

# Original Research Article

Assess the Quality of life amongst Antenatal Mothers with Gestational Diabetes Mellitus in a selected Districts, Tamil Nadu, India.

Running title: Quality of life amongst Antenatal Mothers with Gestational Diabetes Mellitus

## ABSTRACT

**Background:** Gestational diabetes Mellitus is defined as the diabetes diagnosed within the second or third trimester of pregnancy. Gestational Diabetes Mellitus is one of the most frequent metabolic diseases during pregnancy. It approximately affects 7% (range: 2-18%) of all pregnancies. This clinical condition potentially affects not only negative medical outcomes but also the mental state status with additional adverse consequences on psychological well-being and Quality of Life. The **Objectives** were to assess the quality of life amongst antenatal mothers with Gestational Diabetes Mellitus and to associate the quality of life amongst antenatal mothers with the selected demographic variable. **Methods:** The descriptive research design was used in this study. The convenient Sample (N=30) was used to assess the Quality of Life Scale among antenatal mothers with the Gestational Mothers. The data regarding demographic variables like Age, Income, Occupation, Education and Obstetric Variables like past obstetrical complications, Gravid, Week of Gestation. The result showed that 30 Antenatal Mothers with Gestational Diabetes was participated in this study and they were assessed by Modified Quality of Life Scale (WHOQOL – BREF) which includes physical, psychological and social relationships domains are rated on 5 points Likert Scale to determine Score. **Conclusion:** The result shows that the level of Quality of Life Scale of Antenatal Mothers with Gestational Diabetes Mellitus (N=30) 12 of them have Moderate Quality of Life, 11 of them have Adequate Quality of Life and 07 of them have Inadequate Quality of Life. And there is Significant Association of demographic variables of age, except age other demographic and Obstetrical variables are Not Significant and ( $\chi^2 - 56.16, P = >0.05$ ).

**Key words:** Quality of life, Gestational diabetes, Antenatal mothers.

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## INTRODUCTION:

Gestational diabetes Mellitus is defined as the diabetes diagnosed within the second or third trimester of pregnancy. Gestational Diabetes Mellitus is one of the most frequent metabolic diseases during pregnancy. It approximately affects 7% (range: 2-18%) of all pregnancies. This clinical condition potentially affects not only negative medical outcomes but also the mental state status with additional adverse consequences on psychological well-being and Quality of Life. (Daniela Marchetti, Danilo Carrozzino and Ester Vita colonna)<sup>[1]</sup> Gestational Diabetes Mellitus is defined because the “degree of carbohydrate intolerance with onset or recognized first during pregnancy”. Age of mother, socioeconomic status and ethnicity are key correlates of Gestational Diabetes Mellitus. It refers to “Carbohydrate intolerance leading to hyperglycaemia of variable severity with onset or 1st recognition throughout pregnancy”. Maternal hyperglycaemia may cause fetal side effects which associated with this carbohydrate disorder, such as foetal macrosomia, perinatal mortality, caesarean delivery, and preeclampsia. Later in life, this affected community tends to suffer from more complications, such as type 2 diabetes mellitus and obesity, however. To avoid such health problems early diagnosis of Gestational Diabetes Mellitus is important. (Crowther CA, Hiller JE 2005)<sup>[2]</sup> The prevalence of Gestational Diabetes Mellitus in United Kingdom was 5%. Moreover Gestational Diabetes Mellitus complicated about 4-14%

pregnancies in United states of America. The trend of a Gestational Diabetes Mellitus is so increased markedly in Southeast Asian countries during the last two decades. According to national obstetrics registry. Malaysia report of 2009, prevalence of Gestational Diabetes Mellitus is 11.1% in Malaysia. [Zahid Hussain, Zuraidah Mohd Yusoff, Syed Azhar Sulaiman, June 2014]<sup>[3]</sup> Recently, Prevalence of GDM was found to be 18% in HAPO (hyperglycaemia and adverse pregnancy outcome) study. World Health Organization estimated that prevalence of Gestational Diabetes Mellitus in India was about 40.9 million in 2009 & is expected to rise to 69.9 million by 2025. Thus making it an important public health problem in India (D. Lakshmi, 2018)<sup>[4]</sup> Gestational Diabetes Mellitus is any degree of hyperglycaemia that is recognized for the first time during pregnancy. This statement includes cases of undiagnosed type 2 diabetes (T2 Diabetes Mellitus) identified early in the pregnancy and true Gestational Diabetes Mellitus which develop later. Gestational Diabetes Mellitus constitutes a greater impact on diabetes epidemic because it carries a significant risk of developing T2DM to the mother and foetus later in life. And it also affect the Quality of life in related to Gestational Diabetes Mellitus. (Abdel Hameed Mirghani Dirar and John Doupis 2017)<sup>[5]</sup>. The Objectives were to assess the quality of life amongst antenatal mothers with Gestational Diabetes Mellitus and to associate the quality of life amongst antenatal mothers with the selected demographic variable.

### MATERIALS AND METHODS:

Quantitative descriptive research approach was used to assess the quality of life amongst antenatal mothers with gestational diabetes mellitus. The study was carried out on the antenatal mothers who are subjected to Gestational Diabetes mellitus in selected districts, Tamil Nadu, India. The population comprises of antenatal mothers with gestational diabetes mellitus in the selected districts, Tamil Nadu, India. Sample is a representative unit of a target population, which is to be worked upon by the researchers during their study. In other words sample consists of subsets of units which comprise the population selected by the researcher to participate in the research project. The sample in the present study was the antenatal mothers with gestational diabetes mellitus who fulfills the inclusion criteria of Antenatal mothers who are diagnosed with Gestational Diabetes Mellitus and who are able to write and read in Tamil. Sample Size: Sample size  $n = \frac{Np(1-p)}{[(d^2/Z^2)(N-1) + p(1-p)]}$  Confidence Level: 95% Margin of Error: 5% Population: 50 Sample size: 60. Organization and Presentation of Data: The data gathered was tabulated, analyzed and interpreted using both descriptive and inferential statistics. Based on the objectives collected data was presented under the following headings.

Section – 1: Describe of demographic variables of Antenatal Mothers with Gestational Diabetes Mellitus.

Section – 2: To Assess the knowledge of Antenatal Mothers with Gestational Diabetes Mellitus regarding Quality of Life.

Section – 3: To identify the Association of level of knowledge of Antenatal Mothers with Gestational Diabetes Mellitus regarding Quality of Life in the selected demographic and obstetrical variables.

### RESULTS AND DISCUSSION:

The majority of frequency and percentage distribution of samples with reference to age for the total sample of N=30 are from the age group of 22-25 years of antenatal mothers with gestational diabetes mellitus about 36.6% and 33.3% of the samples from the age group 26-29 years and about 30% of the antenatal mothers with gestational diabetes from the age group of 8-21 years. The sample size was (N=30) from this majority 30% (09) of them have their income as 13,161-19,758, 20% (06) of them have their income as  $\geq 52,734$ , 16.6% (05) of them have their income as 2,641-7,886, 6.6% (02) of them have their income 26,355-52,733, 10% (03) of them have their income 19,759-26,354, 3.3% (01) of them have their income 7,887-13,160. Majority 40% of Antenatal Mothers with gestational diabetes are graduate, 36.6% (11) of Antenatal Mothers with gestational diabetes had secondary educations, and 16.6% (05) of Antenatal Mothers with gestational diabetes had primary education, whereas 6.6% (02) of Antenatal Mothers with gestational diabetes are illiterate. The Majority of the Antenatal mothers with gestational diabetes were private employee and nearly 6.6% of the Antenatal mothers with gestational diabetes were government employee. Majority of antenatal mothers (N= 10, 33.3%) are having the gestational diabetes in

the 8<sup>th</sup> month of gestation and 7<sup>th</sup> month (N-09, 30%) of gestation whereas 20% of them are in the 6<sup>th</sup> month and nearly 16.6% of them are in the 9<sup>th</sup> month. Majority 76.6% (23) of the sample were belongs to PrimiGravida and 23.3% (07) of the sample were belongs to Multi Gravida. Majority of them had nil past obstetrical complication but 6.6% (02) of them had pregnancy induced hypertension and nearly 16.6% (05) of them had thyroid. In this sample about 23.3% (7) of the antenatal mothers with gestational diabetes had inadequate quality of life whereas 40% (12) of the antenatal mothers with gestational diabetes had moderate quality of life and nearly 36.6% (11) of the antenatal mothers with gestational diabetes had adequate quality of life. Demographic Variable like Age had association with the Quality of life among antenatal mothers with gestational diabetes  $X^2$  Value = 14.688 ( $p < 0.05$ ) All the other demographic and obstetrical variables such as income, education, occupation, week of gestation, gravida and past obstetrical complications had no association with the Quality of Life.

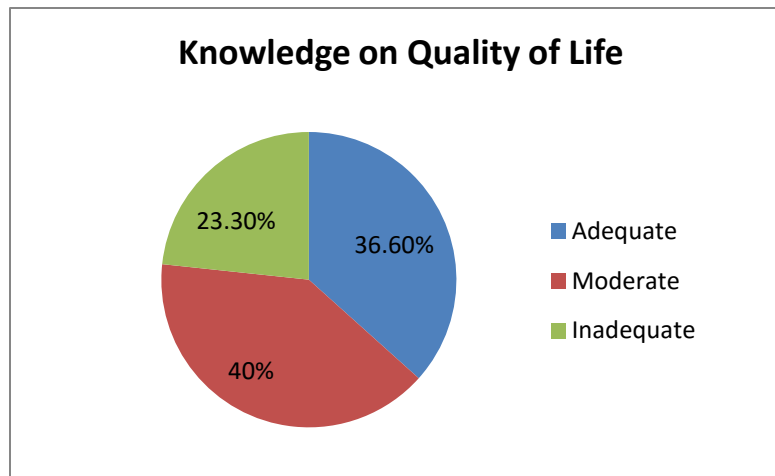
UNDER PEER REVIEW

Table 1: The baseline demographic datas of the Antenatal mother with gestational diabetes

S. No	Characteristics		No of Sample	Knowledge			Chi Square	p Value
				In Adequate	Moderate	Adequate		
1.	Age	18-21Years	09	4	5	0	14.668	Df-6 0.023 (S)
		22-25Years	11	2	6	3		
		26-29Years	10	1	1	8		
		Above 30 Years	0	0	0	0		
2.	Income	≥52,734	06	1	2	3	10.129	Df-12 0.604 (NS)
		26,355-52,733	02	1	0	1		
		19,759-26,354	03	1	1	1		
		13,161-19,758	09	2	4	3		
		7,887-13,60	01	0	1	0		
		2,641-7,886	05	1	4	0		
≤2,640	04	0	1	3				
3.	Education	Primary	05	0	3	2	5.996	Df-6 0.423 (NS)
		Secondary	11	2	6	3		
		Graduate	12	5	6	1		
		Illiterate	02	0	1	1		
4.	Occupation	Private	13	3	6	4	1.912	Df-6 0.927 (NS)
		Self	05	1	2	2		
		Government	02	1	1	0		
		Housewife	10	3	3	4		
5.	Week of Gestation	6 <sup>th</sup> Month	06	0	4	2	8.666	Df-6 0.193 (NS)
		7 <sup>th</sup> Month	09	1	4	4		
		8 <sup>th</sup> Month	10	5	2	3		
		9 <sup>th</sup> Month	05	1	1	3		
6.	Gravid	Primi Gravid	23	6	10	7	1.662	Df-2 0.435 (NS)
		Multi Gravid	07	1	2	4		
7.	Past Obstetrical Complications	Thyroid	05	2	2	1	5.407	Df-4 0.248 (NS)
		Hypertension	02	0	0	2		
		Nil	23	6	11	6		

Significant at p <0.05 Ns – Not Significant

**Figure 1: Percentage Distribution of Level of Knowledge on Quality of Life among Antenatal Mothers with Gestational Diabetes.**



Pie diagram shows that majority of the sample were moderate quality of life, whereas 36.6% of the sample were adequate quality of life and nearly 23.3% of the antenatal mothers with gestational diabetes were inadequate quality of life.

**Conclusion:** This study was carried out to assess the Quality of Life amongst Antenatal Mothers with Gestational Diabetes. The study shows that majority of the antenatal mothers with gestational diabetes had Moderate Quality of Life. This study also indicates that quality of life had significant association with Age. But the quality of life is not significantly associated with the demographic variables like Income, Education, occupational status and also it is not associated with obstetrical variables.

Funding: Self

Conflicts of interest: Nil

Ethical Consideration: The study was approved by the institutional Human ethics committee.

#### References:

1. Marchetti D, Carrozzino D, Fraticelli F, Fulcheri M, Vitacolonna E.2017 Quality of life in women with gestational diabetes mellitus: a systematic review. *Journal of diabetes research*.Oct 2017.
2. Crowther CA, Hiller JE, Moss JR et al.2005 For ACHOIS,Trial Group Effect of treatment of Gestational Diabetes Mellitus on pregnancy Outcomes. 352(24)
3. Hussain Z, Yusoff ZM, Sulaiman SA.2014, Gestational diabetes mellitus: Pilot study on patient's related aspects. *Archives of Pharmacy Practice* Vol. 2014 Apr 1:5(2).
4. Lakshmi D, Felix AJ, Devi R, Manobharathi M.2018, Study on knowledge about gestational diabetes mellitus and its risk factors among antenatal mothers attending care, urban Chidambaram. *International Journal of Community Medicine and Public Health*.2018 Oct;5(10):4388
5. Cheung KW, Wong SF.2012 Gestational diabetes mellitus update and review of literature. *Reproductive System & Sexual Disorders*. 2012.
6. Iwanowicz-Palus G, Zarajczyk M, Pieta B, Bień A. 2019 Quality of life, social support, acceptance of illness, and self-efficacy among pregnant women with hyperglycaemia. *International Journal of Environmental Research and Public Health*. 2019 Jan16 (20):3941.
7. DirarAM,Doupis J.2017, Gestational diabetes from A to Z. *World journal of diabetes*. 2017 Dec 15; 8 (12):489.
8. Cheung KW, Wong SF.2012, Gestational diabetes mellitus update and review of literature. *Reproductive System & Sexual Disorders*. 2012.

9. Marchetti D, Carrozzino D, Fraticelli F, Fulcheri M, Vitacolonna E.2017, Quality of life in women with gestational diabetes mellitus: a systematic review. *Journal of diabetes research*. 2017 Oct; 2017.
10. Skevington SM.1999, Measuring quality of life in Britain: introducing the WHOQOL-100. *Journal of psychosomatic research*. 1999 Nov 1;47(5):449-59.
11. Robin Varghese, Binny Thomas , Dr. Moza Al Hail, Dr. Abdul Rauf, Dr. Mona Al Sadi, Dr. Ayesha Al Sualiti, VirendraYadav 2012, "The Prevalence, Risk Factors, Maternal and Fetal outcomes in Gestational Diabetes Mellitus" *Int. J. Drug Dev. &Res.*,July-September 2012, 4(3): 356-368.
12. Nielsen KK, Rheinlander T, Kapur A, Damm P, Seshiah V, Bygbjerg IC.2017, Factors influencing timely initiation and completion of gestational diabetes mellitus screening and diagnosis-a qualitative study from Tamil Nadu, India. *BMC pregnancy and childbirth*. 2017 Dec 1; 17(1):255.
13. Morampudi S, Balasubramanian G, Gowda A, Zomorodi B, Patil AS.2017 The challenges and recommendations for gestational diabetes mellitus care in India: A Review. *Frontiers in endocrinology*. 2017 Mar 24; 8:56.
14. Pantartzis KA, Manolopoulos PP, Paschou SA, Kazakos K, Kotsa K, Goulis DG.2019 Gestational diabetes mellitus and quality of life during the third trimester of pregnancy. *Quality of Life Research*. 2019 May 15; 28(5):1349-54.
15. Marchetti D, Carrozzino D, Fraticelli F, Fulcheri M, Vitacolonna E.2017, Quality of life in women with gestational diabetes mellitus: a systematic review. *Journal of diabetes research*. 2017 Oct.
16. Larrabure-Torrealva GT, Martinez S, Luque-Fernandez MA, Sanchez SE, MascaroPA, Ingar H, astillo W, Zumaeta R, Grande M, Motta V, Pacora P. 2018,Prevalence and riskfactors of gestational diabetes mellitus: findings from a universal screening feasibility program in Lima, Peru. *BMC pregnancy and childbirth*. 2018 Dec 1; 18 (1):303.
17. World Health Organization. 1997,Measuring quality of life: The World Health Organization quality of life instruments (the WHOQOL-100 and the WHOQOL-BREF).WHOQOL-measuring quality of life. .
18. D.Lakshmi, A John William Felix, R.Devi, M.Manobharathi (2018) knowledge about among antenatal mothers attending care urban Chidambaram its community med publishhealth 2018:5 :4388-92.