Journal Of Medical Science And Clinical Research
IGM Publication   An Official Publication Of IGM Publication

A Need to Conduct Problem Oriented Research to Counter Events Like 26/11 – A Review

Authors
Khurshid A Mattoo[1*], Shuja Rahman[2], Manas Singh[2]
[1]*Assistant Professor, Dept of Prosthetic Dental Sciences, College of Dentistry, Jazan University, (KSA)
[2]Postgraduate Student, Dept of Prosthetic Dental Sciences, Subharti Dental College, Subharti University, India
* Corresponding Author
Khurshid A Mattoo
Email: *drkamattoo@rediffmail.com*

Abstract
This article presents a review of the application of various medical sciences, including the fields of dentistry to help identify factors that prompts one to carry terror attacks, the one like 26/11. The article stresses the need of collecting relevant data through scientific research in various medical fields to understand the factors that lead to the growth of terrorism in our country. The article also discusses the role of psychology and other medical sciences including human behavior, criminology, sociology, community psychology to understand the hidden scientific aspects of terrorism and more importantly their application. Problem oriented research in every field is the need of the hour to evolve better protection for the citizens and the necessary modifications that our present day, adopted systems have. This article provides a rich source of hypothesis, theories and postulates for future terror related scientific research.
Keywords: *terrorism, 26/11, society, community psychology, behavioral science.*

Introduction

India besides world's largest democracy is also the second most populous country with a population of 1.3 billion. The country has 28 states, 7 union territories, 8 major religions, 22 official languages (398 living languages) and more than 2000 ethnic groups.[1] In terms of linguistic, genetic and cultural diversity; it stands second to the African continent. [1] Major challenges that faces the country are population control, poverty, unemployment, crime and corruption and of lately a surge in terrorism. Constant terror attacks like that in Mumbai on 26/11,[2] cautions us that there are some areas which need to be addressed, but professionally and scientifically. Terrorism in its simplest form is defined as the systematic use of terror especially as

a means of coercion.[3] The term 'International terrorism' refers to terrorism "involving citizens or the territory of more than one country."[3] Compared to other terrorism suffered nations; India is unique in having variety of terrorist types like separatist, insurgents, extremist, naxalites, maoists and fundamentalist etc. Terrorism is a disease that is pandemic in nature in India. As of March 2012, government has designated 37 terrorist groups.[4] Within 9 different states there are about 168 operating organizations not to forget international terrorist organizations. [4]

Status of current research versus problem oriented research

We as a nation have always shown reluctance to conduct research which is why we lack oversight,

proper training and funding while on the other hand there is increased pressure to publish. Result mostly seen is plagiarism. [5,6] Yet most of our professional organizations conduct research on par with the west, without realizing that not only the nature and characteristic of the population is different but also our problems are different from theirs. This explains why we have little or no scientific solution to problems that our country faces? Be it poverty, famine, population, drought or terrorism. We don't possess any substantial scientific data around which we can build our required projects to be effective and this explains why our systems fail. Most systems are adopted, rather than constructed out of our own relevant data. Data related to terrorism is conspicuous by its absence, if you ask google questions like "change in attitude towards medical treatment in patients affected by terrorism in India" or "effect of loss of family members due to terrorism on patients towards medical / dental treatment" or "studies on behavioral changes in patients affected by terrorism in India". There are no answers on any search engine about questions that are related to this issue.

What is felt is that, it is the responsibility of every professional to contribute at every individual level, but through scientific research that is problem oriented. Only evidence based research is going to prevent and solve the problems that our country faces. We have the world's largest clinical material at our disposal, which is 637 million males, 509 million females, 50% population young, 5,50,000 villages, 200 towns,[7,8] around 700 medical / dental schools, around 80000 medical/dental graduates, 2800 postgraduates in dentistry alone and around 2,25,000 dental practitioners.[9-12] Scientific areas that are linked either directly or indirectly with some aspect of terrorism are subjects like social sciences, anthropology, criminology, economics, forensics, history, political science, psychology, risk management, and community medicine.[13] One of the most evolving branches of psychosocial science is the behavioral science that studies the actions, including psychological and mental processes, of humans by means of observational and experimental methods. This subject is vast and is applicable to almost every branch of medical and dental sciences.

Dental Council of India has already introduced the subject to be taught in all the dental institutes of India, although the purpose may be different. As per the syllabus, every student should be able to develop skills of assessing psychological factors like behavior, motivation, personality and sociology. Behavioral science is already a part of postgraduate dental education in dentistry, but very little research is directed towards it.

Aspects of terrorism that need to be determined through research

Determining types: Our country has faced them all, be it Taliban, separatist, Naxalite or Maoists of different regions. Studies and research in community psychology should be directed to enable an analyst to understand the context in which the group is operating, which will assist in forecasting its likely future directions. Community psychology and behavioral sciences will identify whether groups work for single or multiple issues, whether they are nationalist, separatist or fundamentalist, rural or urban, state sponsored or operate independently and the type of warfare that they resort.[13] Cross cultural surveys among Indian population need to be directed to predict and determine the level of aggression in violent interpersonal assaults.[14]

Understanding rebellion, activism, radicalization and their modus of recruitment

Primarily, one needs to understand the issues that prompt one to be a rebel or activist of getting radicalized. Research in community medicine, psychology and behavior sciences need to be directed to systematically identify, enumerate and correlate root causes of origin of terrorism, which may range from general to specific factors including those at the individual, group, societal, community and governmental levels. [15,16] Terrorists work with common goals in mind. Incorporating, correlating and visualizing psychological, demographic, geographic and other relevant data will allow to analyze and map terror groups through techniques like social network analysis. [17-22] Research in behavior science is needed to study how the ideas that shape the objectives of terrorist groups are capable of influencing the thinking and daily

activities of new recruits and veteran operatives alike.

Understanding terror and terrorist psychology

Researchers should develop profiles of terrorist operatives based on structured and unstructured interviews with them and /or their friends, victims or associates. Such studies will reveal individual aggressiveness, narcissism, anti-social, personality disorder or paranoid personality disorder. [23] Studies in social behavior science can help detect and prevent attacks at the tactical level. For example, research in the behavior sciences could help us detect behaviors and patterns, such as gait and facial expressions that are characteristic of suicide bombers as they approach a target. These indicators could provide security forces at the intended site of the attack with a warning and interdiction opportunity. Gait analysis is becoming a very important analytical method to prevent suicide bombers running through a secured area. [24] Dentists should conduct studies on facial expressions/ body language/speech alteration and their relation to emotions among people.

Origin and dynamics of various organizations

As applied to the terrorism, according to Gurr, feeling of frustration and anger underlie individual decisions to engage in collective action against the perceived source of their frustration and constitute one of the necessary conditions for joining a terrorist group. [18] The types of organizational patterns chosen by groups are also intended to ensure loyalty, devotion and cohesiveness of their members because of the high premium placed by these groups on sacrificing one's life for the cause. [18,21] Terrorist organizational patterns have evolved from the more "traditional" hierarchical types of organization to increasingly cellular and network-based structures, whether these are single groups, or part of a "solar" network of linked groupings. [18,22,23]

Democratic set up allows some of the larger and more established terrorist groups to also maintain parallel 'legal' organizational structures, such as political, economic and social welfare front organizations, which enable them to expand their bases of support. Social network analysis can be utilized to develop network linkages within and among terrorist groups, [13] to identify the organizational structure of terrorist networks, [13,17] how they are formed, where cells are located, and the relationships within and among terrorist operatives, and among terrorist groups. [13,17,22]

Relevant data

Research need to focus on trends and perceptions of terrorism, the effectiveness of counterterrorism measures, impact of terrorism on society (political, psychological concerns and socioeconomic impact). Although most of the data is under the possession of government authorities which can be classified, at academic level, however one can collect data from open sources like media, community, local authorities like state police.

Role of medical sciences

Identifying suspicious behaviour: Security services like watchmen, CCTV cameras and police cannot reach every nook and corner in any public place like railway stations and airports. This makes it imperative that there is a need that population has the ability of identifying suspicious behavior. Terrorist events involving use of vehicle bombs need to be analyzed for such suspicious behavior which can be then used to educate the masses to avert future incidents.

Risk assessment

Segment of population deprived of their rights like the right to education, right to good health, status of primary health centers and hospitals, appropriate use of funds and medications in the medical sector, community level health facilities etc. need to be determined. Such relevant data is usually accidentally found while conducting medical research and are important characteristics of determining the vulnerability of certain section of the population.

Research in behavior sciences

As Dr Kurt Salzinger, APA's executive director for science rightly puts it that the September 11 attacks on world trade center wasn't a function of airplanes or buildings or technology but it was a function of behavior. [24] Every act of terrorism has to do something with behavior directly or indirectly. Research in behavior sciences will provide us a

psychological approach to conflict resolution, risk assessment categories, indoctrination into fanatical groups, hate crime prevention, status of bereaved families, political or moral backing, victims coping strategies and reasons for disengagement from terrorism.

Anticipated outcome of problem (terrorism) oriented research

Research on various factors that are associated with development of terrorism will provide us data that will be required to understand and cope with the problem. Some of the anticipated outcomes from various theories, hypothesis or postulates mentioned above are as follows:-

- Analyze the aggressive behavior of the population in terms of motivation, provocation, degree and range.
- Improving attention and observant behavior in one self, population and security organizations – Psychologists have found that people's observing behavior is controlled by the extent to which they find the object that they are looking for. [25] If we want baggage inspectors to look carefully, then they must at least occasionally detect the kinds of objects they are looking for. If they never find such objects, then they will stop looking very carefully; if they do find those objects, they will look more carefully. [26]
- Determine the behavior of our population during an emergency.[27] The design of emergency exits or evacuation facilities in a public place should be done keeping the behavior of the general population, in mind.[28,29]
- In order to improve the design of the medical emergency system and its protocol, studies should be directed to know when people are likely to help and when they will not. Terror attacks in India have been targeted in congested areas and it is sometimes difficult or impossible for health support system to reach the site through crowded areas. Studies related to people's knowledge of how to help are non-existent. "Bystander Effect"[30] a psychological phenomenon, has to be studied in every state to know who are the most likely people that would help in case of emergencies. The bystander effect also has been shown to be affected by the number of people around who observe the apparent attack.[31,32]

- Medical hospitals have emergency life support systems, but the kind of warning system during an emergency is same as that of others like police, fire brigade or even a politician's fleet. Studies to develop a new warning system for terror related attacks are extremely important, especially when terrorism is resolving to serial blasts in a particular area. A particular signal alerting the public will make them more vigilant and careful e.g. an SMS on a mobile may or may not prevent a serial blast, but definitely will reduce the casualties by asking people to keep vigilance around their surroundings.
- One of the most critical problems in emergency response is the lack of interoperable communications and authority. No authority exists to arbitrate the choice of communications systems across different community agencies (e.g., police, fire, medical) or the choice of systems across the same agency in neighboring jurisdictions. This problem is compounded where support components (e.g. Army, central reserve police force) is involved.
- Training of people to act effectively in situations that involve high risk, without exposing them to danger during the training procedures, e.g. computer-based immersive virtual environment technology (IVET). [33] During training, studies in behavior need to be conducted to compare how humans react in virtual reality with how they react in actual situations.[34]
- Problem oriented research in behavior sciences will help us to understand various forms of countering terrorism e.g. How some operatives end their participation in terrorism. Studies should be conducted on disengagement from terrorism by examining how some terrorists have left their groups because of dissatisfaction with their former groups or in response to a promise of immunity. Once such vulnerabilities in terrorist groups are identified, they can be exploited by counter terrorist organizations to increase dissatisfaction and dissension within groups and thereby weakening these groups and influencing members to leave.

- Need of behavior profiling - The art of what is sometimes called "profiling" - popularized in movies like "Silence of the Lambs" - was developed by behavior analysts and has been around for many years. It provides the basis for behavior analysis and brand new behavior profiles of terrorists. These profiles should be created based on the behaviors of identified and jailed terrorists. Not all people who display these behaviors are terrorists.

Conclusion

It is hoped that scientific research efforts in these and other areas will upgrade our capabilities to better understand and respond with the most effective countermeasures against the magnitude of the terrorist challenges facing us. The behavior sciences provides the methods that enable analysts and government practitioners to understand how to resolve terrorist insurgencies, as well as to measure the effectiveness of such countermeasures. Root cause analysis, for example, provides a methodology for research and systematically map the spectrum of root causes underlying a rebellion's origin, grievances and demand. In ideal cases, it is hoped that such mapping of root causes will then produce the knowledge to formulate appropriate governmental responses. An understanding of a conflict's underlying root causes can help a government effectively calibrate response, strategies and tactics to specific challenges and threats.

Acknowledgements

References

1. World Population Prospects, the 2015 Revision. United Nations Department of Economic and Social Affairs, Population Division, Population Estimates and Projections Section. July 2015.
2. Thomas LF. No Way, No How, Not Here. The New York Times. 2009
3. Terrorism. Merriam-Webster's Dictionary. 1795
4. Banned Organizations. Ministry of home affairs Available at http://mha.nic.in/bo
5. Gupta YP. Intellectual Fraud: Punishment For Plagiarized Research Must Be Severe. The Statesman.
6. Retraction notice to "Microbial production of dihydroxyacetone" [Biotech Adv. 26 (2008) 293–303]". Biotechnology Advances. 28: 938.
7. Demographics of India. Wikipedia, the free encyclopedia. Available at https://en.wikipedia.org/wiki/Demographics_of_India
8. India demographics profile 2017. Index mundi; available at http://www.indexmundi.com/india/demographics_profile.html
9. List of dental colleges in India. Wikipedia; the free encyclopedia. Available at https://en.wikipedia.org/wiki/List_of_dental_colleges_in_India
10. List of medical colleges in India. Wikipedia; the free encyclopedia available at https://en.wikipedia.org/wiki/List_of_medical_colleges_in_India
11. Medical colleges in India. Med India. Available at http://www.medindia.net/education/medical_colleges.asp
12. "Information desk: For students: List of Colleges Teaching MBBS. Mciindia.org. Medical Council of India.
13. National Strategy for Combating Terrorism. Combating Terrorism: Research Priorities in the Social, Behavioral and Economic Sciences; 2005: 7-8
14. Watson RI. Investigation into de-individuation using a cross-cultural survey technique. Journal of Personality and Social Psychology.1973; 25:342-45
15. Walter R. Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind (Washington, DC: Woodrow Wilson Center Press, 1998).

16. Bjorgo T. Root Causes of Terrorism.New York; Routledge: 2005.

17. Martin G. Understanding Terrorism: Challenges, Perspectives and Issues. SAGE Publications; 2003: 67-70

18. Gurr TR. Why Men Rebel. Princeton University Press: 1970.

19. Palmer M and Thompson W. The Comparative Analysis of Politics. Itasca, IL: F.E. Peacock Publishers; 1978: 291-95.

20. Glock CY. The Role of Deprivation in the Origin and Evolution of Religious Groups. New York. Oxford University Press; 1964: 24-36

21. Krueger A, Maleckova J. Education, Poverty and Terrorism: Is There a Casual Connection? Journal of Economic Perspectives.2003; 17:4

22. Kruglianski A. Inside the Terrorist Mind. Paper presented to the National Academy of Science annual meeting; Washington DC: April 29, 2002.

23. Horgan J. The search for the terrorist personality, in Andrew Silke. Terrorists, Victims and Society: Psychological Perspectives on Terrorism and its Consequences. New York. John Wiley & Sons; 2003:3-27

24. Carpenter S. Behavioral science gears up to combat terrorism. American psychological association.2001;32(10):54

25. Holland JG. Human vigilance. Science. 1958; 128: 61-67.

26. Schroeder SR, Holland JG. Operant control of eye movements during human vigilance. Science.1968; 161: 3838.

27. Pauls J. Twenty years of building use studies conducted by the national research council of Canada. Safety in the Built Environmen. J.D. Sime (Ed.). Spon. London; 1988:5-17.

28. Sime JD. Crowd Psychology and Engineering: Designing for People or Ball bearings? Engineering for Crowd Safety. Elsevier Science Publishers; 1993:119-131

29. Juillet E. Evacuating People with Disabilities. Fire Engineering.1993; 146(12):100-103.

30. Cramer R, McMaster M, Bartell P and Dragna M. Subject competence and minimization of the bystander effect. Journal of Applied Social Psychology; 18(13): 1133-1148.

31. Tice D and Baumeister R. Masculinity inhibits helping in emergencies: Personality does predict the bystander effect. Journal of Personality and Social Psychology.1985; 49(2): 420-428.

32. Levine M. Rethinking bystander nonintervention: Social categorization and the evidence of witnesses at the James Bulger murder trial. Human Relations. Kluwer Academic/Plenum Publishers. 1999; 52(9): 1133-1155.

33. Antonietti A, Imperio E, Rasi C and Sacco M. Virtual reality and hypermedia in learning to use a turning lathe. Journal of Computer Assisted Learning. 2001; 17(2):142-155.

34. Thomas KGF, Hsu M, Laurance HE, Nadel L, Jacobs WJ. Place learning in virtual space III: Investigation of spatial navigation training procedures and their application to fMRI and clinical neuropsychology. Behavior Research Methods, Instruments and Computers. 2001; 33(1): 21-37.