

# Place of Pheromone in Rape

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## ABSTRACT

The aim of the study was to find out if pheromone was one of the responsible factors leading to rape. Search in literature revealed many interesting facts. Majority of rape took place on the day or nearer to ovulation. Many rape victims became pregnant. In normal life, among couples most of the sexual intercourse happened on this day, more than on other days. Smell of the women on this day was different and was more attractive to men. Vaginal smell also differed on this day. One study showed many men were able to recognize a woman's urine of ovulation day by its smell. It was not similar on other days. All above lead us to conclude that women exuded a sex attractant or pheromone on the day of ovulation which attracted men. Probably this is the hidden biological cause ending in rape.

**Keywords:** Human Pheromone; Rape; Olfaction; Ovulation; Sexual Attraction

## 1. Introduction

Rape is defined as sexual intercourse by force, duress, intimidation or without legal consent [1] or the crime committed by a man of forcing another person to have sexual intercourse with him, without their consent and against their will, especially by the threat or use of violence against them [2]. Law on rape differs in different countries [3-5].

Several aspects of rape are being studied. The rate of rape is increasing world over. The incidence in the USA as reported by Sadock and Sadock [5] was 258,014 in one-year period ending by September 1996. The rate was high between 0.68 and 1.5 million in 2008 [6]. In India a total number of 164,765 cases of crime against women were reported in 2006 which was more than the previous year [7]. Graft and Graft [8] reported a steady increase in the rate of rape from 1951 to 1980. The age of rape victims varied from 15 months to 82 years [4]. Majority (61%) of victims were below 18 years of age. Almost 20% of total victims were below 11 years [5]. Seventy percentage of victims were unmarried [4]. Many times, criminals were known to victims. Most times rapist belonged to same race of victims [9]. This figure was reported from 30% [4] to 57% [5]. Half of rape victims were threatened before crime either verbally or with weapons [10]. Lewis *et al.* [11] reported most common place

for a rape to occur was victim's own house. This was reported as 29% of total case [5]. Amir [10] reported that 25% of all rapes were done in group. Rape is not uncommon in prison and jail [12]. The aftermath of rape is a serious matter. Interestingly, only 30% of the rape was reported. Cause for rape need not be for lust or to revenge. Biologists suspect a hidden cause responsible for rape.

## 2. Hypothesis

The present hypothesis states, "A human pheromone is likely the hidden biological cause for rape in many cases".

## 3. Evidences

Pheromone is a general term for a chemical synthesized and the smell emitted by an animal initiating a biological action in other animals of the same species. Popularly known sex attractant is a pheromone. Its presence in mammals is well documented [13-20]. Attraction of a bull to a cow in estrous stage is the best example. A similar estrous stage in a woman is not unlikely [21]. Grammer *et al.* in their review article discussed functioning olfactory communication, role of certain pheromones and behavioral changes in reproduction [22] though evidences for human pheromone are scanty. The existence of pheromone is not experienced. The probable reasons

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are, during the process of evolution, the requirement of olfaction for searching food or for protection from enemies was slowly excluded, permitting olfactory function into a very negligible state. It was considered as rudimentary [23] or non functional [24]. In case of human, social structure is entirely different from animals; where sex attractant is non essential. This is the main reason for non recognition of pheromones. However, Burton [25] reported that just eight molecules of volatile substances were enough to cause an olfactory sense. A pheromone substance may cause stimulus followed by response.

The following studies indicated the presence of human pheromone in sexual activities. A decreased olfactory acuity was responsible for hypogonadism [26,27] demonstrating olfaction as an important requirement for sexual growth. Synchronization of menstrual cycle [28,29], regular normal menstrual cycle [30-32] as well as ovulation [30] was reported as good examples for pheromonal action. A study conducted by Varendi *et al.* [33] had shown that a newborn baby was attracted to mother's nipple by smell. In animals this was present and attributed to pheromones.

The possibilities of a male pheromone initiating menarche [34] regulating the normal length of menstrual cycle [32] or desynchronizing menstruation among female students staying at home were reported [29]. The presence of pheromone in secretion of human vagina and sweat glands was shown as important for regularity in sexual activities [35-38]. The vaginal secretions contained volatile fatty acids, which were presumed functioning as pheromones. The constituents of the secretion changed daily according to woman's hormonal status. Human vaginal smell changed according to her menstrual status [39]. Trained police dogs recognized this difference [34].

There are evidences to show a woman gets attracted to a man by smell. Vierling and Rock [40] reported that olfactory sensitivity of women was restricted to reproductive age of life. It increased among women in the middle of menstrual cycle to exaltolide (Lactone of 15-hydroxy pentadecanoic acid) [40] and androstenol, (5 $\alpha$ -Androst-16-en-3 $\alpha$ -ol) two putative human pheromones [41]. Vierling and Rock [40] had observed change in thickness of olfactory epithelium according to the menstrual status.

Evidences for the possible attraction of a man to a woman around ovulation time are available. We consider such attraction is due to one or more pheromones, which support the present hypothesis and are enumerated below:

1) Hurwitz [42] recorded the frequency of coitus throughout the menstrual cycle and observed maximum number of couples had intercourse on the day of ovulation.

2) Fessler [43] repeatedly placed the evidence for coitus taking place during ovulation period.

3) During a month long study among couples, they were instructed not to apply any fragrant substances. The purpose was not to mask the natural smell emitted by them. They were also instructed to record the days when coitus took place. The result showed that maximum number of couples had intercourse on the day of ovulation. Authors believed an attraction between them took place on this day and ended in coitus. In conclusion, the study stated that the sexual intercourse was taking place maximally on the day of ovulation. This was due to the attraction man had to the smell emitted by woman on that day. Authors believed it was pheromone, a sex attractant, and which was responsible for coitus [44].

4) Reports showed primary partners of women were more jealous and possessive near ovulation than at any other level of menstrual cycle [45-47].

5) Doty *et al.* [38] reported the difference in vaginal odour between the ovulation time and other times. They observed the smell emitted at the time of ovulation was more acceptable to men. Attraction to such smell may be responsible for coitus.

6) Pheromone could be a reason for rape being done on known women [4]. Thirty to fifty seven percentage of victims were belonging to this group [4,5]. The attraction to a woman could have been built up by slowly and repeatedly smelling pheromone [4,5].

7) Keith *et al.* [48] observed a difference in odor of pre and post coital vaginal secretion. They believed pheromone exuded from women on the day of ovulation, attracted men.

8) In an experimental study conducted, more number of male subjects recognized by smell of female urine collected on the day of ovulation [49]. Exuded pheromone or its metabolic products in urine might be responsible for this. In case of some animals pheromone was present in urine.

9) Fessler [43] reported rape took place during ovulation time and majority of victims became pregnant following crime. Among adult women an estimated 32,101 pregnancies resulted from rape each year [5]. The number revealed the seriousness of the situation that the rape took on the day of ovulation. In many cases of rape pregnancy might not have taken place also. Not necessarily all coitus ended in pregnancy.

#### 4. Conclusion

In conclusion, evidences are available that man is attracted to a woman by her smell around ovulation day and this could be a responsible factor in many rape cases. The pheromones under discussion may be responsible for rape in several cases. But may not explain all cases of it, like one in nine-month-old girl [50] or in old age women [51].

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