

KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING HEAT STROKE IN GENERAL PUBLIC OF ISLAMABAD AND RAWALPINDI

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ABSTRACT

Objective: To assess the level of knowledge, attitude and practices of the general public regarding heat stroke in Islamabad and Rawalpindi.

Material and Methods: This cross-sectional descriptive study was conducted in public places of Islamabad and Rawalpindi from February 2017 to March 2017. A sample size of 281 was selected through convenient sampling technique.

Results: Of the total 281 participants, 247 had some knowledge of heat stroke while 34 had not heard the term. Of the total respondents, 241 were educated while 40 were illiterate. 64 thought sweating is the first symptom to appear in heat stroke while 58 thought that fever appears as the first symptom. Regarding prevention of heat stroke, 80 were in favour of restricted outdoor activities while 70 thought that use of umbrella could protect them against heat stroke.

Conclusion: Heat stroke is a preventable condition which needs regular awareness campaigns for the general public. Awareness about heat stroke was satisfactory in Islamabad and Rawalpindi territories.

Keywords: Heat Stroke, Heatwave, Seizure, Convulsion, Temperature.

INTRODUCTION:

Heat stroke means body temperature greater than 105.1 °F along with disorientation and a lack of sweating¹. However exertional heat stroke may be associated excessive sweating². Young children present with seizures followed by loss of consciousness, organ failure and death³. Heat stroke occurs when the environmental temperature rises above a threshold or impaired heat loss, resulting in abnormally high body temperature⁴. Exertional heat stroke (EHS) occurs in athletes, outdoor labourers, or military personnel engaged in a strenuous hot-weather activity or certified first responders wearing heavy

personal protective equipment. Heat stroke in Young children and elderly adults usually occurs when left in vehicles with closed windows⁵. Every year lot of people die in India due to heat stroke in summer⁶. In 2015 a summer heat wave killed more than 2000 in Pakistan mostly in Karachi⁷. Even in Europe thousands of people died of a heat wave in 2003⁸. Heat stroke is recognised in tropical countries like Japan and at the time of pilgrimage at Mecca⁹. Education is the single most important tool for the prevention of heatstroke. In this study Knowledge, Attitude, and Practice of the general public is judged as these are most important factors for reducing adverse effects due to heat stroke^{10,11}. The KAP of the public is affected by several factors like local climate type, socio-economic level of people and general public characteristics. KAP data can be considered as local indicators of awareness about the heat wave in a defined and limited area¹².

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OBJECTIVES: To assess the level of knowledge, attitude and practices of the general public regarding heat stroke in Islamabad and Rawalpindi.

MATERIAL AND METHODS:

It was a cross-sectional descriptive study conducted on the general public at public places like parks, hospitals, shopping malls and restaurants in Islamabad and Rawalpindi. Duration of the study was two months starting from Feb 2017 to July 2017. Total 281 subjects were interviewed through convenient sampling technique. A questionnaire was used for data collection. All those individuals (both genders) who were adults, able to understand the language and gave consent to appear in the interview were included in the study. Data were described using Microsoft word software. Variables studied were age, gender, monthly income level, marital status, knowledge, attitude and practices regarding heat stroke. Data were presented in tables and descriptive form.

RESULTS:

Out of total 281 subjects, 162 were male and 119 were females. The age distribution in years was; < 20 = 51, 20 – 30 = 106, 31 – 40 = 57 and above 40 = 67.156 of the respondents had income level less than Rs 10000 and 125 had more than Rs 10000. Of the total 241 were educated while 40 were illiterate. Occupation of the respondents were as follows; students = 103, security guards = 32, laborers = 30, hawkers = 13 and others = 103.

Knowledge about heat stroke of the respondents is given in table 1. Out of the total 247 had some knowledge of heat stroke while 38 had not heard the term. Out of the total, 118 thought that it mainly occurs in Karachi while rest did not have any idea of its place of occurrence. 72 % thought that most affected group is labourers, 18 % traffic wardens and 10 % for other groups.

DISCUSSIONS:

Heat stroke is common in summer in Pakistan where the environmental temperature is very high. International studies have found that heat stroke has significant adverse effects on human body leading to long-lasting disabilities.^{13,14} People have to work in an outdoor environment for their livelihood. Daily wagers and security personnel are particularly at risk of a heat wave. In 2015, a heat wave struck Karachi

Table-1: knowledge about preventive measure

Speciality	Frequency	Percent
Restricted the outdoor activities	80	28.5
drink plenty of water before going out	45	16.0
have a water bottle with you	28	10.0
use umbrella	70	24.9
cover the head with a wet cloth	46	16.4
wear light colored cloth	1	.4
Do not know	11	3.9
Total	281	100.0

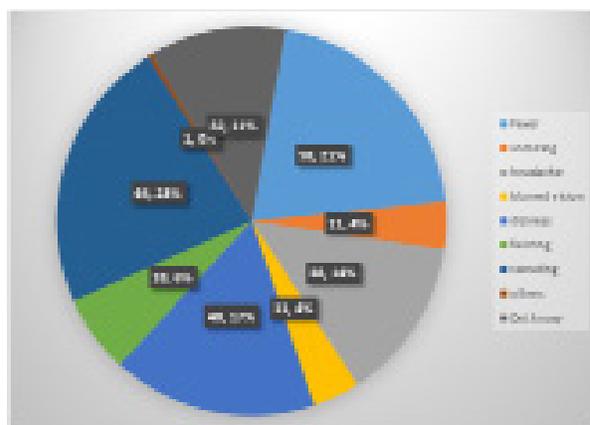


Fig 1. Knowledge about symptoms of Heatstroke

leading to the death of hundreds of residents of this metropolitan city. The general public is aware of this condition, but they have limited knowledge of its management and prevention. Globally and nationally limited work has been done to know about the knowledge, attitude and practices of the general public in case of heat stroke. In our study, most of the respondent thought that heat stroke occurs in hot areas of Pakistan like Multan. People think that avoiding outdoor activities is the only way to prevent heat stroke which is contradictory to the results of a study conducted in America¹⁵. They think that fever and vomiting are the leading symptoms of heat stroke which is according to the study results conducted in China¹². During the attack of heat stroke, according to participants, the person needs to be moved under shade and let them drink plenty of fluids. The preventive measure which the people need to adopt is the use of umbrella while going out, drink plenty of water while going out, restrict outdoor activities and cover the head with a wet cloth. It might be one of the reasons that people have access to mass media services that they have good knowledge of heat

stroke. This explains why populations in developed countries tend to be more aware of the current situation of the global environment than those living in underdeveloped world^{16, 17, 18}. Therefore, further efforts from individuals, local governments, and national institutions are needed to improve the KAP about heat waves by using mass and social media like TV, Radio, newspapers and internet as emphasised in another study.

CONCLUSION:

The KAP study results show that participants’ awareness level about heat waves was relatively high in Islamabad and Rawalpindi territories. However, some participants did not consider themselves to be potentially vulnerable, so they had low knowledge of the subject. The government should focus on health education through mass media campaigns to improve awareness regarding the negative effects of heat waves among the entire population.

REFERENCES

1. McGugan EA. Hyperpyrexia in the emergency department. *Emergency Medicine Australasia*. 2001 Mar 1;13(1):116-20.
2. “Info Sheet: Protecting Workers from Heat Illness”. OSHA–NIOSH. 2011.
3. Fauci AS. *Harrison’s principles of internal medicine*. New York: McGraw-Hill, Medical Publishing Division; 2008.
4. Bouchama A, Knochel JP. Heat stroke. *New England Journal of Medicine*. 2002 Jun 20;346(25):1978-88.
5. Meadows, Michelle (2014). “A primer on summer safety”. Academic OneFile.
6. Mallapur, Chaitanya (27 May 2015). “61% Rise in Heat-Stroke Deaths over Decade”. *IndiaSpend*.
7. Haider K, Anis K. Heatwave death toll rises to 2,000 in Pakistan’s financial hub. *Bloomberg News*. 2015 Jun;24.
8. Robine JM, Cheung SL, Le Roy S, Van Oyen H, Griffiths C, Michel JP, Herrmann FR. The death toll exceeded 70,000 in Europe during the summer of 2003. *Comptes rendus biologiques*. 2008 Feb 29;331(2):171-8.
9. Robert S H, Alcock J. Heatstroke. *Drug and diseases > Emergency medicine*. Updated July 06, 2016.
10. Grothmann T, Patt A. Adaptive capacity and human cognition: the process of individual adaptation to climate change. *Global Environmental Change*. 2005 Oct 31;15(3):199-213.

11. Liu T, Xu YJ, Zhang YH, Yan QH, Song XL, Xie HY, Luo Y, Rutherford S, Chu C, Lin HL, Ma WJ. Associations between risk perception, spontaneous adaptation behaviour to heat waves and heatstroke in Guangdong province, China. *BMC Public Health*. 2013 Oct 2;13(1):913.
12. Li J, Xu X, Ding G, Zhao Y, Zhao R, Xue F, Li J, Gao J, Yang J, Jiang B, Liu Q. A cross-sectional study of heat wave-related knowledge, attitude, and practice among the public in the Licheng district of Jinan city, China. *International journal of environmental research and public health*. 2016 Jun 29;13(7):648.
13. Shen T, Howe HL, Alo C, Moolenaar RL. Toward a broader definition of heat-related death: comparison of mortality estimates from medical examiners’ classification with those from total death differentials during the July 1995 heat wave in Chicago, Illinois. *The American journal of forensic medicine and pathology*. 1998 Jun 1;19(2):113-8.
14. Kan H, London SJ, Chen H, Song G, Chen G, Jiang L, Zhao N, Zhang Y, Chen B. Diurnal temperature range and daily mortality in Shanghai, China. *Environmental Research*. 2007 Mar 31;103(3):424-31.
15. Sheridan SC. A survey of public perception and response to heat warnings across four North American cities: an evaluation of municipal effectiveness. *International Journal of Biometeorology*. 2007 Oct 1;52(1):3-15.
16. Nitschke M, Hansen A, Bi P, Pisaniello D, Newbury J, Kitson A, Tucker G, Avery J, Dal Grande E. Risk factors, health effects and behaviour in older people during extreme heat: a survey in South Australia. *International journal of environmental research and public health*. 2013 Dec 3;10(12):6721-33.
17. Sheridan SC. A survey of public perception and response to heat warnings across four North American cities: an evaluation of municipal effectiveness. *International Journal of Biometeorology*. 2007 Oct 1;52(1):3-15.
18. Akompab DA, Bi P, Williams S, Grant J, Walker IA, Augoustinos M. Heat waves and climate change: Applying the health belief model to identify predictors of risk perception and adaptive behaviours in Adelaide, Australia. *International journal of environmental research and public health*. 2013 May 29;10(6):2164-84.