

“Metabolic disorders and Lifestyle practices in psychiatric patients taking psychotropic drugs attending psychiatric outdoor of selected Hospitals in Kolkata, West Bengal”

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Abstract: A descriptive survey approach was used to study metabolic disorders and lifestyle practices of psychiatric patients taking psychotropic drugs and attending psychiatric OPD in selected hospitals in Kolkata, West Bengal. The conceptual framework for the study was based on Health Belief Model. Non Probability sampling technique was used to select 51 schizophrenia patients who attended OPD during the study time. Data was collected through valid and reliable semi structured interview schedule, medical record proforma, physical examination and structured lifestyle assessment scale. All of the psychiatric patients under study had either of the metabolic disorders. Maximum (58.8%) patients had disorder in HDL i.e. low HDL level. Therefore maximum had dyslipidemia. Majority of patients under study had very good life style practices (54.90%) and minority had fair lifestyle practice (7.80%), whereas few still had excellent lifestyle practices (9.80%). Maximum mean % of score (97.6%) obtained score in the area of alcohol use in lifestyle practices, which reveals that the patients are aware of ill effects of alcohol use. There is no significant relation among metabolic disorders and lifestyle practices, as the p-value is >0.05 (at 5% level of significance) and df 49. Calculated 't' value is $<$ table value of 't'. The relation may be due to random chances. Although the relationship is negative, which means that if lifestyle practices improve than metabolic disorders will be less. Chi square computed between metabolic disorder and gender (8.674) which shows significant association at df(1). No significant association of lifestyle practices were found with either of the sample characteristics. The study has implications in field of nursing education, administration, practice and research so as to reduce metabolic disorder related morbidity and mortality in psychiatric patients with help of lifestyle factor modifications and better screening for metabolic disorders.

Background: A number of recent guidelines and popular statements recommend stringent monitoring of metabolic functions in individuals receiving antipsychotic drugs. Metabolic The treatment of patients with mental problems is still symptomatic and has a number of problems, including the choice of the appropriate medication which, in the case of psychotic disorders, affect the reduction of symptoms, both negative and positive. Although the second generation medications reduce the above-mentioned symptoms, they can also contribute to the formation of metabolic disorders. Mental illness and metabolic syndrome – a literature review enumerate the components of metabolic syndrome, such as weight gain, increased blood glucose levels, hyperlipidaemia, and resistance to insulin. Therefore, the selection of appropriate antipsychotic medication should take into account all aspects, including those related to metabolic transformation.^[4] Both in the case of the population manifesting mental disorders and those who are healthy, stress is a factor predisposed to abdominal body fat, which contributes largely to the development of the components of metabolic syndrome. This is proved by reports on increased levels of cortisol, even before taking medications, in people with mental illnesses.

In the case of long-term treatment of mentally ill patients, not only effective medication therapy, but also the impact of skills aimed at reducing tension, stress, and the psycho-education for healthy lifestyles seem to be justified. Mortality rates among the mentally ill patients are particularly worrying. In recent years, knowledge about the effects of some antipsychotics on weight gain,^[5] as well as on independence from pharmacology, increased susceptibility for the development of metabolic disorders in people suffering from mental illness, has been expanded. However, despite significant advances in knowledge, till date there are no uniform rules of conduct that are specifically aimed at syndrome. It includes a cluster of metabolic dysfunction including central obesity, hypertension, glucose and lipid abnormalities. Those with the syndrome have a two to three fold increase in cardiovascular mortality and a two fold increase in all cause mortality. Patients with schizophrenia are more likely to develop metabolic syndrome than the general population^[3]. Metabolic disorders in patients suffering from mental illnesses are caused by a number of factors, the most important of which are: the side-effects of antipsychotic medications, a specific, less active lifestyle and nutrient-poor diet, as well as the tendency to insulin resistance before taking medication. These tendencies are also noticed in healthy family members which may indicate a genetic disposition to psychotic and metabolic disorders. The basic need is of

educating patients on a diet and physical activity, that would undoubtedly contribute to improving the quality of life of this particular population. The lifespan of people with severe mental illness (SMI) is shorter compared to general population. This excess mortality is mainly due to physical illness.^[7] The poor physical health outcomes are due to physical illness, individual lifestyle choices and side effects of psychotropic drugs. Certain metabolic disorders are more prevalent in patients with mental illness as compared to the general population. This narrative review demonstrates that the presence of poor physical health and health behaviours in people with SMI exceed much more than that observed in the general population, and reinforces the urgent need for mental health nurses to address physical health that are of great concerns in patients.^[8]

Aims and Objectives

To find out the metabolic disorder in psychiatric patients. To assess the life style practices of psychiatric patients. To find out the relationship between metabolic disorders and life style practices. To find an association between metabolic disorder and selected sample characteristics. To find an association between lifestyle practices and selected sample characteristics.

Materials and Methods: A descriptive survey approach was used to study metabolic disorders and lifestyle practices of psychiatric patients taking psychotropic drugs and attending psychiatric OPD in selected hospitals in Kolkata, West Bengal. The conceptual framework for the study was based on Health Belief Model. Non Probability sampling technique was used to select 51 schizophrenia patients who attended OPD during the study time. Data was collected through valid and reliable semi structured interview schedule, medical record proforma, physical examination and structured lifestyle assessment scale.

Results: All of the the psychiatric patients under study had either of the metabolic disorders. Maximum (58.8 %) patients had disorder in HDL i.e. low HDL level. Therefore maximum had dyslipidemia. Majority of patients under study had very good life style practices (54.90%) and minority had fair lifestyle practice (7.80%), whereas few still had excellent lifestyle practices (9.80%). Maximum mean % of score (97.6%) obtained score in the area of alcohol use in lifestyle practices, which reveals that the patients are aware of ill effects of alcohol use. There is no significant relation among metabolic disorders and lifestyle practices, as the p-value is >0.05 (at 5% level of significance) and df 49. Calculated 't' value is $<$ table value of 't'. The relation may be due to random chances. Although the relationship is negative, which means that if lifestyle practices improve than metabolic disorders will be less. Chi square computed between metabolic disorder and gender (8.674) which shows significant association at df(1).

Conclusion: Metabolic syndrome is a complex syndrome. Lifestyle modification can reduce risk of metabolic disorders but sustenance is difficult. Clinicians and other care providers need to be sensitive to the physical health of individuals. Health care professionals need to help people understand the potential benefits that may result from periodic screening, introduction of dietary patterns, exercise, and yoga and support in adopting and adhering to lifestyle modifications required to maintain physical health of persons with serious mental illnesses

Key Word: Metabolic Disorders, Lifestyle practices, Psychotropic drugs, Outdoor psychiatric patients

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I. Introduction

Mental health refers to our cognitive, behavioral, and emotional well being, it is all about how we think, feel and behave. Mental health can affect daily life, relationships and even physical health. It includes a person's ability to enjoy life, to maintain a balance between life activities and efforts to achieve psychological resilience. According to WHO-Mental Health is a state of wellbeing in which the individual realizes his or her own abilities, can cope with normal stressors of life, can work productively and fruitfully, and is able to make a contribution to his/her own community^[1] Over the last fifty years there have been dramatic changes in human environment, behaviors and the way of life. These changes have resulted in escalating rates of metabolic syndrome not only in the general population but also in people with mental illnesses.^[2] Various factors like lack of physical exercise, use of psychotropic medications, inadequate medical screening has lead to the increased risk of metabolic changes among people with mental illness. Hence there is greater need to evaluate metabolic syndrome in psychiatric patients taking psychotropic drugs.

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II. Material And Methods

Descriptive survey approach was used with Variables, Metabolic Disorders and Life Style Practices. The Socio demographic variables: Gender, age (in years), education, occupation, monthly family income, residential area.

Setting

Pilot Study: Antaragram mental health care centre, Gobindapur, Baruipur.

Final study: Psychiatric OPD of R.G.KAR Medical College & Hospital, Kolkata.

Population

Schizophrenia patients.

Sample

Schizophrenia patients attending psychiatric OPD.

Sample size

Pilot study: 10

Final study: 51

Sampling technique

Purposive sampling technique

Inclusion criteria:

1. Patients diagnosed with schizophrenia accompanied with family member.
2. Both male and female patients within age group 18-55 yrs.
3. Patients taking psychotropic drugs for 1-5 years.

Exclusion criteria:

1. Other psychiatric conditions.
2. Patients with previous history of metabolic disorders like hypertension, hyper lipidemia, diabetes, hypercholesterolemia or any other metabolic disorders.

Procedure methodology

A semi structured interview schedule was prepared for collecting demographic data. Record analysis proforma is developed to collect the data on metabolic parameters like body weight, height, BMI, fasting blood glucose level, triglyceride level, blood pressure and waist circumference. Research and non-research based literature is reviewed to develop the tool. Consultation was done with Guide and experts to ensure the clarity and appropriateness of the item. Necessary permission was taken from authors for modification of lifestyle inventory. Consultation is done with 7 experts to ensure the appropriateness and validity of the items. Establishment of the content validity is done and modification is made as per suggestion of expert opinion. Pretesting of the tool is done. Reliability of the tool is computed. A final draft is prepared related to semi structured interview schedule and physical assessment record analysis proforma and lifestyle assessment scale. Thus the content validity of the study has been established. Reliability tested by appropriate statistics. Tool-I & Tool-II checked by Inter rater reliability, 0.88, Highly reliable. Tool-III-Cronbach's alpha- 0.86, Highly reliable

The final study was conducted at “R.G.Kar Medical College & Hospital, Psychiatric OPD from 10.12.2018-29.12.2018. Necessary formal administrative permission was obtained for the same. A separate room was selected in the OPD for Interviewing and assessment of patients under study. Sample size was 51. Sample was selected as per inclusion criteria and non probability purposive sampling technique. At first informed consent was signed by patient or accompanying family member. Then interview procedure commenced. The average time taken for each patient was, for demographic proforma 5 mins, for metabolic parameters and physical parameters 10 mins and for lifestyle practices assessment 15 mins. Metabolic parameters were recorded as per record analysis and the physical parameters were measured as... Waist circumference: A tape measure was used to measure halfway between the 12th rib and iliac crest. Body weight was measured using crown bathroom scale with patients wearing light clothes and no shoes. Height was determined using wall mounted measuring tape with patients not wearing shoes. BMI was calculated using WHO standard BMI calculator. Blood pressure was measured using electronic BP monitor using standard cuff size.

Total half an hour was taken for each patient. The investigator recorded the responses as conveyed by the patients or their family members. Finally, all patients and their family members were thanked for their co-operation and participation in the study.

Statistical analysis

Both descriptive and inferential statistics were used to summarize, organize, evaluate and interpret data. Data were collected through interviewing, physical examination and record analysis of psychiatric patients taking psychotropic drugs and those who attended psychiatric OPD of R.G.KAR Medical College and Hospital,

during the data collection period. Relationship between metabolic disorders and lifestyle practices was determined using Karl Pearsons correlation coefficient. “t” test was done to determine the statistical significance of the correlation. Chi-square test was done to determine association between

- i) Metabolic disorders and selected demographic variables.
- ii) Lifestyle practices and selected demographic variables.

III. Result

Describes the background information of demographic characteristics such as gender, age, education, occupation, monthly income, residential area of the patients under study.

Table 2 : Frequency and Percentage distribution of demographic variables of psychiatric patients taking psychotropic drugs in terms of age, gender, education.

Demographic variables	Frequency	Percentage(%)
Age (in years)		
18-30	17	33.3
31-43	21	41.2
> 43	13	25.5
Gender		
Female	15	29.4
Male	36	70.6
Education		
Below secondary	35	68.6
Secondary and above	16	31.4

Table 2 , shows that majority (41.2%) of the patients under study belongs to the age group of 31-43 years, and minimum(25.5 %) belongs to the age group of above 43 years, 70.6% of the patients under study are male and 29.4 % are females, 68.6% have education below secondary and 31.4 % have education of secondary level and above.

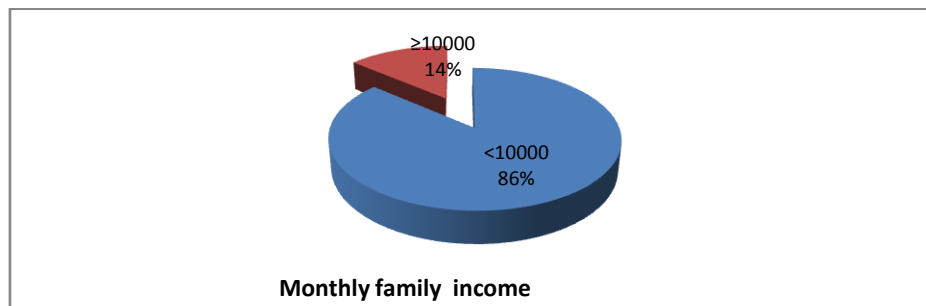


Fig. 4 depicts that 86% of patients under study have an monthly family income of below Rs. 10000 and 14% have income of above Rs. 10000

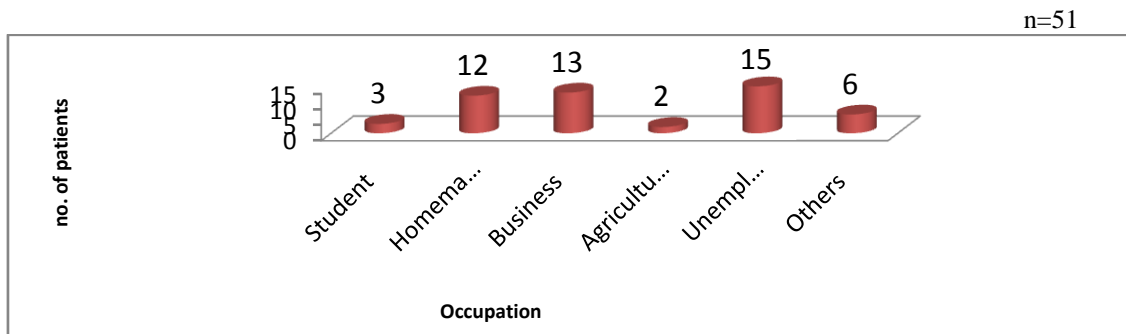


Fig. 5, shows that, out of 51 patients under study, 15 were unemployed, 13 had their own business, 12 were homemakers, 6 had other occupations , 2 practiced agriculture and 3 were students.

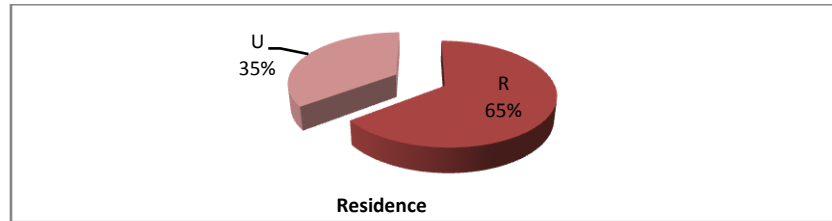


Fig.6, illustrates that out of the total patient under study 65% resided in rural areas and 35% were urban residence.

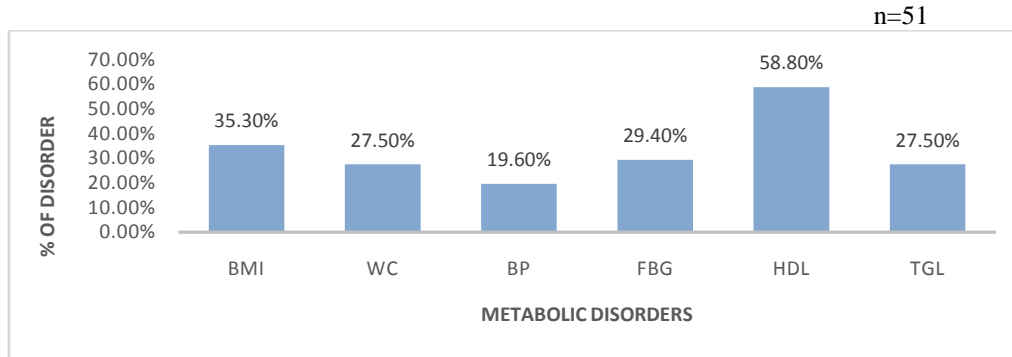


Fig.7, reveals that maximum(58.8 %) patients had disorder in HDL i.e. low HDL level, 29.40 % showed disorders in FBG levels, 27.50 % had disorders in TGL and waist circumference, 35.30 % displayed higher BMI, 19.60 % had disorders in blood pressure levels.

Lifestyle Practices Assessment	Number Of Patients	Percentage
Excellent lifestyle.	5	9.8
Very good lifestyle	28	54.9
Good lifestyle.	14	27.5
Fair lifestyle.	4	7.8
Needs improvement	0	0
Total	51	100

Table 3 ,reveals that maximum(54.9%) patients taking psychotropic drugs have very good lifestyle pattern and minimum(7.8%) have fair lifestyle practice score.

Areas	Maximum possible score	Mean	Mean%	Median	Sd
Family/Friends	15	10.65	71.0	11	2.52
Activity	10	5.53	55.3	6	2.11
Nutrition	15	11.94	79.6	12	2.02
Tobacco/Toxins	15	12.69	84.6	13	2.24
Alcohol	10	9.76	97.6	10	0.65
Sleep/stress	10	8.33	83.3	8	1.09
Type of personality	15	10.98	73.2	11	2.49
Insight to life	10	7.08	70.8	7	1.83
Career	10	6.69	66.9	8	2.00

Table 4, illustrates that, according to area wise distribution of mean % score of lifestyle practice assessment score of patients under study , maximum (97.60%) score with SD of 0.65 in area of alcohol abuse, minimum (55.30 %) mean score with SD of 2.11 in area of activity. Therefore it can be inferred that in the area of alcohol abuse, the lifestyle practice is very highly effective yet minimum effective in the area of activity.

n=51

Variables	Mean	SD	Corr. Coeff(r)	‘t’ value	Significance
Metabolic disorder	1.98	1.273			
Life style practices	83.65	11.407	-.091	0.640	Not Significant

‘t’ value with df (49)= 2.01; p-value<0.05 (significant)

Table 5, reveals negligible correlation between Metabolic disorder and Life style practices; as the value of correlation coefficient is -.091 (negligible) and not significant as the p-value is >0.05 (at 5% level of significance) and also calculated ‘t’ value is < table value of ‘t’.It may be due to random chances.

Demographic variables	Metabolic disorder		Chi square	DF	Chi square (Table)	Significance
	≤ median	>Median				
Gender						
Female	7	8	8.67	1	3.84	Significant
Male	31	5				
Education						
Below secondary	28	7	1.14	1	3.84	Not significant
Secondary and above	12	6				

Table 6, reveals that chi square was computed between metabolic disorders and selected demographic variables like gender, education. The chi square value computed between gender and metabolic disorders were 8.67 which shows significant association at df(1) and p<0.05.

Any other association was not found with either of the variables and research variables.

Hypothesis:

This was a descriptive study. Therefore after the statistical calculations it was found that there is no significant relationship between metabolic disorders and lifestyle practices. Thus the hypothesis that can be formulated on the basis of findings are-

H₀- There is no significant relationship between metabolic disorders and lifestyle practices of psychiatric patients taking psychotropic drugs at 0.05 level of significance.

H₁. There is a significant relationship between metabolic disorders and gender at 0.05 level of significance.

IV. Discussion

In this section major findings have been discussed with reference to the result obtained by other investigators. The present study is conducted with a survey approach to find relationship of lifestyle practices and metabolic disorders among psychiatric patients taking psychotropic drugs. Investigator has 51 samples selected by non probability purposive sampling for the study. The study results shows that all of the psychiatric patients under study had either of the metabolic disorders, majority (30) has low HDL Level which reveals dyslipidemia. Maximum mean % of score(97.6%) obtained score in the area of alcohol use in lifestyle practices, which reveals that the patients are aware of ill effects of alcohol use. There is negligible correlation between Metabolic disorder and Life style practices as the value of correlation coefficient is -.091 (negligible) and not significant as the p-value is >0.05 (at 5% level of significance) and df 49. calculated ‘t’ value is < table value of ‘t’. The relation may be due to random chances. Although the relationship is negative, which means that if lifestyle practices improve than metabolic disorders will be less. Chi square computed between metabolic disorder and gender (8.674) which shows significant association at df(1).No significant association of lifestyle practices were found with either of the sample characteristics.

Lipid profile in schizophrenia^[35] case control study. et al .conducted a case-control study between April 2013 and March 2014 on 78 patients with schizophrenia and 68 healthy subjects who benefited from the dosage of four serum lipid parameters: total cholesterol (TC), triglycerides (TG), High-density lipoprotein Cholesterol (HDL-C) and Low-density lipoprotein cholesterol (LDL-C). The comparative study showed that serum concentrations of TC and LDL-C were significantly higher for patients compared to healthy controls

respectively with ($t=2,83$; $p=0,008$) and ($t=9,35$; $p<0,001$), the cholesterol ratio (TC / HDL-C) was also significantly higher for patients ($t=2,23$; $p=0,033$). The patients had significantly higher prevalence of hypercholesterolemia (OR = 2.96) and low density hyperlipoproteinemia (OR = 18.79). There was a negative correlation between plasmatic TG concentrations and doses of antipsychotic. The vast majority of the literature confirms that patients with schizophrenia are at greater risk of dyslipidemia.

Gender differences in the lipid profile of dyslipidemic subjects.

Kolovou GD, et al (2012) evaluated the gender-associated differences in lipid profile of subjects intended to receive lipid-lowering therapy with emphasis on the associations between triglycerides (TG) and other plasma lipid variables. Lipid profiles of 1385 patients [aged 55+/-11 years, 549 women (40%)] were evaluated. Eligible subjects fulfilled one or more of the following criteria: total cholesterol (TC) \geq 6.2 mmol/l, TG \geq 1.7 mmol/l, and high-density lipoprotein cholesterol (HDL-C) $<$ 1.0 mmol/l. Patients were divided into subgroups according to TG and HDL-C levels. Women aged on average 3.5 years older, had higher TC and HDL-C, lower TG and a correspondingly lower TC/HDL-C ratio than men. High TG and low HDL-C in tandem appeared twice more frequently in men. Inverse correlations between HDL-C and TG levels were found to exist in the entire cohort ($r=-0.354$, $p<0.001$) and in all various subgroups. In the subgroup with TG $<$ 1.7 mmol/l, women had higher TC and HDL-C, lower TG levels and lower TC/HDL-C ratio compared with men. In the subgroup with TG \geq 1.7 mmol/l, women had higher TC and HDL-C levels and lower TC/HDL ratio compared with men. In the subgroup with HDL-C \geq 1.0 mmol/l women had higher HDL-C, lower TG levels and lower TC/HDL-C ratio compared with men.^[36]

Papanastasiou, E. (2012). Interventions for the metabolic syndrome in schizophrenia: a review. *Therapeutic Advances in Endocrinology and Metabolism*, 141–162. The metabolic syndrome (MetS) is an increasingly prevalent condition in people with schizophrenia. It remains highly prevalent in the general population in developed countries, but recently health promotion campaigns and greater awareness of the high associated mortality rates have resulted in improvements in the rates of cardiovascular risk factors. This is not the case for people with schizophrenia who continue to have more than twice the rates of MetS and significantly higher mortality rates than the general population. Various behavioural and pharmacological interventions have been used to improve conditions that are linked to MetS, mainly smoking and obesity. This review aims to provide an update of the latest knowledge about the behavioural, pharmacological and other interventions that might help to combat this life-threatening problem in people with schizophrenia. The following objectives at the beginning of our review: To summarize the interventions currently available, their effectiveness and most importantly to ascertain which interventions appear to be the most effective and therefore should attract clinical interest. To discuss the importance of monitoring in the early detection of MetS. A total of 42 studies were identified in this category, testing interventions that targeted physical health and cardiovascular fitness, smoking and weight. Few studies focused on mixed behavioural and pharmacological interventions. The results appear to be quite inconsistent and limited in this area, with some studies favouring pharmacological interventions over behavioural ones, while others show better outcomes by combining both kinds of interventions.^[37]

V. Conclusion

Metabolic syndrome is a complex syndrome. Lifestyle modification can reduce risk of metabolic disorders but sustenance is difficult. Clinicians and other care providers need to be sensitive to the physical health of individuals. History and examination of individuals being reviewed for mental health status should include physical health parameters (weight, blood pressure, waist circumference) as well. Laboratory measures for blood sugars, glycosylated haemoglobin and lipid profiles need to be done periodically. Health care professionals need to help people understand the potential benefits that may result from periodic screening, introduction of dietary patterns, exercise, and yoga and support in adopting and adhering to lifestyle modifications required to maintain physical health of persons with serious mental illnesses

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