ORIGINAL RESEARCH

Physiological study of horror film viewing and its effect on autonomous nervous systemin males and females north Indian population

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ABSTRACT

The current study is an explanatory study on the effects of watching horror movies on the psychological health of teenagers in the city area of Kanpur gsvm. Researchers tried to explain the mental health and psychological problems like phobias, nightmares, sleep disorder, harsh behavior etc., in teenagers and their preferences of movies watching. The study explains that the majority of teenagers are used to watching movies, and they prefer Horror and Action movies via the internet, and these movies are affecting their psychological health. They choose films to watch for entertainment, but such kind of enjoyment has deep down affected their brains and social behaviors. Responses were collected through a survey questionnaire.

Key words:Psychological health, youth, post traumatic stress disorder, horror movies, anxiety, fear, stress This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as

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INTRODUCTION

Horror movie is a fiction, but the emotions we feel and the reactions they trigger are real^[1-2]. Undoubtedly, it is a very powerful effect that is now being studied in the context of a newborn science called neurocinema, dedicated to study the influence of movies on our brains. When we watch a horror movie, we know that what we are seeing isn't real. Cortisol is the primary glucocorticoid of the HPA axis and is implemental in the fear process (Buss, Davidson, Kalin 85 Goldsmith, 2004)^[3]Another theory hints at the fact that horror or violent movies help us manage our own fear. In practice, these films would have a cathartic effect, helping us develop our most ancient and hidden fears.

MATERIAL AND METHODS

The present study was conducted in healthy medical students of first professional M.B.B.S. (n=82) with 41 males (n=27) and 41 females (n=41) of 18 to 22 years age group at G.S.V.M. Medical College, Kanpur in the Department of Physiology, G.S.V.M. Medical College, Kanpur. The subjects were selected by simple random sampling. The subjects were briefed about the study and informed consent was taken as well as clearance from the ethical committee was taken. The subjects were selected by simple random sampling. The subjects were briefed about the study and informed consent was taken as well as clearance from the ethical committee was taken. They were divided in two groups randomly and two successive dates were allotted to each group when they had to assemble in the department. On the first of the allotted

dates the baseline values of the parameters (Systolic and Diastolic Blood Pressure, Pulse Rate and Respiratory Rate) were recorded and venous blood sample was drawn in the morning in between 10.30 AM and 12 PM. After this on next day subjects wereallowed to watch horror movie of about one & half hour.

Horror movie " EVIL DEAD" (about $1^{1/2}$ hour duration) was played on large screen in dark sound proof hall.

General and systemic examination of the subjects was carried out to rule out any condition that may interfere with the study. After this baseline readings of autonomic parameters (systolic and diastolic blood pressure weremeasured with digital B.P. apparatus, pulse rate measured with pulse oxymeter and respiratory rate were counted manually) was taken, a blood sample was drawn (from which baseline level of cortisol hormone was estimated).

RESULTS

Table 1: Significant relationship between male & female having different parameters

Male vs Female	S. Cortisol	Systolic BP	Diastolic BP	Pulse Rate	Respiratory Rate
Male	49.02 <u>+</u> 128.10	17.75 <u>+</u> 10.62	14.87 <u>+</u> 9.23	13.34 <u>+</u> 9.50	2.24 <u>+</u> 1.35
Female	55.80 <u>+</u> 129.98	22.48 <u>+</u> 10.88	18.58 <u>+</u> 12.65	13.10 <u>+</u> 10.52	2.26 <u>+</u> 1.74
t test	0.240771	-1.53	1.5354	0.10973	0.0588544
p value	0.81(>0.05)	0.12(>0.05)	0.12(>0.05)	0.91(>0.05)	0.95(>0.05)
Inference	Non significant	Non significant	Non significant	Non significant	Non significant

 Table 2: Significant relationship within group (Females) (Paired 't' test)

Parameters Mean <u>+</u> SD	Before watching Horror movie	After watching horror movie	t value	p value	Inference
Serum cortisol	238.73 <u>+</u> 85.96	290.65 <u>+</u> 93.73	2.78	< 0.05	Significant
Systolic Blood pressure	109.26 <u>+</u> 6.98	132.24 <u>+</u> 8.61	13.39	< 0.001	Highly significant
Diastolic Blood pressure	72.29 <u>+</u> 6.04	89.80 <u>+</u> 7.16	9.51	< 0.001	Highly significant
Pulse rate	76.51 <u>+</u> 6.5	90.07 <u>+</u> 9.36	8.07	< 0.001	Highly significant
Respiratory rate	19.85 <u>+</u> 15.77	19.68 <u>+</u> 1.34	8.41	< 0.001	Highly significant

Table 3: Significant relationship within group (Males)(Paired 't' test)

Parameters Mean <u>+</u> SD	Before watching Horror movie	After watching horror movie	t value	p value	Inference
Serum cortisol	245.39 <u>+</u> 83.04	294.41 <u>+</u> 76.34	2.47	< 0.05	Significant
Systolic Blood pressure	114.48 <u>+</u> 6.59	132.43 <u>+</u> 10.91	2.28	< 0.05	Significant
Diastolic Blood pressure	74.39 <u>+</u> 6.34	89.46 <u>+</u> 10.78	10.44	< 0.001	Highly significant
Pulse rate	75.85 <u>+</u> 6.71	89.09 <u>+</u> 7.77	9.10	< 0.001	Highly significant
Respiratory rate	17.26 <u>+</u> 1.26	19.51 <u>+</u> 1.34	10.75	< 0.001	Highly significant





DISCUSSION

Marston (1923) also looked at SBP during emotionally driven situations e.g. fear. He concluded that SBP significantly rose^[4].

Gillissen*et al* (2008) completed a similar study with 4 and 7yearsolds and pulse rate was measured, similar results were found, a significant pulse rate difference between baseline PRandPR after watching the film^[5].

NIMH USA (2005), National Institute of mental health (NIMH) concluded in one of the researches conducted on the "effects of horror movies on the children" that disclosure to horror films/cinema might have long-term unpleasant effects on young kids^[6].

Anthony. B, 2012Literature review of the subject under study showed that watching horror create bad effects on the mental and psychological health of teenagers^[7].

It seems that they use Horror movies for their psychological catharsis as Amaya. J. (2000) stated that scary movies are a big source of psychological catharsis^[8].

CONCLUSION

Thus, exact contribution of horror movie watching induced alteration of serum cortisol levels and autonomic status parameters in males and females will require further studies. While appropriate testing variables (volume blood samples, actual technique, kit viability etc) must bethere in order to elicit desired hormonalresponses of serum cortisol. So, thereare various factors physiological andpsychological which may contribute to those changes and further long term studies would be needed to reach a final conclusion.

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