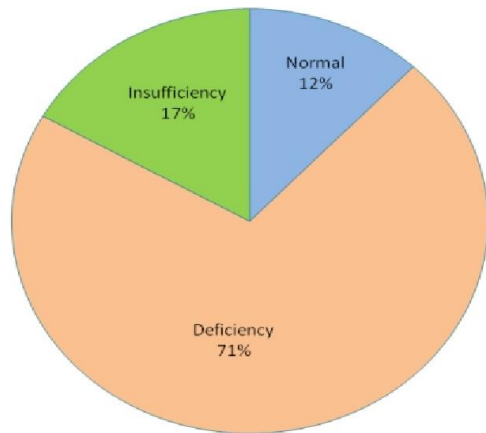
The current research study was conducted at Sir Ganga Ram Hospital, Lahore from October 2017 to November 2018. Total pregnant females enrolled for this study were 108. The selection was made regardless of age or gestational age. These females

belong to the lower and middle socioeconomic station. The females belong to both rural and urban areas. The females of rural area were mostly not reserved. Blood samples for Vitamin D levels were taken from the selected females. Oral agreement was taken from all participant. Institutional ethical committee accepted this agreement. The level of vitamin D are grouped as vitamin D deficiency: <20ng/ml. vitamin D insufficiency 20 to 30 ng/ml. normal vitamin D level:>30ng/ml. the females with chronic renal or liver disorders called asthmatic or diabetics were excluded. Those females were also excluded who were on antiseptic drugs or antituberculous drugs. SPSS was used for data assessment and entry.

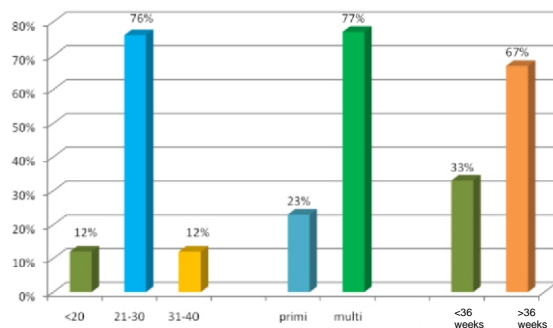
**RESULTS:**

In this study 108 was the total number of pregnant females selected. In order to examine the levels of vitamins D. In these females their blood sample was collected. The normal level of vitamin D were noticed in B (12%) females. However, the females with inadequate vitamin D were 18(16.7%) and 77(71%) females were deficiency in vitamin D. the mean age of selected females was 25-4 years. In the age bracket of <20, the number of female were 13(12%) of these, the female having the normal levels of vitamin D were 3(23%) and 10 (76.9%) females were found in the age bracket of 21 and 30 years. Of these, normal vitamin D deficiency was observed in 73(89%). 13(12%) females were found with age between 31 to 40 years. As far as gestational age is concerned, the number of female who were at > 36 weeks and < 36 weeks were 72 and 36 respectively, with the mean of 32.72 weeks. In the females who were having vitamins D deficiency and normal level of vitamin D was observed. No valuable dissimilarity was observed females were primigravida, out of total 108 pregnant females of these normal levels of vitamin D were noticed in 3(12%) females and vitamin D deficiency was found in 22(88%) females 83(77%) females were multigravidas. Of these normal levels and vitamin D deficiency were noticed in 10(12%) and 73(88%) females respectively. No valuable dissimilarity was observed (p=0-9)

**Figure I: Vitamin D Status of Pregnant Women**



**Figure II: Distribution of age, Gravida & Gestational age among study subjects**



### DISCUSSION:

Our study aimed at to estimate the vitamin D deficiency in pregnant females and its associated complexities. In current study, 88.9% was the incidence of vitamin D deficiency which is high. These results are similar with the study of Hossain N, in which 89% was the prevalence rate of vitamin D deficiency [20]. In the population of Karachi, Kanez Zahra Naqvi observed the incidence rate of 69.9% related to deficiency of vitamin D [19].

Robert J Scroth organized a study in which reviews of various studies were mentioned. This study illustrated that at delivery in Pakistan, in Addis Ababa in Ethiopia and during summer in Delhi, the levels of vitamins D less than 25nmol/L were observed in large number of females [21]. In our study, it is observed that the percentage of females who were deficient in vitamin D and severely deficient in 89% and 71% respectively. It is noticed that all the age groups and all gravida were found with deficiency of vitamin D. The area receives most of the sunlight all the years still the level of vitamin D deficiency are high in this. Area, this may be due to the fact that diet of these people does not

contain vitamin D and Calcium. Also their exposures to sunlight is low. Skin of most of people of this area is dark due to which ultraviolet B radiation, there is need to take a sensible step [22]. The management of vitamin D deficiency among females is not explained in the past published guideline [18].

### CONCLUSION:

It is concluded from our result that the incidence of vitamin D deficiency in females visiting territory case hospital is high. The time of exposure to the sunshine should be at least 20 minutes daily between 10am to 3 pm. Face, neck and arm should not be covered during this exposure. At local and national levels, programs that create awareness should be started. In Pakistan, there is a required of a targeting screening programmers in order to identify and manage females with vitamin D deficiency. The health of a mother as well as baby can be effected through the deficiency of vitamin D. so in order to alert health policy, there is a need of many supplement titian clinical attempts.

### REFERENCES

1. Valimaki VV, Alftan H, Lehmuskallio E, Loyttyniemi E, Sahi T, et al. Vitamin D status as a determinant of peak bone mass in young Finnish men. *J Clin Endocrinol Metab* 2004;89: 76-80.
2. Ooms ME, Roos JC, Bezemer PD, van der Vijgh WJ, Bouter LM, et al. Prevention of bone loss by vitamin D supplementation in elderly women: a randomized double-blind trial. *J Clin Endocrinol Metab* 1995; 80: 1052-1058.
3. Lips P, Van Schoor NM. The effect of vitamin D on bone and osteoporosis. *Best Pract Res Clin Endocrinol Metab* 2011; 25: 585-591.
4. Jackson C, Gaugris S, Sen SS, Hosking D. The effect of cholecalciferol (vitamin D3) on the risk of fall and fracture: a meta-analysis. *QJM* 2007;100: 185-192.
5. Pettifor JM, Prentice A. The role of vitamin D in paediatric bone health. *Best Pract Res Clin Endocrinol Metab* 2011; 25: 573-584.
6. Bhan A, Rao AD, Rao DS. Osteomalacia as a result of vitamin D deficiency. *Endocrinol Metab Clin North Am* 2010; 39: 321-31.
7. Gorham ED, Garland CF, Garland FC, Grant WB, Mohr SB et al. Optimal vitamin D status for colorectal cancer prevention: a quantitative meta analysis. *Am J Prev Med* 2007; 32: 210-216.
8. Garland CF, Gorham ED, Mohr SB, Grant WB, Giovannucci EL et al. Vitamin D and prevention of breast cancer: pooled analysis. *J Steroid Biochem Mol Biol* 2007; 103: 708-711.

9. Lappe JM, Travers-Gustafson D, Davies KM, Recker RR, Heaney RP. Vitamin D and calcium supplementation reduces cancer risk: results of a randomized trial. *Am J Clin Nutr* 2007; 85: 1586-1591.
10. Grant WB, Garland CF. Evidence supporting the role of vitamin D in reducing the risk of cancer. *J Intern Med* 2002;252: 178-179.
11. Dobnig H, Pilz S, Scharnagl H, Renner W, Seelhorst U. Independent association of low serum 25-hydroxyvitamin d and 1,25-dihydroxyvitamin d levels with all-cause and cardiovascular mortality. *Arch Intern Med* 2008; 168: 1340-1349.
12. Zittermann A. Vitamin D in preventive medicine: are we ignoring the evidence? *Br J Nutr* 2003; 89: 552-572.
13. Holick MF. Sunlight and vitamin D for bone health and prevention of autoimmune diseases, cancers, and cardiovascular disease. *Am J Clin Nutr* 2004; 80: 1678-1688.
14. Martini LA, Wood RJ. Vitamin D status and the metabolic syndrome. *Nutr Rev* 2004; 64: 479-486.
15. Dror DK. Vitamin D status during pregnancy: maternal, fetal, and postnatal outcomes. *Curr Opin Obstet Gynecol* 2011; 23: 422-426.
16. Hensel KJ, Randis TM, Gelber SE, Ratner AJ.
17. Holick MF. Vitamin D deficiency. *New Engl J Med* 2007; 357: 266-281.
18. Holick MF. Vitamin D deficiency. *New Engl J Med* 2007; 357: 266-281.
19. Kaniz Zahra Naqvi,S.Tahir Ali,Savita Thontia, Madiha. Prevalence of vitamin D deficiency in pregnant population at term attending a tertiary care Hospital Karachi, Pakistan. *Pak J Surg* 2012;28(2):122125.
21. Robert J Scroth, Christopher LB Lavelle, Michael EK Moffatt. A review of vitamin D deficiency during pregnancy: Who is affected? *International Journal of Circumpolar Health* 2005; 64:(2)112-120
22. Stefanie Vandevijvere, Sihame Amsalkhir, Herman Van Oyen, Rodrigo Moreno-Reyes. High Prevalence of Vitamin D Deficiency in Pregnant Women: A National Cross-Sectional Survey. *PLoSONE* 2012; 7(8): e43868.doi: 10.1371/journal.pone.0043868