

Effect Of Sociodemographicals On The Post Operative Hypothermia

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Abstract

Background: Hypothermia occurs when the core body temperature of an organism is $<36^{\circ}\text{C}$, commonly affecting up to 70% of surgical patients perioperatively. Body temperature performs vital role in maintaining normal human activities. However, factors like, the use of anesthetic drugs, cold operating theater, skin antisepsis and cold irrigation of a patient with the body uncovered and the use of intravenous solutions during surgery can leads to a low body temperature.

Objective: objective of this study was effect of sociodemographicals on the post operative hypothermia.

Method: a hospital based descriptive observational study was undertaken. All the postoperative patients (N=250) that underwent anaesthesia were included. The body temperature was measured after immediately after surgery at the arrival of recovery room or Preanesthetic care unit in post operative period. Analysis was done using the software SPSS version 26.00.

Results:

Total 250 post operative patients were included in the study. Among them 185 (74%) patients had post operative hypothermia. Mean of age of hypothermia patients were 45.74 years. the maximum cases had hypothermia 173 (93.5%) were having Hindu religion. the majority of patients 63 (34.1%) had hypothermia patients were having no education. 84 (45.4%) had hypothermia they were having farmers. 79 (42.7%) had hypothermia were having monthly income between 11000-19999. 96 (51.9%) had hypothermia they were in rural residency. Therefore while considering p value <0.05 significant, there is no any significant association of hypothermia with socio demographical variables found.

Conclusion:

The majority of samples 50% were having age between the 19 to 40 years. There no any significant association was found between hypothermia and socio demographical variables.

Keywords: Hypothermia, Temperature, peri-operative, recovery room, ICU.

INTRODUCTION / BACKGROUND:

Body temperature performs vital role in maintaining normal human activities. However, factors like, the use of anesthetic drugs, cold operating theater, skin antisepsis and cold irrigation of a patient with the body uncovered and the use of intravenous solutions during surgery can leads to a low body temperature. Hypothermia occurs when the core body temperature of an organism is $<36^{\circ}\text{C}$, commonly affecting up to 70% of surgical patients perioperatively.³

Hypothermia is a common problem in anaesthetized patients and an important risk factor for mortality and morbidity. Management of body temperature is an important component perioperative nurses have a important role in caring for and monitoring patients within the Post operative period and it is imperative that they gain increased knowledge and understanding about the management of hypothermia to improve patient outcomes for surgical interventions¹

The mortality rate for institutionalized elderly patients is within the 50 to 80 % . range reported for American elderly populations. (Which possibly included institutionalized and non institutionalized groups), though we should stress that 50 percent of deaths from hypothermia among American elderly individuals occur in their homes. Other side, the mortality rate is higher than those found in other studies of hypothermia in the general population. In studies with only elderly subjects, though not institutionalized elderly, mortality rates range from 34.0 to 52.0 %. The numbers allows considering whether the mortality rate for institutionalized elderly should not in fact be higher than for the noninstitutionalized patients. The literature also mentions that half of the cases of hypothermia admitted to emergency services in the US are of elderly patients.²

METHODS:

Study design and period:

After institutional ethical approval the present study was started. descriptive observational study was conducted from April 2021 to April 2022.

Study area:

The study was conducted at Krishna Hospital & Medical Research Centre, Karad, Maharashtra and the areas was Recovery Room, Surgical ICU and Surgery wards. It is the largest super speciality, tertiary care hospital in Satara district which has different wards and ICU's. It has total 10 operation theatres and total bed strength of hospital is 1300 beds. Before transfer to ward patients are transferred to recovery room until vital signs are stable.

Study participants:

Post operative patients who were above 18 years and operated under anaesthesia at Krishna Hospital & Medical Research Centre, Karad, Maharashtra.

Inclusion criteria:

A post operative patient whose age is > 18 years, who's underwent surgery with anaesthesia; those are willing and available at the time of data collection.

Exclusion criteria:

Patients who are having mental illness, Burn patient and non Cardiac surgery patients were excluded.

Independent variables:

The independent variables were all socio demographical variables and risk factors of post operative hypothermia.

Dependent variables:

The structured data collection tool among post operative patients.

Assessment of post operative patients:

Individually purpose of study were explained to patients and taken informed consent. axiliary temperature was measured by using digital thermometer. (Dr. Odin digital thermometer type MT-101, with an accuracy $\pm 0.1^{\circ}\text{C}$ ($\pm 0.2^{\circ}\text{F}$), in the range of 32°C to 42.6°C that is 90.0°F to 109.9°F)The digital thermometer was calibrated in accordance with the manufacturer's instruction before each reading.

Analysis:

Data was analyzed by with the objectives of the study by using descriptive and inferential statistics. The plan of data analysis and interpretation was developed under the guidance of statistical expert. The data were entered in excel sheet and clean up then by using software SPSS version 26.00 analysis was done. 'p' value <0.05 was considered statistically significant.

Results:

Table 1: Association of hypothermia and no hypothermia with age. (n=250)

Factor	Hypothermia (%)	No hypothermia (%)	't' value	'p' value
Age:	185 (74%)	65 (26%)	0.181	0.857

Table 1: shows that, total 250 post operative patients were included in the study. Among them 185 (74%) patients had post operative hypothermia. Mean of age of hypothermia patients were 45.74 and standard deviation (SD) were 20.046, whereas Mean of age of no hypothermia patients were 45.23 and standard deviation (SD) were 18.097. 't' value were 0.181 and 'p' value was 0.857. It reveals that the age is not significant. ($p > 0.5$)

Table 2: Association of hypothermia and no hypothermia with Gender (n=250)

Factor	Hypothermia (%)	No hypothermia (%)	χ^2 Value	'p' value
Gender:				
a) Male	76 (41.1%)	29 (44.6%)	0.247	0.619
b) Female	109 (58.9%)	36 (55.4%)		

Table 2 shows that, among male out of 250 subjects 76 (41.1%) had hypothermia and 29 (44.6%) had no hypothermia and among female 109 (58.9%) had hypothermia and 36 (55.4%) had no hypothermia. Chi-square value 0.247; 'p' value 0.619, the p value shows that there were no significant association between gender and hypothermia. ($p > 0.05$)

Table 3: Association of hypothermia and no hypothermia with Education.(n=250)

Factor	Hypothermia (%)	No hypothermia (%)	χ^2 value	'p' value
Education:				
a) No education	63 (34.1%)	18 (27.7%)		
b) Primary	48 (25.9%)	24 (36.9%)	2.903	0.574
c) Secondary	40 (21.6%)	12 (18.5%)		

d) Higher secondary	25 (13.5%)	8 (12.3%)		
e) Graduate & above	9 (4.9%)	3 (4.6%)		

Table 3, shows that, the majority of patients 63 (34.1%) had hypothermia patients were having no education whereas the majority of patients 24 (36.9%) had no hypothermia were having primary education. Chi-square value 2.903; 'p' value 0.574, therefore 'p' value shows that there were no significant association between education and hypothermia. ($p = >0.05$)

Table 4: Association of hypothermia and no hypothermia with Religion

(n=250)

Factor	Hypothermia (%)	No hypothermia (%)	χ^2 value	'p' value
Religion:				
a) Hindu	173 (93.5%)	59 (90.8%)	1.161	0.762
b) Muslim	9 (4.9%)	5 (7.7%)		
c) Others	3 (1.6%)	1 (1.5%)		

Table 4, shows that, the maximum cases had hypothermia 173 (93.5%) were having Hindu religion whereas minimum 3 (1.6%) cases had hypothermia they were other religion. Chi-square value 1.161; 'p' value 0.762, therefore there were no association between Religion and hypothermia. ($p = > 0.05$)

Table 5: Association of hypothermia and no hypothermia with Occupation.(n=250)

Factor	Hypothermia (%)	No hypothermia (%)	χ^2 value	'p' value
Occupation:				
a) Skilled workers	35 (18.9%)	20 (30.8%)	8.603	0.072
b) Farmer	84 (45.4%)	31 (47.7%)		
c) Home maker	43 (23.2%)	12 (18.5%)		
d) Student	11 (5.9%)	2 (3.1%)		
e) Working on own field	12 (6.5%)	0 (0.0%)		

Table 5 shows that, the majority of subjects 84 (45.4%) had hypothermia they were having farmers whereas minimum subjects 11 (5.9%) had hypothermia they were students. The majority of subjects 31 (47.7%) had no hypothermia they were farmers. Chi-square value 8.603; 'p' value 0.072, therefore 'p' value shows that there were no significance between occupation and hypothermia. ($p = > 0.05$)

Table 6: Association of hypothermia and no hypothermia with Monthly Income.

(n=250)

Factor	Hypothermia (%)	No hypothermia (%)	x ² value	'p' value
Monthly family income:				
a) 30000-39999	1 (0.5%)	0 (0.0%)	8.999	0.061
b) 20000-29999	25 (13.5%)	6 (9.2%)		
c) 11000-19999	79 (42.7%)	17 (26.2%)		
d) 4000-10999	76 (41.1%)	40 (61.5%)		
e) 3999 & below	4 (2.2%)	2 (3.1%)		

Table 6, shows that, the majority of subject 79 (42.7%) had hypothermia were having monthly income between 11000-19999 whereas the majority of subjects 40 (61.5%) had no hypothermia were having monthly income between 4000 – 10999. Chi-square value 8.999; 'p' value 0.061, the 'p' value shows that there were no significance between monthly income and hypothermia. ($p > 0.05$)

Table 7: Residency wise distribution of hypothermia and no hypothermia.

(n=250)				
Factor	Hypothermia (%)	No hypothermia (%)	x ² value	'p' value
Residency				
a) Rural	96 (51.9%)	32 (49.2%)	0.136	0.712
b) Urban	89 (48.1%)	33 (50.8%)		

Table 7, shows that, the majority of subjects 96 (51.9%) had hypothermia they were in rural residency. Chi-square value 0.136; 'p' value 0.712, therefore 'p' value shows that there were no significance between Residency and hypothermia. ($p > 0.05$)

DISCUSSION:

Total 250 samples were included in this phase of study, among them half 125 (50%) patients belonged to the age group of 1940 years. The mean age of the samples were 39.13 years and the majority 145 (58%) were females. These findings are similar with the study conducted by, Tadesse Belayneh et al. the majority 205 (53%) was and majority of samples 200 (52%) were females but age group was somewhat different. The mean age 39 years was similar with the study conducted by, Fabricio Tavares Mendonca et al.

In the present study majority of samples 81 (32.4%) had found no formal education whereas the majority of samples 232 (92.8%) were Hindu religion, the majority of samples 115 (46%) were farmers in occupation and the majority of

samples 116 (46.4%) had monthly income between Rs 4000 to 10999 but there was no evidence of literature found that this factors were included.

In the present study, the majority of samples 128 (51.2%) were from the rural area admitted in tertiary care hospital but there was no any evidence of literature found regarding residency of samples but the study conducted by D. Karalapillai et al. had some inconsistency findings from the hospital type were 46% samples from private hospitals, 30% samples from tertiary care, 17% samples from metropolitan and 7% samples from rural hospitals type.

Limitation of study:

This study includes only post operative patients above 18 years. The other limitation of this study was lack of generalizability.

Conclusions and recommendation:

The occurrence of post operative hypothermia in recovery room at post operative period was high. The majority of samples 50% were having age between the 19 to 40 years. There no any significant association was found between hypothermia and socio demographical variables. All the surgical peri-operative team should be included to reduce the risk of post operative hypothermia and other complications for better prognosis of patient.

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