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Journal homepage: <https://www.ijfcm.org/>**Original Research Article****Getting the better understanding of truth: Diving into the polygraph test**Akshra Mathur¹, Jiya Nair¹, Anshuman V Ramani¹, Mukesh Sharma^{2,*}, R K Tiwari²¹Vivekananda Global University, Jaipur, Rajasthan, India²State Forensic Science Laboratory, Jaipur, Rajasthan, India**ARTICLE INFO***Article history:*

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ABSTRACT

The field of forensic psychology has been growing in prominence in the past couple of decades. Psychology is used to detect the deception of the persons are involved in many areas that relate to crime, both solving crime and absolving people wrongly accused of committing crimes. The goal of lie detection is the discovery of a truth that is known to one person and concealed from others. Psychophysiological lie detection, or polygraphy, is based on the theory that lying produces particular emotions, which produce corresponding measurable physiological responses.

Modern polygraphy measures blood pressure, breathing, and skin conductance. Alternative metrics such as voice stress analysis and functional magnetic resonance imaging are as yet unproven. The control question test uses relevant, control, and irrelevant questions. A larger response to the relevant questions is considered evidence of deception. The guilty knowledge test uses concealed information questions and irrelevant questions.

Through this article authors have tried to report that how the polygraph examination of real cases is important and helpful to the investigating officer, using our three cases study, results are demonstrated.

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1. Introduction

About a century of research in field of psychology and human physiology provides fundamental concept for the expectation that a polygraph test could have extremely provide high accuracy and reliability.¹ Although psychological states often associated with deception may be affected with surrounding conditions like fear of being judged deceptive, may lead to affect the physiological responses of the suspect or victim that the polygraph measures, these same states can arise in the absence of deception.²

Moreover, many other psychological and physiological factors (behavioural and psychological) like anxiety; stress

or depression about being tested may also affect the response of suspect or victim. Such phenomena make polygraph testing intrinsically susceptible in producing erroneous results.^{3,4}

2. Importance and Evidence on Polygraph Accuracy

Scientific evidence relevant to the accuracy of polygraph tests for employee or pre-employment screening is extremely limited. Only one field study, which is flawed, provides evidence directly relevant to accuracy for pre-employment screening. A few additional laboratory studies are relevant to pre-employment or employee screening, but they are more analogous to specific-incident investigations than to screening because the deceptive examinee is given a precise recent incident about which to lie.⁵

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3. Concept and Methodology of Examination

Polygraph testing combines interrogation with physiological measurements obtained using the polygraph, or polygraph instrument, a piece of equipment that records physiological phenomena typically, respiration, heart rate, blood pressure, and electro-dermal response (electrical conductance at the skin surface). A polygraph examination includes a series of yes/no questions to which the examinee responds while connected to sensors that transmit data on these physiological phenomena by wire to the instrument, which uses analog or digital technology to record the data. Because the original analog instruments recorded the data with several pens writing lines on a moving sheet of paper, the record of physiological responses during the polygraph test is known as the polygraph chart. As per the present scenario the digital instrument with laptop,⁶ help the expert to store the spectrum of all the parameters. A variety of other technologies have been developed that purport to use physiological responses to make inferences about deceptiveness.^{6–8}

3.1. Pre-test interview: (Pre-exam)

A polygraph test is part of a polygraph examination, which includes other components. A critical one, particularly in comparison question tests, is the pretest interview. This interview typically has multiple purposes. It explains the test procedure to the examinee. It explains the questions to be asked so that examiners and examinees understand the questions in the same way.

3.2. Overall examination: (Exam)

A polygraph test and its result are a joint product of an interview or interrogation technique and a psychophysiological measurement or testing technique. It is misleading to characterize the examination as purely a physiological measurement technique. Polygraph examiners' training implicitly recognizes this point in several ways. It provides instruction on the kind of atmosphere that is to be created in the pre-test interview, advises on techniques for convincing examinees of the accuracy of the test, and offers guidance (in different ways for different test formats) for selecting comparison questions.

The polygraph examination follows standardized, ritual-like procedures and usually occurs in a setting designed to evoke associations with science, medicine, or law enforcement, institutions whose certified practitioners are believed to have special powers to uncover truths. Claims that polygraph testing is a scientific method, together with the establishment of research programs to improve polygraph testing, are useful for building credibility in a society that confers credibility on scientific activities. Moreover, potential examinees are assumed to believe in the

validity of polygraph testing, and its validity is supported by popular culture.^{9,10}

4. Case Studies

4.1. Kidnap case

In a kidnap case a girl was missing from her uncle's house since 14 days, then the family reached to police station for MPR (missing person report), by clamming that she is having some family issues and simple in nature. District police has done good job and searched out all CCTV camera of the suspected area where she might be traced. Police trace out 06 person with whom she was roaming after leaving house. Police took remanded for all the suspects about 14 days, but police was not in position to trace out the criminal or the prefect suspect.

Then they come for polygraph examination and 06 suspect were found truthful in this case. Police now start further, that she was not been murdered. Second thought come and again search started, after issuing the report of polygraph examination, within two days the girl was traced out.

4.2. Acid throwing case

On SPOT: In this case it was reported that two women were victimised with acid throwing, we have been called at the spot for scientific evidences. When we reached the spot was washed out with water, and the victims were shifted to hospital. As per the acid found on the bed-sheet and blanket, have been collected for further examinations.

We analysed the spot and as per family member of victims family were giving statement, we examine spot and found that director of acid throwing as not as reported by the family member. They reported that their neighbour have thrown acid. From the direction they were reporting was ruled out by our team.

Polygraph: After 1 year of the crime scene, the victims were continuously reporting for compensation and arresting the neighbour. The human right commission suggested polygraph for both parties e.g. Victim family and neighbour (husband and wife). They (victims family members) earlier verbally agree for polygraph examination but afterward they denied. The polygraph was done for neighbour. Under the examination both found truthful. Hence, the case was closed after out report.

4.3. Murder case converted accident case

Case History: Two year old case, a male of 35 years was found dead in his car under an over-bridge of height 12 feet, the car having only one dent on it. The case was related to murder, in which a female (married woman) was reported as a prime suspect of plan of murder for her husband on Rakhi (Rakshabandan), with his family members.

According to FIR, the male was returning from in-laws house, he had been murdered with a plan of her wife. The police investigation prima facie accepted and make the prime suspect for the case. After investigation the no proper evidences the lady was on bail. IO was suggested by his higher official for polygraph of the female suspect should be done in this case.

Polygraph: Under the polygraph examination of the female, found truthful. The case was reopened by court.

5. Discussion

Police officers make mistakes when they attempt to distinguish between lies and truths during police interviews. That mistakes occur is not surprising. As the cases examination suggested the polygraph examination is a best for investigation without violating any human rights laws. We suggested all the IO and police officials to use the techniques for eject out the extra suspect and small the area of investigation.

6. Conclusion

In a country like India, where Narco-analysis, brain mapping, and polygraph (lie detector) test against the will or consent of the accused would be an infringement of Article 20 (3) of the Indian Constitution. Article 20(3) deals with the right against self-incrimination or the right to remain silent (a common law criminal jurisprudence, the polygraph gives the forensic field a deeper aspect to the facts that only a corpse can tell. This test one of the crucial road map for any tough criminal ongoing case. With better advancement and development in the field of polygraphy, one might someday be able to why any crime is committed.

7. Source of Funding

None.

8. Conflict of Interest

None.

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