EFFECTS OF ESTROGEN LEVELS ON MENTAL HEALTH OF UNMARRIED AND MARRIED FEMALES OF HYDERABAD CITY, SINDH, PAKISTAN

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Abstract

Estrogen E: Is a female sex steroid hormone, originates from ovary and adrenal accountable for budding secondary sexual characters **SSC**. Its effects are diverse in **form** and **functions** of females. Our study found; its low and high levels make females more vulnerable to trauma and create emotional disturbance. Its relation with mental health of unmarried and married females was observed. It was observed that depression, anxiety and stresses more in unmarried females as compared to married females. Result give shows estrogen have strong impact on mental health and has a significant predictor role over depression, anxiety, stress behavior in both studied groups.

Keywords: Estrogen Levels; Mental Health; Married; Unmarried; Females; Hyderabad; City.

INTRODUCTION

Estrogen **E** female sex hormone produced from ovary, adrenal gland and in trivial amount from liver. It develops many functions and behaviors among females; hence called mood elevator. Females are perceived more occurrence of foremost depressive confusion in the comparison of the men. And are greater perils, up to one and a half times that of men, of having a mood disorder **[1-3]**. Like all steroid hormones, estrogens readily diffuse across the cell membrane where they bind to an activate estrogen receptors which in turn modulate the expression of many genes. In addition to other action it raises the rate of ruin of monoamine oxidase and intra-neuronal serotonin transport **[2-6]**. Estrogen serves to increase serotonin availability in the synapse and therefore enhances mood. Change in estrogen levels is encountered in various phases and interventions related to a female's reproductive life and period of low estrogen are associated with mood disturbances, including depression in women **[7-10]**. In the females three types has been discovered, **Estrone E1;**

Is measured a weaker form of **E** and is the major estrogenic form found in naturally menopausal women who are not taking medicine. It is the only estrogen that is present in any amount in females after menopause. **Estradiol E2;** is the most effective form of estrogenic steroids produced by ovaries and exerts the fullest range of estrogenic effects.

When estradiol reaches the tissues, it connects with estrogen receptors to trigger specific activities in those tissues and cells. **E2** is thought to contribute many gynecological problems such as endometriosis, fibroids and even female cancers particularly endometrial cancer. **Estriol E3**: E3 is a metabolic waste product of estradiol metabolism that has some effects on a limited number of estrogen receptors. E3 is only produced in significant quantities during pregnancy. **E3** developed from placenta 16-hydroxydehydro-epiandrosterone sulfate (16-OH DHEAS) 4, which is an androgen steroid made in the fetal liver and adrenal glands and is 8% as potent as E2 and 14 % as potent as E1[11]. It is important to consider both anxiety and depression when investigating factors, such as estrogen, that may alter mood [12]. Females increased vulnerability to mood disorders occurs post pubertal, with the beginning of cyclical changes in Estrogen secretion from the ovaries [13-15]. Plasma estrogen levels are significantly lower among depressed Females [16].

MATERIAL AND METHODS

Data was made from Government Colleges of Hyderabad **(Location World Map: 25.367 °N latitude and 68.367 °E longitude)** (**Fig.1**) by well-developed questionnaire which was formulated by supervisory committee and WHO standard method besides chemical analysis of the blood sample **(Fig.7-9)**. Information was made in year **2022**; during working days. Participants **(100)** out of 100, **50** were unmarried of undergraduate age range was **17 to 22** and 50 married females of population from the age **23 to 45**. No Participant took contraceptive pills. The entire Participants were volunteers. **Study Sites**: Govt. Nazareth Girls Degree College Hyderabad. Govt. I.I. Zuberi Girls Degree College Hyderabad and Govt. Girls Khanbhadur Degree College Hyderabad **(Fig. 2-6)**.
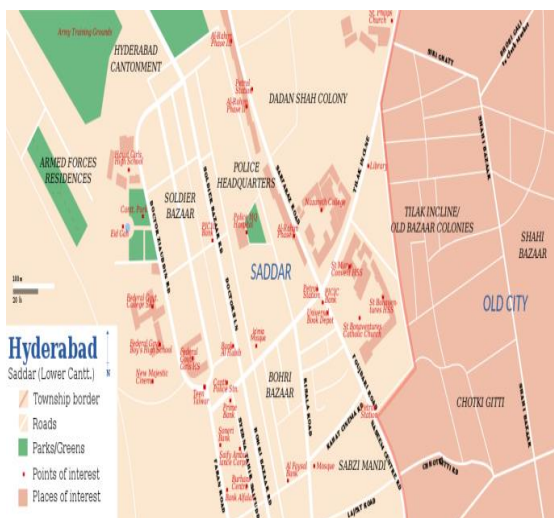
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Figure 1-6: Map of Hyderabad city and showing the different sites of colleges, Data collection from unmarried females at Govt. Nazareth Girls Degree College Hyderabad, Another class of unmarried females at Govt. I.I. Zuberi Girls Degree College Hyderabad, Data collection; from unmarried females at Govt. Girls Khanbhadur Degree College Hyderabad, Data collection; from married females at Govt. Girls Khanbhadur Degree College Hyderabad and Data collection; from married females at Govt. I.I. Zuberi Girls Degree College Hyderabad.

Figure 7- 9: The Questionnaire, Showing Three Parameters of Survey

RESULTS AND DISCUSSION

It is concluded from data that **E** estrogens have an effect on target tissues by binding to estrogen receptors. These receptors are protein molecules found inside those cells that are targets for estrogen action. Therefore, when **E** molecules circulate in the body, they exert effects only on cells that contain **E** receptors. In the absence of **E** molecules, these **E** receptors are inactive and have no influence on DNA. When an **E** molecule enters a cell and passes into the nucleus, the **E** binds to its receptor, causing the shape of the receptor to change. It is found approximately **E** has about 400 functions in a female's body. Such as regulate body temperature, improves blood flow, increases concentration, decreases wrinkling, and decreases the risk of colon cancer and mental health. Results indicate due to **E;** females are at higher risk for major depression throughout their reproductive lives compared to men. **E** has diverse effects on the body and brain in the females. It exerts influence on the central nervous system through complex mechanisms of physiology and psychology. Besides results showed that **E** effects on mental health of the females. **E** is also has effective antioxidant and anti-inflammatory agent and is known to improve much memory, concentration, motions in the females. It was seen females react to the stress and anxiety caused by overburden in a variety of ways. Things such as an argument with spouse, disrespectful children, money troubles, and difficult co-workers can cause mental health in females were clearly observed. On the other hand it was observed that depression can cause several mental health issues in the females. Some females experienced sadness while others express anger or agitation when they are depressed. Constant instability between extremes: Most people pursue council when they are disheartened, but do not when they are disturbed. Bipolar disorder is when you are in a constant flux between depression and manic extremes. The constant flux can cause severe mental health in females. It was observed that low levels of the **E** causes bothered, hot flashes, dejection, fatigue etc where as its high levels causes heavy bleeding, breast tenderness, premenstrual dysphonic disorder, fibrocystic breasts, ovarian cyst, abdominal weight, anxiety, irritability, fluid retention, increased triglyceride levels, progesterone. Low levels of **E** made females more vulnerable to trauma while high levels of the female sex hormone can partially protect them from emotional disturbance. Self-medication affects estrogen levels. In this study estrogen and its relation with mental health of unmarried and married females were observed. It was observed that depression, anxiety and stresses more in unmarried females as compared to married females. Result give you an idea about estrogen have strong impact on mental health in females. The estrogen level would be a significant predictor of depression, anxiety and stress. We can conclude from the results obtain during present study that estrogen level play a vital role in the mental health and behavioral changes among females. There would be significant relationship between estrogen level, age and socioeconomic status of the participants.

We examined mainly depressed, anxiety and stress. Their results have described as in **(Table.1 and in Graph.1)**.

Table 1: Mean, SD and t-test of married and unmarried females on Depression, Anxiety and Stress

Variables	M. Females		UN. Females		t	p
	M	SD	M	SD		
Depression	8.77	4.97	15.07	7.84	-3.77	> 0.05
sAnxiety	9.1	6.61	11.70	7.13	-1.33	< 0.05
Stress	14.5	6.28	19.57	8.00	-2.76	> 0.05

Note: df =58, *p<0.05, **p<0.01, ***p<0.001

(M. Females=Married females; UN Females = unmarried Female; M=Mean; SD= Standard deviation)
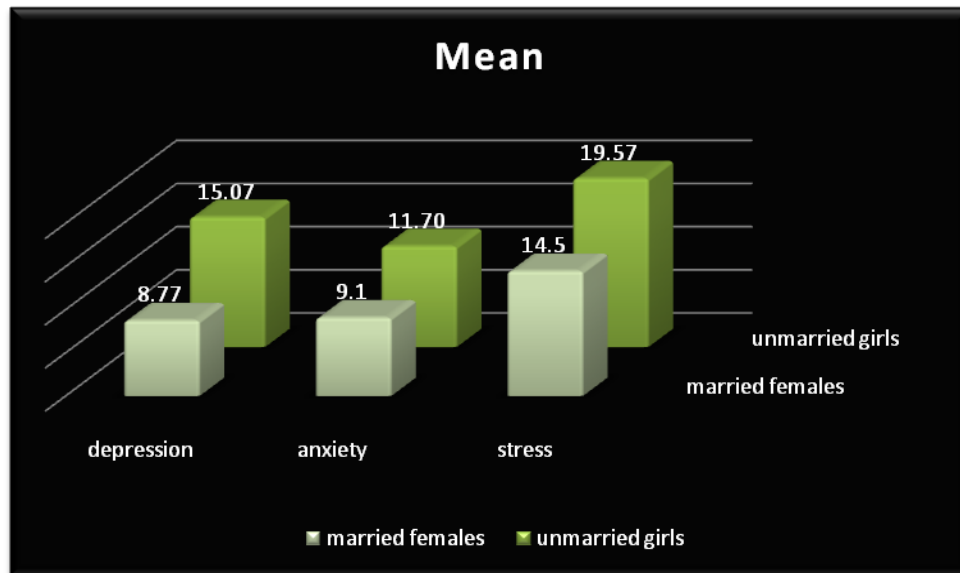
Graph 1: Mean of Married Females and Unmarried Girls on Mental Health

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