Worry, Fear Or Attention? Is The Gen Z Getting Metabolically Older Prematurely Due To Obesity?

Radhika Shah , Mutaz Kanani, Sushilkumar Kharat , Poonam Shah, Shashank Shah ,
Laparo Obeso Centre , India

Ms.Radhika Milind Shah

Chief Bariatric Nutritionist at Laparo Obeso Centre
Visiting Bariatric Nutritionist at Lilavati and Hinduja Healthcare Surgicals, Mumbai.
Registered Dietician & Clinical Nutritionist

Fellowship AZ SINT JAN HOSPITAL, BELGIUM(Europe): In "ADVANCED BARIATRIC NUTRITION"

Examiner and Moderator for Nutrition and Food science : D.Y Patil Nursing College
Membership: Indian Dietetic Association
Organizing Committee Member : B.E.S.T Metasurg 2018 , India.
Organizing Secretary: Nutribolism 2020 -21
Mentor and Guide for internship program for SNDT , Pune

FACULTY:

- **Boston University** School of Medicine Bariatric Course
- CEMAST Surgeon training Program
- STRYKER – S to S training program
- Invited as faculty for Asia Pacific Metabolic And Bariatric Surgery Society Congress 2016, **Malaysia**
- Bariatric & Endoscopy Surgery Trends (B.E.S.T 2018), **Belgium Europe**
- **IFSO APC 2022 Philippines**
- Presenter :Paper Presentation in International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) world congress ,**LONDON**

Paper presentation in IFSO APC 2022 Philippines
Faculty : IFSO world congress 2023 , Naples
Faculty ASMBS , USA ,2023
Faculty BEST Belgium 2023
Faculty international Bariatric surgery & dietetics conference : Istanbul Turkey 2024

I have no potential conflict of interest to report

Gen Z also known as Zoomers

Generation	Born	Current Age
Gen Z	1997 – 2012	**12 – 27**

FUTURE GENERATION

- **Impacted by influences of earlier 2 generations**
- **Epigenetics , environment factors as well as intra uterine health.**

- **There are several indications that millennials are more physically active than members of Gen Z**
- **Experts with the CDC believe the number of young people under the age of 20 with type 2 diabetes is likely to increase more rapidly in future decades**
- **More than half of Gen Z adults – about 56% of Americans ages 18 to 25 – are overweight or obese**
- **According to a 2022 McKinsey & Company insight, Generation Z will account for a quarter of the population of the Asia-Pacific region by 2025, and possess a global spending power of approximately US$140bn by 2030**
- **According to Nasscom Report (2022) these younger generations made up 52% of India's population, surpassing the global average of 47%.**

STUDY DESIGN

Objective:

To study the **Metabolic And Physical Health And Correlation Between Demographic, Anthropometric And Biochemical Parameters** in the Gen Z population with moderate to severe obesity.

FIRST SUCH STUDY FROM ASIA

Methods:

- **Prospective study**
- **184** patients aged between
- 12-27 years old,
- **89 males and 95 females,**
- **Grade of obesity ≥ I**,
- Visiting a single bariatric centre **between 2015 and 2023**
- Statistically analysis using SPSS version29:0
- Statistically significant ($p<0.05$) findings were subjected to sub-group corelation.

DEMOGRAPHIC

Age_Group			
		Frequency	Valid Percent
Valid	< 15	15	8.2
	15 - 18	57	31
	> 18	112	60.9
	Total	184	100

Gender			
		Frequency	Valid Percent
Valid	Male	89	48.4
	Female	95	51.6
	Total	184	100

BMI_Group			
		Frequency	Valid Percent
Valid	< 32	9	4.9
	32 - 35	21	11.4
	36 - 40	48	26.1
	41 - 50	**86**	**46.7**
	> 50	**20**	**10.9**
	Total	184	100

BIOCHEMICAL VALUES AND DEMOGRAPHY

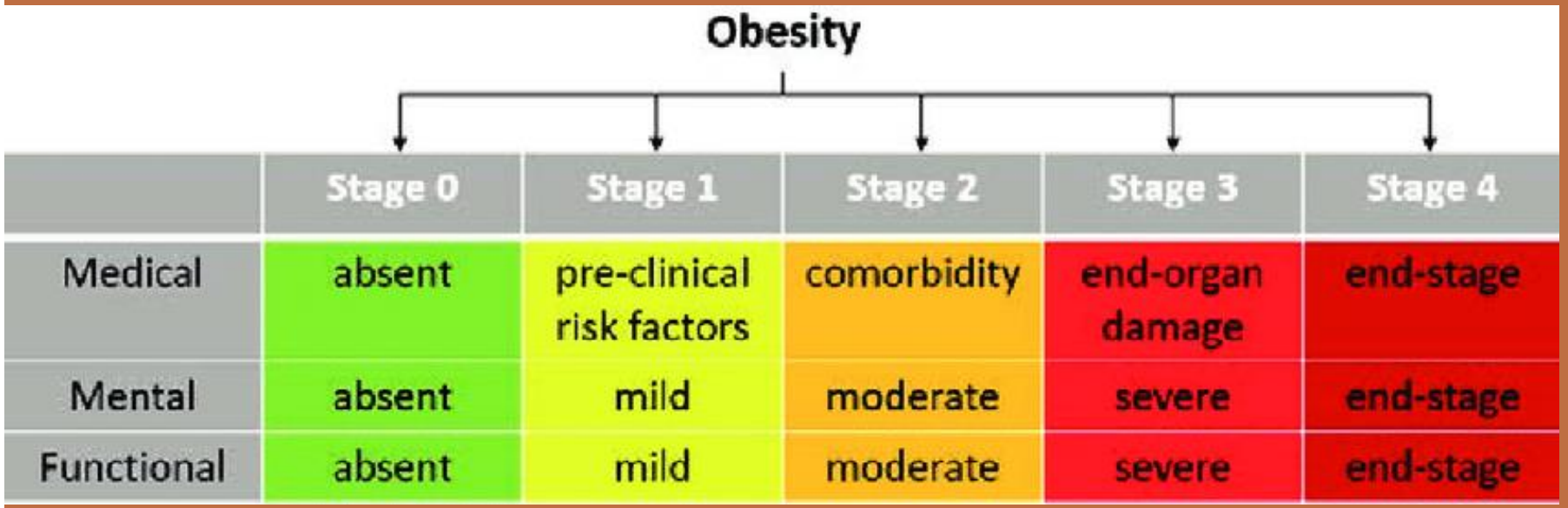
MEAN	
BMI	41.7 ±7.3 kg/m^2
HbA1c	6.0 ±1.3 %
Insulin levels	127 ± 82.6 mlu/ml,
Vitamin B12	229.9 ± 129.5 pg/ml
Vitamin D3	17.7 ± 10.8 ng/ml.

MEAN	
Waist Circumference	118 ± 16.9 cm.
Post Prandial Blood Sugar	137.2 ± 48.3 mg/dl
Total Cholesterol	179 ± 40.1
Triglycerides	132.2 ± 78.2
High-density Lipoproteins	40.9 ± 10.3
Low-density Lipoproteins	100.5 ± 31.8 mg/dl

LET ME ANALYSE AND DIVIDE THE RESULTS AS PER THE NEW EOSS:
EDMONTON OBESITY STAGING SYSTEM

- METABOLIC
- MECHANICAL/ FUNCTIONAL
- MENTAL/ PSYCHOLOGICAL

EOSS RISK SCORE IN GEN Z POPULATION



	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
Medical	absent	pre-clinical risk factors	comorbidity	end-organ damage	end-stage
Mental	absent	mild	moderate	severe	end-stage
Functional	absent	mild	moderate	severe	end-stage

- **METABOLIC**
- **MECHANICAL**
- **MENTAL**

RESULTS : METABOLIC ABNORMALITIES IN PERCENTAGE (%)

Insulin Fasting	**57.1 %**
Insulin PP	53.3 %
BSL Fasting (PreDM)	32%
BSL Fasting (DM)	9.2%
BSL PP (PreDM)	14.7%
BSL PP (DM)	8.2%
HbA1c Pre diabetes range	**36.2%**
HbA1c Diabetes range	**16.3%**

Total cholesterol (high)	33.2%
Triglyceride (high)	40.2%
HDL (Low)	42.6%
LDL (high)	38%
Vit B12 deficiency	20.7%
Vit D3 Deficiency	94.6%
Hypothyroidism	12.5%
Fatty liver	73.4%
Uric acid (high)	40.2%

RESULTS

MECHANICAL	
OSA	54.9%
Joint Pain	37%

MENTAL/PSYCHOLOGICAL	
Psychological Disturbances	25.5%

CLINICAL	
Gynecomastia	92%
Pseudo hypogonadism	39.3%
PCOD	63.4%
Hirsutism	42.4%

STATISTICALLY SIGNIFICANT CORRELATIONS

- **There is significant correlation between the presence of prediabetes (HbA1c),low HDL ,high triglycerides with increase in age.**
- **There is significant correlation between high fasting insulin, high uric acid, fatty liver, symptoms of OSA and increase in BMI**
- **Those with history of both obesity and diabetes in the family had higher postprandial blood sugars and correlation was significant .**
- **There is significant correlation between occurrence of fatty liver with raised PP sugar and lower HDL**

INCIDENCE IN A NUT SHELL

	N=184	
	Number of patients	Percentage (%)
Hyperinsulinemia	121	65.8
DM + PRE DM	97	52.7
Dyslipidemia	138	75.0
Fatty_Liver	135	73.4
High Uric Acid	74	40.2
History of OSA	101	54.9

Number of co-morbidities	Number of patients	Percentage (%)
0	1	0.5
1	13	7.1
2	31	16.8
3	38	20.7
4	**49**	**26.6**
5	**31**	**16.8**
6	**21**	**11.4**
Total	184	100

75.5% of the patients had more than 3 co-morbidities.

LIMITATIONS

- ✓ Single Centre study
- ✓ Population studied was only those with moderated to severe obesity who visited a Bariatric unit
- ✓ The incidences do not represent the overall Gen Z population .
- ✓ Evaluation of some parameters was not possible in those with age below 15years (developing stage)

CONCLUSION: WORRY AND FEAR , NEEDS ATTENTION !

Gen Z population is found to have more serious metabolic and physical co-morbidities at a very early age making the clinicians **Worry** about long term complications and **Fear** of the progression of the obesity induced diseases.

Attention towards prevention and treatment is necessary for the well-being of this age group that represent the future of the globe.

THANK YOU!