Tech Mahindra FOUNDATION

FIRST AID FOR IMPROVING SAFETY IN SCHOOLS

A Teacher's Perspective

A STUDY BY

TECH MAHINDRA FOUNDATION

AUGUST 2020 - 21

Rise for Good

FOREWORD BY CEO

We at Tech Mahindra Foundation strongly believe in 'Empowerment through Education' and work towards creating happier and safer classrooms. We foster this vision by empowering teachers, educators, and leaders in knowledge, skills, and attitude domains aiming for effective school governance. Through 'Shikshaantar', one of our flagship programmes in Education, Tech Mahindra Foundation has trained over 36,700 teachers of government schools in major cities of India, including Delhi, Mumbai, Bangalore, Pune, Hyderabad, Chennai and Kolkata.

Various workshops under the Shikshaantar umbrella aim at enhancing parental involvement, building capacity of teachers and educators on leadership, pedagogical skills, and competencies related to the subject of teaching-learning and enhancing parental involvement. For creating a conducive and safe learning space, the Foundation has initiated multiple interventions to create awareness about child safety and mental health, and capacitate teachers with counselling skills to ensure students well-being etc.

It is important to build a protected and safe environment for all and especially for small and young children as they may find it difficult to comprehend risks and control impulsivity. While the number of children enrolling in schools is increasing every year, exposure to several types of accident and injury risks is also growing commensurately as they spend maximum time in school. Global bodies such as the World Health Organization (WHO) point out that injuries are one of the leading causes of morbidity and mortality among children under the age of 18 years. Each year, around 8,75,000 children die because of injuries and tens of millions more require hospital care for non-fatal injuries and many of them are left with some form of disability which often has lifelong consequences.

In the context of these growing risks, the Foundation has made a special effort to carry out research to assess the potential risks in the school environment and preparedness of schools in responding appropriately to the emergency with adequate first aid solutions to avert a serious crisis.

One of the most important ways in which school safety can be supported is by having bystanders who are well versed in First Aid and related practices. Teachers become the primary caretakers of children in schools. To understand how teachers can become efficient first aid providers, Tech Mahindra Foundation has conducted this research that has aimed to understand the current knowledge, awareness level and perception of teachers regarding First Aid.

This research has helped to identify the way forward to promote safe environment in schools. To ensure quick emergency responses, it is important for schools to create good emergency response teams with clear job descriptions and job roles. Schools need to develop and adopt a first aid checklist and have tie-ups with nearby hospitals and dispensaries. They need to display emergency numbers and identify training needs to implement customised training programmes for teachers.

Tech Mahindra Foundation recognises the importance of empowering teachers as catalysts. Thus, the findings of this study can help to chart out the trajectory to build the next phase of action to strengthen school safety and improve knowledge and practice of First Aid to protect children and prevent injuries.

Rakesh

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Confidentiality Note: All personal details that may have been collected during this study has been deemed as 'private data' and hence maintains strict confidentiality and anonymity.

Disclaimer: This report is based on the data collected by Tech Mahindra Foundation from primary school teachers in Delhi, and from data available in secondary literature as open access. The data has subsequently been reviewed by the research team at Tech Mahindra Foundation. All surveys and recommendations made in this report are made in good faith and based on the information available to the research team at the time. The information in this report is believed to be true and every attempt has been made to ensure the reliability and validity of the data. However, no representation or warranty is given (expressed or implied) as to its accuracy or correctness.

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List of Abbreviations

CBSE: Central Board of Secondary Education

CDC: Centre for Disease Control and Prevention

CPR: Cardiopulmonary Resuscitation

DALYs: Disability-Adjusted Life Year

DCPCR: Delhi Commission for Protection of Child Rights

DDMPs: District Disaster Management Plans

DM: Disaster Management

ERT: Emergency Response Team

FAST: First Aid for Students and Teachers

GBD: Global Burden Disease

ICD: International Classification of Diseases

LMICs: Low- and Middle-Income Countries

MHRD: Human Resource Development

NCPCR: National Commission for Protection of Child Rights

NCRB: National Crime Records Bureau

NDMA: National Disaster Management

NIMHANS: National Institute of Mental Health and Neurosciences

PFHI: Public Health Foundation of India

RTE: Right to Education

RTIs: Road Traffic Incidents

SSA: Sarva Shiksha Abhiyan

UNICEF: United Nations Children's Fund

WHO: World Health Organization

Abstract

Children are vulnerable to injuries and accidents. At times they may even severely injure themselves. This may lead to fracture, bleeding, fainting, collapsing, etc. Along with that, some children can have certain medical conditions, which could require immediate attention and proper care on time to avoid any mishappening. Children spend one-fourth of their days' time in school and there are high chances that there may occur any medical emergency. It is important that schools must have a basic emergency response mechanism. This is further supported by government bodies such as the Delhi Commission for Protection of Child Rights and the National Commission for Protection of Child Rights, who through their guidelines emphasise on the importance of preparing schools in First Aid. This study is conducted in New Delhi, India and examined the current perception, level of knowledge, and awareness of primary school teachers regarding first-aid practices and how it can be further improved upon to make schools safer learning spaces for children. The key results show that while there is a gap in the knowledge and awareness levels of the respondents in the case of medical emergency services, but teachers have some basic level of awareness and knowledge. The majority is aware of the ambulance helpline number (96.5%), however, only about one-fifth of respondents (19%) are completely aware about what all services does an ambulance provide. More than two-fifth of teachers are completely aware of the essential supplies of a medical first aid kit (43.67%), but an extremely low percentage (6.24%) is completely aware of when to replace the first aid supplies. More than half the respondents (60.19%) said that they are aware of having a Medical Emergency Response Team in their schools, however, more than one-fifth (26.73%) of respondents shared that they do not have a Medical Emergency Response Team in their schools. Given that even though the majority of teachers have no prior medical or first aid training, yet close to 64% of respondents are able to identify the correct symptoms for choking. However, a lesser number of teachers are able to identify symptoms of common medical emergency situations like fracture, animal and insect bites, unconsciousness and breathing-related abnormalities. In the situations of animal/insect bites and fractures, which are common situations that occur in schools, the selection of correct responses is as low as 4.28% and 0.25% respectively.

Keywords: *First Aid, emergency, teachers, teaching community, students, safety, first aid emergency, government schools.*

1. Introduction

It is important to build a protected and safe environment for all and especially for children. Children may not always be able to shield themselves from accidents or vulnerabilities due to their physical size, difficulty in comprehending risks and impulsivity. Hence, a healthy environment with adequate safeguards becomes an important need for their sound development and advancement.

Children also spend a maximum of their time in school. On average a minimum of 6 hours per day is spent in school for approximately 250 days a year. This, if understood in hours per year is around 1,500 hours per year per child. Along with this factor, there are a greater number of children enrolling in schools every year.

Schools are institutions where children explore and develop their social-emotional and academic thinking to become productive and healthy members of society. To support this, children have a guaranteed fundamental right to education in a safe and protective environment that supports their growth and development. This makes the duty of all relevant stakeholders crucial to ensure safe surroundings for children - starting from their home base to their schools and back. The safety protocols include human-made risks, natural hazards, pandemics and less frequent situations of violence, fires, transportation and other related emergencies [2].

School safety protocols, as outlined by the National Institute of Mental Health and Neurosciences (NIMHANS) must include -

- Creating safer environments that reduce instances of injuries and accidents that may occur due to physical infrastructure.
- Providing safe transportation for children from home to school and back and also ensuring safe road behaviour.
- Preventing mishaps and injuries emanating from sports and other extracurricular activities.
- Ensuring and developing the understanding and knowledge of safe behaviour among students to further support a holistic development.

One of the most important ways in which school safety can be supported is by having bystanders who are well versed in First Aid and related practices. First Aid, as defined by Sunil Kumar D et al is "the assessments and interventions that can be performed by a bystander (or by the victim) immediately with minimal or no medical equipment. The primary objective of first aid is to alleviate suffering, facilitate the healing process and minimize damage. Often the first action taken for the management of injuries and common illness decides the future course of disease and complication rates" [2]. Sunil Kumar D et al suggest that providing timely and correct first aid can help in minimizing the damage and is as important as taking the child to a professional medical facility.

Therefore, teachers can provide frontline protection to students in case of any unforeseen emergency if they are equipped with First Aid knowledge and understanding. They can also become catalysts of disseminating the knowledge and awareness of First Aid practices among their students that can further be imparted to the student's family members and the community at large.

A child, as defined by the United Nations is every human being aged below 18 years, unless the relevant laws may recognise an earlier age of majority [1]. The scope of this research paper focuses on government school teachers and draws from their experience with primary grade students who are aged between 4-11 years. However, the secondary literature may have data of children anywhere between the age group of 0-18 years.

This study has sought to understand how school premises can develop appropriate First Aid responses with teachers being the catalysts and playing an important role to ensure the safety of children and avoid accidents and injuries. The study has done so by understanding the current awareness and knowledge of primary school teachers regarding First Aid and related practices.

Child Safety - How injury among children is a Public Health issue

Unintentional injuries occurring because of accidents during adolescence are a worldwide public health problem and is one of the major reasons for mortality and disabilities [2, 3]. These are injuries that are unplanned and can be prevented with proper safety protocols in place. According to a 2019 report by the National Institute of Mental Health and Neurosciences (NIMHANS), unintentional injuries have resulted in approximately 7.2% of all causes of death and 6.3 million disability-adjusted life years (DALYs)[1] among children below the age of 14 years.

The United Nations Convention on the Rights of the Child (1989) prescribes that every child has the inherent right to life, survival and development, including the right to the highest attainable standard of health and to the facilities for the treatment of illness and the rehabilitation of health. India is one of the signatories to this convention [4].

According to Sunil Kumar D et al, children are vulnerable to injuries and accidents and sometimes these injuries can be severe and resulting in fractures, bleeding, fainting or even drowning [5]. World Health Organization (WHO) also points out that injuries are one of the leading causes of morbidity and mortality among children under the age of 18 years. Each year around 8,75,000 children die because of injuries and tens of millions more require hospital care for non-fatal injuries and many of them are left with some form of disability which often has lifelong consequences[1].

WHO suggested that the deaths and injuries can be reduced by careful implementation of research in the field, data system development, the adoption of specific preventive measures, changes in the local environment, legislation, public education, improvements in the level and quality of emergency and trauma care and project evaluation [1].

[1] DALY - A time-based measure that combines years of life lost due to premature mortality (YLLs) and years of life lost due to time lived in states of less than **full** health, or years of healthy life lost due to disability (YLDs).

Injuries and Types of Injuries

According to the Centre for Disease Control and Prevention (CDC), an injury results from a sudden exposure to physical agents such as mechanical energy, heat, electricity, chemicals and ionizing radiation that interacts with the body in amounts, or at rates that exceed the threshold of human tolerance [6]. There are some cases such as drowning and frostbite where injuries also result from the sudden lack of essential components like heat and oxygen [7]. The extreme exposure and the interaction between the human body and the environment lead to organ damage when it is more than the physiological tolerance of the person.

On the outset - the type of injury is classified based on the intent: it may be 'unintentional' or 'intentional'. Unintentional injuries, as the word suggests, are injuries that are unplanned. These include RTIs, burns, falls, drowning, mechanical injuries, fall of objects, sports-related injuries, among others. Intentional injuries are those which already have an intent of injuring someone. These include harm caused by interpersonal conflict, violence (domestic, youth, etc.), suicide, deliberate self-harm and child maltreatment among others.

Technically, the classification of injuries is done as per the International Classification of Diseases (ICD) under anatomical and external codes to support comparisons and deeper understanding. The place of occurrence is also used to classify injuries (such as road, home, or play site injuries) and products causing injuries.

2.1. Children have a higher risk of injuries

Children go through a lot of developmental changes in their growth periods between infancy to adulthood. These changes include cognitive, physical, psychological, and social behaviours that influence their perceptions, curiosity, risk perceptions, judgement in their actions and reactions to all stimuli in their surroundings. The amalgamation of all these factors influences their susceptibility to injuries[8]. This susceptibility and vulnerability of children towards injuries are further influenced by a complex set of factors. These factors may be understood in the following way (figure 1)-

Figure 1: Common injuries across age groups

Age	Common injuries	Phase in the child's life
0	• Accidental poisoning • Drowning • Burns • Fall related injuries • Road Traffic Injuries (RTIs) in unsupervised parental conditions.	Movements exhibited by the child includes - rolling, crawling, climbing, walking. Environment - mostly confined within their homes or immediate surroundings. Influences - They are attracted to colours, fluids, and movements of objects. These are mostly items easily accessible in the child's environment that they can put in their mouths. Risk perception - They cannot differentiate between what is safe and what is harmful.
5	• RTIs • Poisoning • Fall related injuries • Violence	Environment and interaction - comparatively higher due to exposure of schooling and socialization. This makes the child more independent but remains under supervision of guardians. This is a phase where the child starts exploring different possibilities to develop judgement and competence.
10	• RTIs • Fall related injuries • Burns • Drowning • Sports related injuries • Poisoning • Insect and animal bites • Violence	Period of puberty - leading to physical, psychological, and socio-cultural changes. Less supervision - resulting in higher exploration of environment. Greater development of logical thinking. More susceptibility of peer pressure that may result in impulsive decisions and movements.
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Source - Advancing Child Safety in India: Implementation is the Key, NIMHANS (2019)

Figure 1 explains the most common injuries faced by children across different age groups. This is explained by connecting it to phases of the child's life to better explain their level of interaction with their surroundings. The cognitive abilities of children are comparatively lesser than adults. This is because their motor and nervous functions are still in the developmental stage. This influences their judgement of risk and danger vis-à-vis their immediate surroundings (schools, homes, roads, etc.). This risk perception is often limited, and this makes them more vulnerable to injuries. The physical size of a child also puts them at a greater risk of injuries due to their smaller and softer structure as compared to adults. This makes them less visible too. All these physical factors affect the energy absorbing capacity of the body that may lead to greater damage by physical forces [9].

As children start growing up and go through adolescence, their interaction with the outside environment increases. This is further facilitated by interactions in schools. This stage is often met with peer pressure to explore and excel in different activities/behaviours and movements. This may lead to taking impulsive decisions resulting in an increased probability towards injuries and harmful decisions. Therefore, it becomes important to ensure safety protocols are in place.

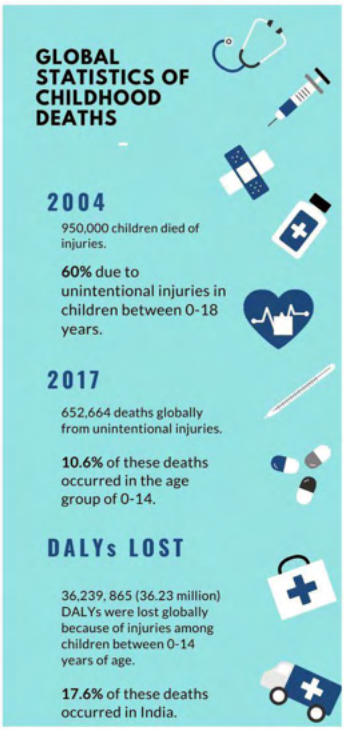
2.2. Status of Childhood Injuries in India

Global Scenario

There has been a shift from communicable to non-communicable diseases and injuries as a cause of child deaths. This is understood from the global epidemiological patterns.

A 2008 report by the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) explains the global picture of childhood injuries. The report discusses that even though there have been positive developments in public health interventions at local and national levels, the risk to injuries among children has continued to rise, especially in the low- and middle-income countries (LMICs).

These risks also include hospitalization for non-fatal injuries, with many injuries leading to some form of disability in the children with lifelong consequences.



GLOBAL STATISTICS OF CHILDHOOD DEATHS-

Source: Global Burden of Disease (GBD), 2019, Peden MM, UNICEF, World Health Organization, editors. World report on child injury prevention. 2008, and NIMHANS report 2019 titled 'Advancing Child Safety in India: Implementation is the Key'.

*Data from 2017

Indian Scenario

According to a 2017 Global Burden Disease (GBD) report [10], India has witnessed 11.1% of all unintentional injury-related deaths. Out of all the deaths in India, 7% occur due to injuries (7,23,178 deaths due to unintentional injuries across age groups) and almost 1 out of 10 of these deaths occur among children between 0-14 years of age [7].

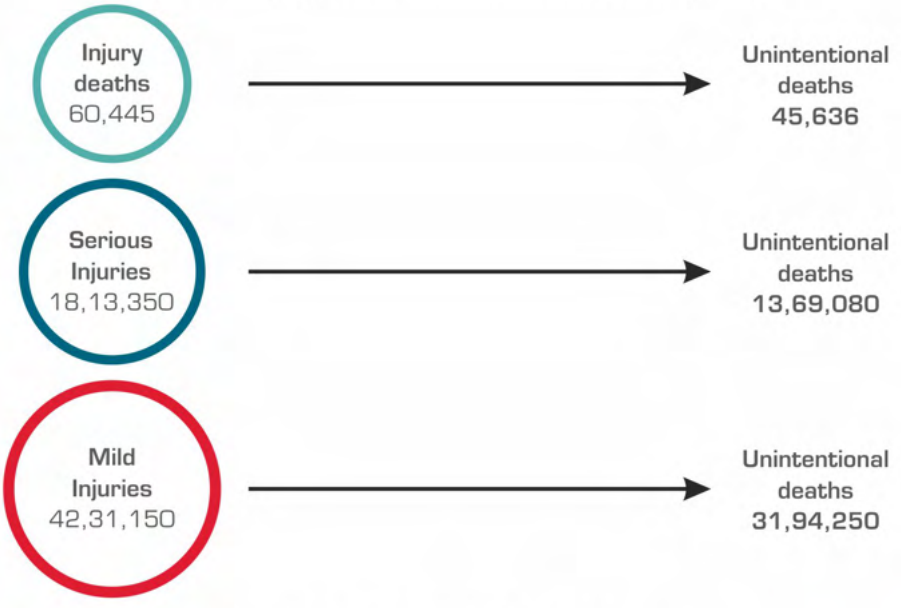
Table 1: Mortality in India from unintentional injuries

Reporting Body	Year	Age-Group	Total Deaths	%age of Deaths
GBD	2017	0-14	72,268	6.6%
National Crime Records Bureau (NCRB)	2015	0-14	15,096	—
Medical Certification of Cause of Death (MCCD)	2015	0-14	—	5.1%

Source: *GBD-2017: Deaths due to unintentional injuries (all ages) = 723178 (children 0-14 years=72268) [7] MCCD - 2015: Deaths due to injuries (all ages) = 73828 (children 0-14 years=3721[11] * *Nation within nations report, India[12]

The mortality rates of children aged between 0-18 years from injuries (natural + intentional + unintentional) are estimated at 50,371 according to the NCRB report of 2015. Approximately 45,636 deaths occurred from unintentional injury cases of RTIs, burns, drowning, poisoning, etc. [6] The GDB report of 2017 gives an estimate of 72,268 deaths in the year 2016 because of unintentional injuries [7].

Figure 2: Injury related deaths in India (<18 years)



Source: NIMHANS report 2019 titled 'Advancing Child Safety in India: Implementation is the Key'.

Figure 2 explains that in the year 2015, India witnessed 30 injuries and 70 mild injuries for every death among children below the age of 18. Nearly 1.81 million children suffered serious injuries and 4.23 million children had mild injuries.

> *"In India, injury death rates are higher among younger age groups, the number of deaths are higher among children above five years of age..."*
>
> -NIMHANS, 2019

Injuries and Disabilities

Any form of injury and disability occurring due to injury can result in complications in the form of physiological, psychological, social, environmental, and financial. This may further affect the child's everyday routine and that of their families. The impact and extent of the disability is dependent upon the child's age and the severity of the injury. For example, a burn may result in some form of disfigurement in the child as compared to a fall that may lead to the child losing their ability to be mobile. According to the GBD study of 2017 [9], injuries resulted in a loss of 6,354,369 DALYs (6.35 million DALYs) and 72,268 deaths in children aged between 0-14 in the year 2017 in India.

State-wise data from Karnataka reports that 19% of DALYs among children (0-14 years) were from unintentional injuries, as per the Karnataka Disease Burden profile by GBD [13]. A large-scale population study of traumatic brain injury was conducted in Bengaluru by Gururaj et al in [14] 2005 and according to this, approximately 15% of injured children had different levels of disability at 24 months post discharge.

3. School and Child Safety in India

3.1. Overview of school and child safety in India

The implementation of Sarva Shiksha Abhiyan (SSA) and Right to Education Act (RTE), 2009 in India has resulted in an increase in the enrollment in the primary schools and in 2019 it was reported to be 96.83% [15].

- Census data tells us that the school gross enrolment ratio has seen an increase from 81.6% in 2000-01 to 96.9% in 2014-15 [16]. Students enrolled in public schools have increased from 247.9 million in 2011 to 261.9 million in 2016.
- Since most of the young population spends one-fourth of a day's time in primary schools, it is important to provide a safe environment for them and have safety protocols in case of any medical emergency.

According to the 2017-18 Economic Survey of Delhi[17]:

- There has been an increase in the number of schools from 5,155 in 2012-13 to 5,772 in 2016-17.
- There has also been an increase in the enrollment of students 42.68 lakh in 2012-13 to 44.43 lakh in 2016-17.

The points mentioned above reiterate why school safety is indispensable.

As discussed in the previous sections, childhood injuries could result in physical and/or psychological impacts with lifelong repercussions on children and their families. Such damages and impacts may lead to cognitive impairment and hence hamper their development. According to research by Jildeh et al 2013 [18] and the CDC [19], sports injuries and RTIs (Road Traffic Injuries) are the most common unintentional injuries among school children. In a 2016 study conducted in Hyderabad that sought to understand RTIs among children during their school commute, RTIs were reported by 17% of children aged between 11-14 as the cause of injury[20,21]. Dorje et al 2014 in a study conducted in Chandigarh reported sports injuries occurred at a rate of 48 per 1,000 hours of school time[22,23].

Other types of common unintentional injuries reported among school children that may occur outside school premises include burns, drowning, and poisoning.

School safety is a collaborative effort with the coordination of government bodies, education departments, teachers, parents, children and the society. While a paradigm shift has been noticed in the past decade in terms of the role of health, safety, injuries and safety nets for school students, implementation of safety policies and programmes remains a challenge.

3.2. Overview of School Safety Policies in India

In India, at a legislative level, the issues of child safety have been recognized and a few steps have been taken in this direction. Ministry of Human Resource Development (MHRD) has formulated a National Disaster Management and School Safety policy in 2016[24] that outlines various measures to be undertaken by schools to ensure the well-being of students through capacity building, development of appropriate safety plans, and integration of the directives in their curriculum. The mandate requires training of students, teachers and other staff in first aid and life support, as well as a provision of a disaster management (DM) kit in each school. Schools are required to establish networks with a nearby hospital/health Centre for medical emergencies. Few points that are highlighted in the policy are as follows -

- The District Disaster Management Plans (DDMPs) must include tools to make District level baseline of schools safer such as through 'Rapid Visual Screening' or any other tool to cover all hazards relevant to the area; ensure closer proximity of emergency and crisis services from schools; ensure the adequate physical capacity of school buildings and have facilities to safeguard against emergencies.

- Ensure training students and teachers in dealing with emergency medical situations in terms of recognizing warning signals, knowledge of first aid and basic life support, knowledge of evacuation routes, availability of personal and group counselling and support following disasters or emergencies.

- Development of creative modules for training teachers on issues of emergencies, disasters, and associated risks; develop child-friendly content to spread awareness among students; develop modules for peer training.

MHRD, the Department of School Education and Literacy and the Government of India in February 2017 directed all states to implement the NDMA National School Safety Policy Guidelines [25]. However, most states in India lack state-specific school safety policies, guidelines, or SOPs.

Taking cognizance of the issue, Vice President Shri Venkaiah Naidu, at a CPR camp gathering in 2018, stressed the need for a legislation to make CPR training compulsory in all Indian schools [26]. However, none of the above guidelines have been translated into a parliamentary bill and there is no separate legal provision in place to enforce compulsory training curriculum in schools, yet.

The National Disaster Management Authority (NDMA) in collaboration with the Indian Red Cross Society (IRCS) [27] has also prepared a draft comprehensive module for first aid training in schools that provides a detailed overview of the components of the training.

The Delhi Commission for Protection of Child Rights (DCPCR) that was constituted in 2008 under the Commission for Protection of Child Right Act, 2005 created an expert committee in May 2009. The objective was to identify psycho-physical requirements and medical crisis management mechanisms in schools of Delhi. A circular issued by the Directorate of Education (DoE), Government of National Capital, Capital Territory of Delhi and DCPCR listed these guidelines on 'medical crisis management'[28] in 2010. Some observations that the circular includes are as follows -

- That the school health programme must include medical school authorities, parents, civil society organizations, teachers, guardians as important stakeholders along with an Emergency Response Team (ERT).
- Schools to ensure safety and accident prevention as part of their regular curriculum and standard procedures.
- Adherence to basic safety standards in schools.
- A complete emergency/First Aid kit is kept in secure locations that are readily available for ERT, teachers, other volunteers in case of any emergency.
- Training of staff and students in CPR and First Aid responses for emergency prevention and intervention.

Therefore, the creation of school safety committees has been given a lot of importance, i.e., a committee with designated resource persons to oversee, manage, coordinate, and implement safety measures within schools. Along with the creation of such committees, increasing importance has also been given to providing training to staff members and students in First Aid responses and practices. A study conducted by NIMHANS [6] in urban and rural schools of Bengaluru showed that while 65% of schools had school safety committees and approximately 58% of the schools had designated staff members for safety promotion, there was still a need to train the designated staff. Moreover, the study also observed that 35% of the schools reported the absence of staff members during safety activities in school.

Therefore, this reflects on the implementation gaps in utilizing government guidelines on school safety and First Aid. It is important to ensure and implement policy guidelines and SOPs in every school. These guidelines should also be in line with the state and national level school safety policies to catalyse all efforts of safety interventions.

NIMHANS study in Bengaluru showed[6] that 38% of rural schools and 31% of all private schools had school safety guidelines. This shows that less than half the schools reported to have school safety guidelines. The study further reported that the responses provided by public schools may be considered as *"being ignorant of the national school safety guidelines, which is applicable to all public schools."* The study found that 74 schools (56.5%) had SOP for emergency communication and when compared to schools in rural areas vs urban areas - close to 71% of public schools in rural areas had SOPs for communication as against 32% of public schools in urban areas.

3.3. Schools and First Aid Response

The aforementioned points have already established that schools are an important platform for health promotion and prevention due to two major reasons; first, schools provide vast opportunities for learning to students and second, students spend a significant amount of time involved in various activities in schools (such as sports and physical exercises) and hence, making them vulnerable to injuries. In developing countries, however, school health services are not given adequate importance, as also supported by Samghan et al 2015 [29] in their study titled 'Primary school teachers' Knowledge about First Aid'. This may have a direct impact on the management of common illnesses and injuries for which first aid care becomes crucial.

India has seen many initiatives that promote school health management, such as the "framing criteria for healthy schools - seal of approval" [30] that is an initiative by HRIDAY, AROGYA World and Public Health Foundation of India (PFHI).

The Central Board of Secondary Education (CBSE) in a circular [31] issued in 2015 wrote to all affiliated schools to provide first aid training to students and ensuring first aid facilities in schools. It also notified that the topic of First Aid will be integrated in the Disaster Management curriculum of the schools. In 2020, CBSE issued another circular [32] notifying the development of the 'First Aid for Students and Teachers (FAST)' mobile application that will help provide training in first aid to teachers and students. However, the research team could not gather substantial literature evidence on the implementation of the same.

- Studies conducted in Mangalore, India [39], Chandigarh, India [33], and Mysore, India [4] showed only 55.6%, 62%, and 25% of schools respectively that had first aid boxes. This is in contrast to a study conducted by Qureshi et al 2018 [34] in Karachi, Pakistan that showed that 100% of all schools surveyed had a first aid box in school.

- The study in Mangalore [39] further enquired about First Aid medicines and found that only 5 out of the 9 schools had first aid kits and none of them were well equipped. It only had paracetamol syrup or tablets were available and used as an antiseptic solution or ointment and for treating fever. However, the study conducted in Chandigarh [31] found that antiseptic ointment and paracetamol were available only in 22% and 16% of schools restively. Hence, these research findings show that the first aid kits were not fully equipped.

- An article published in The Hans India in 2018 [35] reported the status of first aid response in the schools of Hyderabad, India. According to the report, many government schools of Kukatpally and Serilingampally district do not have first aid kits or health centers on or nearby school campuses.

- Many schools in India also do not have full-time medical professionals as permanent employees. This can be supported by the research findings from the study in Mangalore [39] where none of the schools had a liaison with any health care provider. Only one school had a medical room for medical emergencies.

National Commission for Protection of Child Rights (NCPCR) which is a statutory body under the Commissions for Protection of Child Rights Act, 2005 conducted a study[36] in 2019-20. The study surveyed private and government schools across different states and Union Territories of India (Chandigarh, Chhattisgarh, Jharkhand, Gujarat, Haryana, Madhya Pradesh, Meghalaya, Mizoram, Odisha, Uttar Pradesh, Uttarakhand and Rajasthan). The findings discuss the status of safety in schools based on indicators given in the RTE Act of 2009 and the guidelines on safety and security given by different departments. Infrastructure, Health & Hygiene and Psycho-social aspects are the key themes on which the survey findings were analysed. Key findings of the study are highlighted below that also support the argument of schools in India not addressing child safety and security in a comprehensive manner.

On Laboratory safety-

- The study found that 60% of schools that had laboratories did not have any display of First Aid procedures.
- Only 33% of schools reported to have a trained team in place to mitigate any emergency that may occur in the laboratory.
- 44% of schools reported that they did not have any preparations for managing emergencies in case of any eventuality in the laboratories.

Whether the surveyed schools maintain minimum standards of safety-related to sports and transportation -

- Only 43% of schools stated that their medical room was equipped to handle medical emergencies and the majority stated otherwise.
- Out of the schools that had provisions of transportation for students via a school bus, only 46% had busses equipped with a first aid box. This finding was concerning because the study also stated that only 43% of all the schools that had school bus facilities were reported to follow local transport rules. In terms of having any guardian present during transportation - only 18% reported to have a teacher or an attendee present.

Therefore, the studies above highlight inadequate first aid and safety responses of schools. When students are in school, teachers become caregivers and supervisors, and hence it becomes important for the teachers to intervene and take appropriate action of care and management of the emergency before the arrival of/or to medical facilities [37].

4. Current Status of First Aid Knowledge among School Teachers in India

Most incidents of injury and accident can be managed well and, in some cases, can be intervened before it becomes life-threatening. In a statement given to The Indian Express in 2019[41] by Dr. S Saravana Kumar, who is the head of the Accident and Emergency Medicine department at Dr. Mehta Hospitals said, "In case of profuse bleeding, there are 25% more chance of survival if first aid is performed instead of waiting for the ambulance. When it comes to first aid, people do what should not be done, further worsening the condition. For example, in the case of an accident, water is given to the victim. You should never give a trauma patient anything through the mouth as he/she can aspirate into the lungs and die immediately," (Dr. S Saravana Kumar for The Indian Express, published on May 1st, 2019).

Studies conducted in schools in various parts of the world, including India, have reported sub-optimal levels of knowledge, and understanding of first aid among both students and teachers [38, 39, 40, 41, 42, 43]. Literature on the status of first aid training in Indian schools is currently limited.

A study of first aid awareness and practices among 146 teachers in 9 schools in Mangalore[44] highlighted the need for better preparedness of schools in handling accident and injury situations, in terms of first-aid kits and trained personnel, appropriate provision of first aid equipment and networks with healthcare providers. Less than half of the teachers interviewed were trained in first aid and about 55% of the untrained teachers stated a lack of opportunity as the reason for no training. Only 25% of the teachers had heard about cardiopulmonary resuscitation (CPR) and 66% were willing to enroll in such programs.

A similar study among 263 teachers in 40 schools in Mysore [4] reported inadequate knowledge about first aid among teachers. 97% of the teachers had only heard the term. The practice of first aid was also not up to the mark.

In general, a survey by an online doctor consultation portal supports the claim that Indians generally lack the understanding and skills in providing first-aid support. This survey shows that around 98% of the Indians participating were not trained in basic CPR and less than 5% even knew about it [45].

These figures highlight the knowledge gap regarding first aid and related practices among teachers and community stakeholders. These findings become alarming when evaluating schools in India from the perspective of having strong first aid responses. There have been cases in the past where students have succumbed to death due to the lack of the school's first aid response. A news article published in February 2019 in The Indian Express[46] reported the death of a two-year-old school student in Chennai who choked on their food while in school. The report further elaborated that the student's life could have been saved if the teachers had the knowledge and practice of providing 'Heimlich manoeuvre' which is a first-aid procedure for "dislodging an obstruction from one's windpipe where a sudden strong pressure is applied on the abdomen, between the navel and the rib cage" (Navya, KV, The Indian Express, 2019).

Therefore, it re-emphasizes the importance of generating the knowledge and understanding of first aid practices, especially in schools to help avert injury-related illness or disabilities and enhance the overall safety of students. Teachers, in turn, can train the students, which can increase the number of bystanders that can assist in times of emergency. Moreover, children can act as catalysts to further impart first-aid skills to their friends, families and the larger community. Such knowledge can also boost self-confidence in young people, encourage them to adopt healthier lives and adequately prepare them for risks[47].

5. About this Study

5.1. Scope of this Study

The scope of this research paper is to understand how teachers can be made catalysts of first aid knowledge providers and become effective bystanders in case of any emergencies occurring from intentional or unintentional injuries in school children.

School teachers are the first line of protection and the primary caregivers at school who can take the responsibility of ensuring the well-being of children. One of the most benefitting ways of doing so is through the knowledge and practice of First Aid.

First Aid practices largely consist of series of uncomplicated procedures that in some cases can also divert from life-threatening dangers. Any person can perform using practical equipment and supplies without the need of any prior medical training [48]. Therefore, it may become crucial to be equipped with the correct knowledge and right set of skills to provide First-aid support in any medical emergencies before professional medical help arrives. Along with that, in a longer term, schools can be the perfect setting to impart the same knowledge and skills to the students and educate the next generation to handle the medical emergencies positively.

It is therefore hypothesized that medical emergency responses can be strengthened in schools if we have teachers at the first level of intervention with knowledge, skills and awareness about the first aid situations and practices during any emergency.

5.2. Research Question

What are the perceptions, the level of knowledge, and awareness of primary school teachers regarding first aid and related practices? Through this research question, the current understanding of the teachers, the implications, and preparedness of addressing first aid in emergency situations is assessed. It also focused on understanding the teachers' knowledge and skills in handling the basic medical emergencies which children face in schools.

6. Materials and Method

This research was conducted in Delhi with an adequate representation of government school teachers belonging to different socio-demographic data.

6.1. Sample

The sample cohort included primary school teachers. Approximately 16% of this study's selected sample of teachers (i.e., 12,000) were considered for data collection. A purposive random sampling technique was used to select different government schools. This sampling technique was chosen based on prior research permissions received from gatekeepers from specific areas. A simple random technique was used to identify primary school teachers. All pre-school and primary level schools (up to grade 5) were invited to participate in the study.

6.2. Preparation of Questionnaire

The questionnaire was prepared as an online survey form as all schools remained closed due to the COVID-19 pandemic. The survey form included questions that aimed to understand the perception, knowledge and understanding of teachers. The questionnaire was then checked for content validity by public health professionals. In total, there were 18 items (perception 6, knowledge 4, awareness, 8). The items of questions sought to understand the respondent's understanding of common first aid emergency situations; first aid practices; symptoms to observe during a first aid emergency (e.g., situations of animal and insect bites, fracture, unconsciousness, choking, among others); prevention methods.

The online survey was translated into Hindi. The respondents were given a choice to answer either the English or the Hindi survey. The survey was piloted with ~5% of the sample size. The revised questionnaire was shared with the respondents in a digital format as a mixed questionnaire.

6.3. Ethical Approval

Ethical approval was granted by the Research and Ethics Review Committee of Tech Mahindra Foundation. Relevant gatekeepers were approached to seek their approval to conduct a research study in their respective communities. An informed written consent form was obtained from all participants.

6.4. Data Collection

The data collection was conducted by the core research team. All survey forms were collected and coded to ensure the anonymity of the respondents. Data were stored in password protected files only accessible to the core research team. Data were analysed using MS Excel and MAXQDA 11.

6.5. Analysis Process

Since the survey format was mixed in nature, for the subjective questions-common themes were identified and coded to describe the content. The coded themes were further used to identify different patterns and represented through infographics.

The objective questions, particularly related to the participant's knowledge about first aid situations and first aid essentials are categorized using the following scale:

Table 2: Five-Point Likert Scale adapted for objective survey questions

Scale	Descriptive Rating	Qualitative Description
5	Completely aware	67 - 100% correct responses
4	Aware but unsure	67-100% Correct responses but unsure about their responses (either selected wrong options or 'I don't know' option along with correct option/s)
3	Partially aware	34-66% correct responses
2	Unaware	34-66% correct responses but unsure about their response (either selected wrong options or 'I don't know' option along with correct option/s)
1	Completely unaware	No or up to 33% correct responses

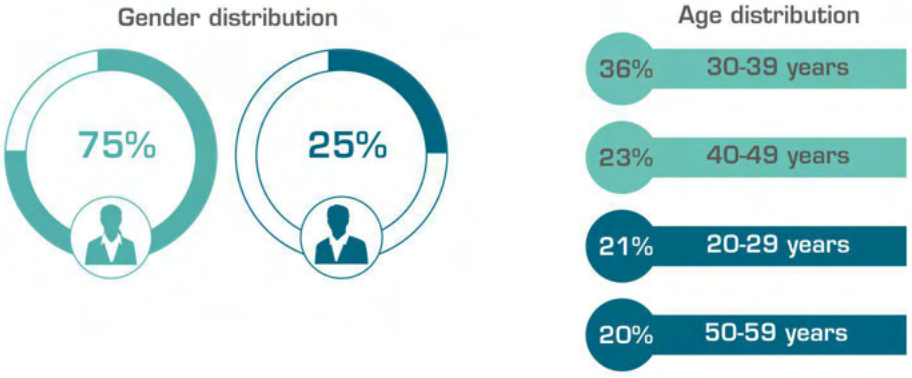
The survey included variables such as age group (20-26, 27-41, 42-56, 57-75), gender, level of education (undergraduate, postgraduate, professional courses), their source of knowledge regarding first aid and related practices, whether they have had any prior training, and if they have ever experienced providing first aid or being involved in first aid practices in schools.

7. Key Findings

7.1. Demographic distribution of respondents - Gender and Age

A total of 2,035 teachers participated in the study (75% females, and 25% males). The overall participation rate of teachers was close to 100 per cent. Of all the teachers, more than one-third (36 per cent) belong to the age group of 30-39 years, 23 per cent belong to the age group of 40-49 years, 21 per cent to the age group of 20-29 years and 20 per cent belong to the age group of 50-59 years (refer to figure 1).

Figure 3: Demographic distribution of respondents

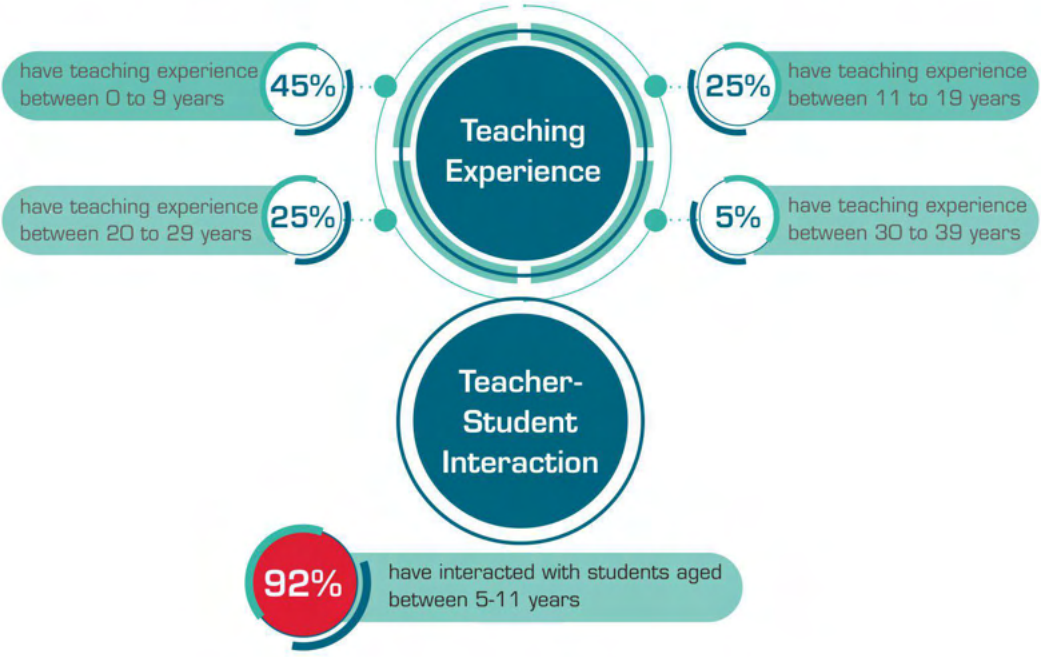


7.2. Years of teaching experience and age group of students that teachers interact with

Of all the teachers, more than two-fifths of respondents (45 per cent) have less than 10 years of teaching experience (>= 0 years to < than 10 years), followed by more than one-fifth of respondents (25 per cent) with experience between 11 years - 19 years, and 20-29 years. 5 per cent have teaching experience between 30 years- 39 years (refer to figure 4).

Among this cohort, every 9 out of 10 teachers (92%) have taught and interacted with students in the age group of 5-11 years. While 6% have interacted and taught students between 4-5 years of age, a smaller percentage of 2 per cent have interacted with students across 4-11 years of age (refer to figure 4).

Figure 4: Years of teaching experience and teacher-student interactions



7.3. Perception of teachers regarding First Aid

The study sought to understand the current perception of teacher respondents about First Aid. They were asked whether they know of different techniques used in providing First Aid in medical emergency situations. The majority of teachers (87%) responded that they know about techniques and less than one-fifth of teachers (13%) said that they are not aware of any such techniques (refer to figure 5).

Figure 5: Whether respondents are aware of First Aid techniques

7.4. Perception of respondents of their level of understanding and source of First Aid Knowledge

The study also sought to understand what the respondents believe to be their level of knowledge and understanding of First Aid. This item of questioning also asked the respondents their source of information.

Over four-fifths of respondents (88%) believe that they have a basic level of knowledge and understanding of First Aid and related practices. However, lower percentages were noted for respondents who said they have 'good level of knowledge' (7%) and have 'no knowledge' (5%). The good level was defined as a knowledge level that the person can use to orient and educate others as well.

The major sources identified by respondents as their source of knowledge included media, information obtained from family/and or relatives, Science textbooks and information obtained from government circulars and manuals. Other sources as noted by respondents included - First aid and trainings, knowledge obtained during driving course, and daily life experiences. All observations are shown in figure 6.

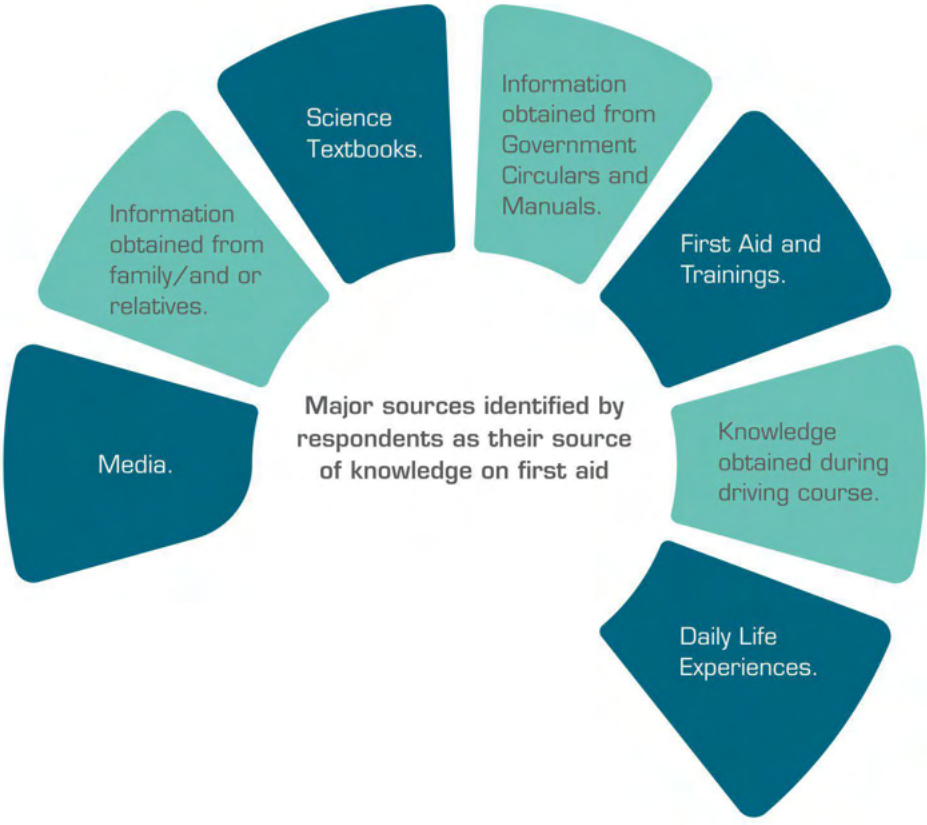


Figure 6: Perception of respondents on their level of first aid knowledge and their source of knowledge

88% believe they have basic first aid knowledge

7% believe they have good first aid knowledge

5% believe they have no first aid knowledge

Source of knowledge and information

Media 68%

respondents received information from open-source materials that include advertisements, physical and online newspapers, magazines, billboards, radio, etc.

From friends and family 55%

respondents received/obtained information from their close circle that include friends, family members, relatives.

Science Textbooks 48%

respondents received information from science textbooks.

Government circulars 27%

respondents received/obtained information from government circulars and manuals.

7.5. Perception of respondents on classifying medical situations and First Aid usage

The respondents were given different situations and were asked to identify situations that would require a First Aid response.

The most popular situations among all respondents included burns and scalds, suspicious fractures, eye injury, bleeding, and major cuts (approximately 80%). The second most common situation identified by respondents was situations arising from animal/insect bites and stings. This was identified by over two-third of respondents (approximately 69%). Medical situations emanating from respiratory distress, heart attack and chest pain, were chosen by more than half the respondents (approximately 52%) making it the third most popular medical situation among the respondents that they believe would require a first aid response. Less than half the respondents chose stroke, seizure/epileptic fits/loss of consciousness, sudden mental disturbance as first aid medical situations (approximately 44%).

Therefore, 52% and above are either not aware or do not consider medical situations that occur due to irregular brain activities (seizure, sudden mental imbalance, epileptic fits, etc.) as situations that can be intervened using First Aid techniques.

The study also wanted to understand the number of respondents who are aware that all identified situations above can be intervened with First Aid as a first level of response. The study found that less than one-third of respondents (29%) could identify all the situations correctly. All observations are shown in figure 7.

Figure 7: Perception of respondents on classifying medical situations and First Aid usage

Depiction of First Aid Situation	First Aid Situation	Percentage of Responses
	Burns and Scalds, Suspicious fracture, Eye injury, Bleeding, major cuts	80%
	Bites and Stings	69%
	Respiratory distress from any respiratory condition, heart attack, chest pain	52%
	Stroke, seizure/epileptic fits/loss of consciousness, sudden mental disturbance	45%
	All the situations above	29%

7.6. Responses on perception statements

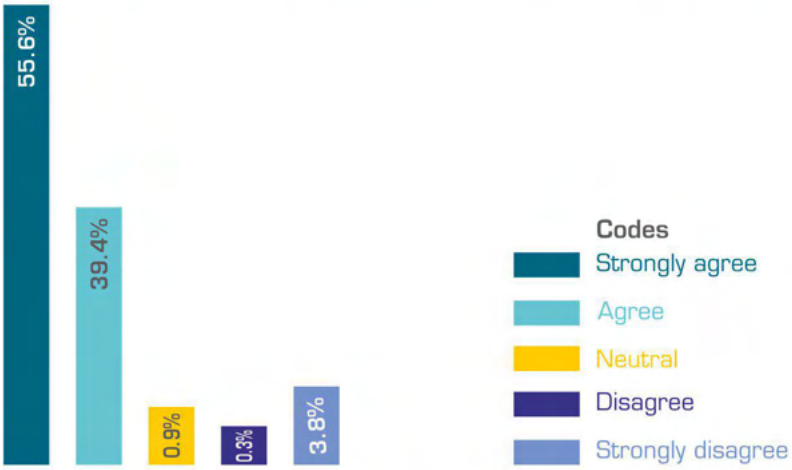
This item of questioning involved giving certain statements regarding First Aid and practices. Teacher respondents were asked to choose the most appropriate statement of agreement from a Likert scale (1932).

Responses are analysed as per the chosen statement of the agreement and mapped in terms of its 'frequency. This categorization has been given by Dr. Saul McLeod [49] that maps the statement of agreements with their frequency. For example, *"strongly agree"* has a frequency of happening *"always"*, *"agree"* has a frequency of occurring *"often"*. *"neutral"* has a frequency of happening *"sometimes"*, *"disagree"* has a frequency of occurring *"rarely"* and *"strongly disagree"* has a frequency of happening *"never"*.

"The child is solely the responsibility of the school till the time he/she is in the school, and it is the school's duty to ensure their safety, even when they are outside the school premises where the student is engaged in educational activities and related travel"

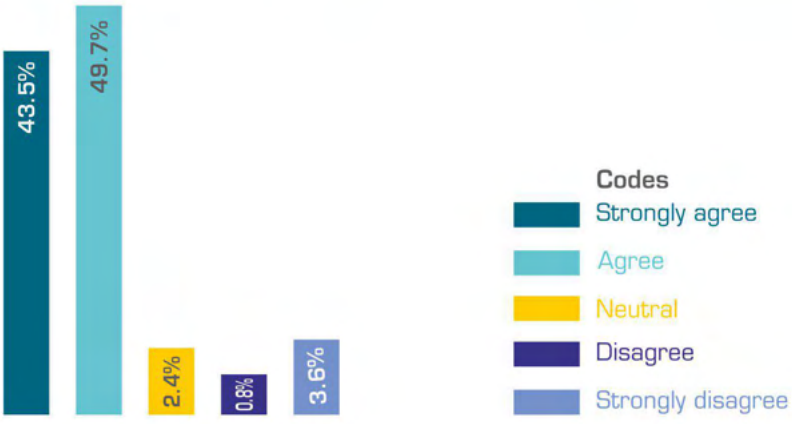
Overall, more than half the respondents (52%) agree with the above statement, whereas about one-third (36%) of respondents strongly agree with the statement. Therefore, 52% often believe and 36% always believe that the child is the sole responsibility of the school, even if they are outside the school premises, but are engaged in school-related activities or travel.

"Every school should have first-aid guidelines and a medical emergency response plan"



Maximum respondents (55.6%) strongly agree to the above statement, followed by 39.4% who agree with it. Therefore, 55.6% always believe that every school should have a ready emergency medical plan and first aid guidelines, while less than two-fifth of respondents often agree with this.

"Every teacher should be equipped and trained well in first aid techniques and response"

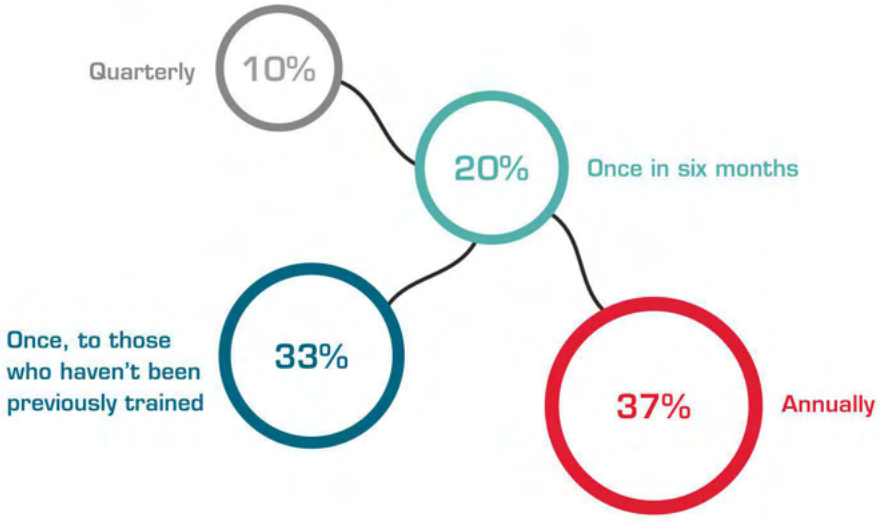


Close to half the respondents (49.7%) agree with the above statement and little more than two fifth of respondents (43.5%) strongly agree. Therefore, 43.5% always agree that every teacher should be equipped and receive proper training in first aid, while 49.7% often believe in this statement.

Another observation is that in contrast to other statements, when respondents were asked whether teachers should be well equipped in first aid training, less than half the respondents have either strongly agreed or agreed with the statement. Hence, teacher respondents in this case are not as equally supportive as the other statements.

Teacher respondents were further asked that if they have agreed or strongly agreed with the above statement, then how often do they think teachers should be provided with first aid training. Maximum teachers (37%) answered that teachers should be trained annually, one-third of teachers answered that training should be provided only once to those teachers who haven't been trained before. One-fifth of respondents (20%) responded that training should be provided once in six months and 10% of teachers said that training should be provided on a quarterly basis (refer to figure 8).

Figure 8: How often should teachers be trained in First Aid - Respondents' Perspective



7.7 Knowledge of basic first aid essentials

A) Awareness of Emergency Services:

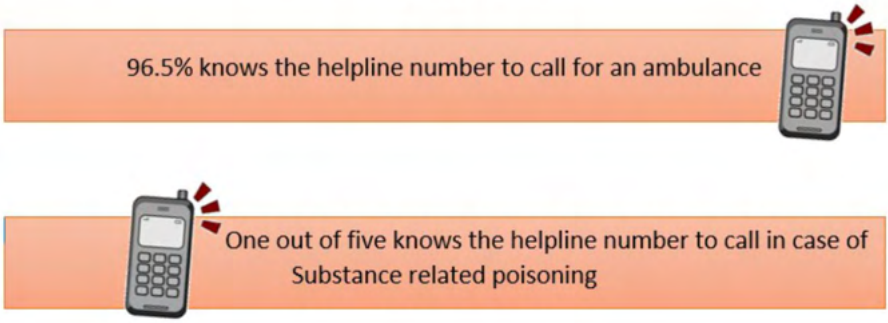
The teacher respondents were given three parts for this item of questioning - In the first and second part, the respondents were asked whether they are aware of basic emergency helpline numbers, such as an ambulance service and number to call in case of substance-related poisoning. In the third part, the respondents were asked whether they are aware about the functions of an ambulance. The results of all the three parts are given as follows -

i) Awareness regarding Emergency Helpline Numbers -

According to figure 9, maximum respondents (96.5 %) know the helpline number to call for an ambulance service in Delhi. However, only one out of five participants are aware about the helpline number to call in case of the substance-related poisoning cases (19.11%). Over two-third of respondents (68.79%) chose "I don't know" when asked what number one should call in case of substance related poisoning and 11.98% of respondents incorrectly identified the same.

Therefore, it is observed that while most of the respondents are aware of the ambulance helpline number, very few are aware of the helpline number for substance related poisoning.

Figure 9: Awareness of helpline numbers to be called on in emergency situations



ii) Awareness regarding the functions of an ambulance

Teacher respondents were given a list of services and were asked to choose the most appropriate options(s) that describe ambulance services. The responses are analysed using the 5-point Likert Scale adapted for this study[ii].

According to figure 10, a little less than one-fifth of respondents (19%) are completely aware about the function of the ambulance, i,e., they identified 67-100% of all the right options that best describe the use of an ambulance service. Less than one-third (30.95%) are partially aware, i.e., they identified 34-66% of the correct responses. Extremely few respondents (4.31%) are *completely unaware*.

ii
Five-Point Likert Scale -
5 - *'Completely Aware'* (67-100% correct responses), 4 - *'Aware but Unsure'* (67-100% Correct responses but unsure about their responses. Either selected wrong options or 'I don't know' option along with correct option/s), 3 - *'Partially aware'* (34-66% correct responses), 2 - *'Unaware'* (34-66% correct responses but unsure about their response. Either selected wrong options or 'I don't know' option along with correct option/s), 1 - *'Completely unaware'* (No or up to 33% correct responses).

Figure 10: What are the uses of an Ambulance service according to Respondents

Transportation of injured patients to treatment facilities. ✓

First aid emergency response to accident or injury. ✓

Transportation of medical personnel to and from the medical facility. ✗

To create moving medical service facilities. ✗

19% of respondent are **Completely Aware**

30.95% of respondent are **Partially Aware**

4.31% of respondent are **Completely Unaware**

13.96% of respondent are **Unaware**

31.78% of respondent are **Aware, but unsure**

Therefore, it is observed that maximum percentage of participants have partial awareness about why ambulance services are used.

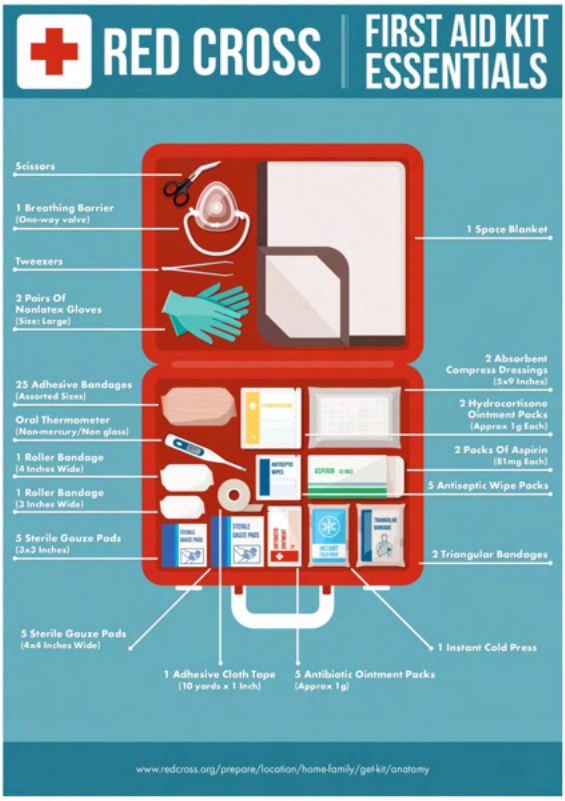
This when compared to the finding in the previous section (figure 9), the study finds that while the majority of respondents (96.5%) are *aware* of the helpline number that needs to be contacted for availing ambulance services, only about one-fifth of respondents (19%) are *completely aware* about what all services does an ambulance provide.

B) Basic Knowledge for having a First Aid Kit and its maintenance

This item of questioning involved asking teacher respondents whether they are aware of the supplies that go into a medical first aid kit and in what situations according to them should supplies in the medical first aid box be replaced.

i) List of supply items that go into a medical First Aid box

Figure 11: Knowledge about First Aid Kit and its maintenance



Options given to the respondents

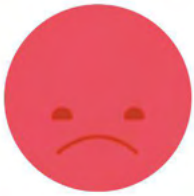
- ☑ Band-Aids, cotton swabs, crepe bandages, adhesive tape
- ☑ Thermometer, antacids, cough cold medication
- ☑ Blood pressure machine, headache medication, ibuprofen, sinus relief medication
- ☑ Antibiotic cream/ointment, antiseptic solution
- ☑ Gloves, Safety pins, Flashlight, Scissors, Tweezers, cold packs

Source: www.redcross.org/prepare/location/home-family/get-kit/anatomy

43.67%
of respondent are
Completely Aware

32.33%
of respondent are
Aware, but unsure

11.25%
of respondent are
Partially Aware



12.75%
of respondent are
Completely Unaware

According to figure 11, less than half the respondents (43.67%) *are completely aware* about the required items that need to be kept in a first aid kit. A little less than one-third of respondents (32.33%) are *aware, but are unsure*, ie., they have identified 67-100% of correct responses, but unsure about their responses - either selected wrong options or 'I don't know' option along with correct option/s. 11.25% of respondents are *partially aware*, and 12.75% are *completely unaware*.

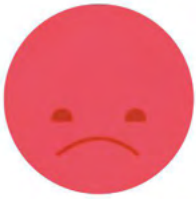
ii) Knowledge about when to replace First Aid supplies

According to figure 12, only one out of every twenty respondents (6.24%) are *completely aware* about when to change the items of the first aid kit. While 68.60% are *completely unaware* of when to change the items of the first aid kit. Over one fifth of respondents (25.16%) are *partially aware*.

Figure 12: Respondents' knowledge about when to replace First Aid supplies

6.24%
of respondent are
Completely Aware

25.16%
of respondent are
Partially Aware



68.60%
of respondent are
Completely Unaware

When figure 11 and 12 are compared, the study finds that while a greater majority of respondents are completely aware of the essential supplies of a medical first aid kit (43.67%), an extremely low percentage of respondents (6.24%) are completely aware of when to replace the first aid supplies.

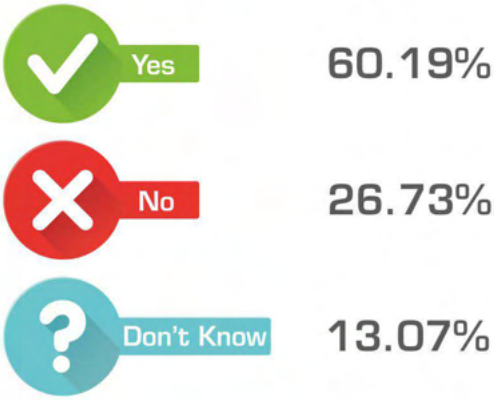
7.8 Knowledge about Emergency Response Teams (ERT) in schools- Composition and its Function

This item of questioning sought to understand the knowledge of the teacher respondents regarding an emergency team in their schools, its need and its function. This item of questioning also tried to understand whether the respondents are aware about the presence of an emergency response team in their schools or not.

i) Whether respondents are aware of having a Medical Emergency Response Team (ERT) in their schools

According to figure 13, less than two third of respondents (60.19%) said that they are aware of having a medical ERT in their schools. More than one-fifth (26.73%) of respondents shared that they do not have a medical ERT in their schools. However, 13.07% of respondents said that they are unaware about having any emergency response team in their schools.

Figure 13: Presence of Medical Emergency Response Team in respondents' schools

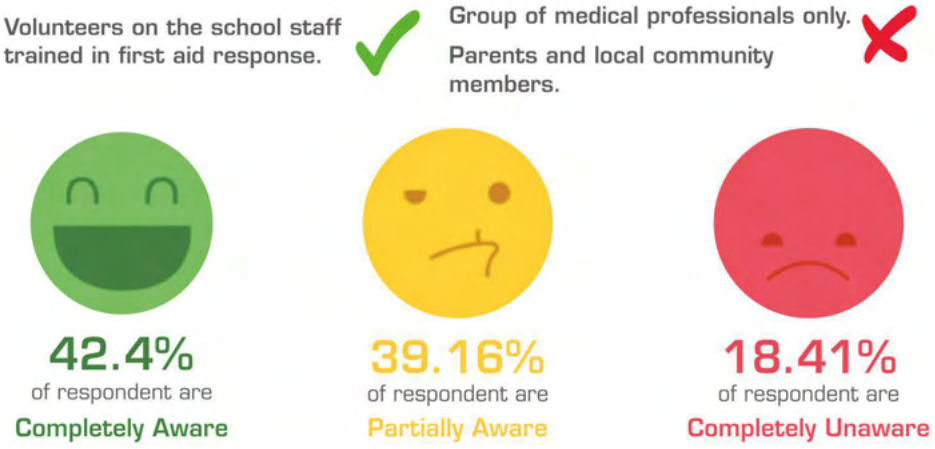


ii) Whether respondents are aware of the composition and importance of Medical ERT

Teacher respondents were provided with different options and were asked to choose all option(s) that according to their knowledge can be a part of a school's Medical ERT.

According to figure 14, less than half of respondents (42.4%) were correctly able to identify the composition of Medical ERTs in schools i.e., all members who can be a part of the Team. More than one-third of respondents (39.19%) were able to identify only a few members who can be a part of the Medical ERT. Less than one-fifth of respondents (18.41%) were completely unaware of the composition of a Medical ERT in schools.

Figure 14: Awareness about the Composition of Medical ERTs in Schools



When figures 13 and 14 are compared, the study observes that more than half the respondents (56%) out of those who are completely aware about the members of ERT, are those who do not have a Medical ERT in their schools. Therefore, it is observed that the teacher respondents have theoretical knowledge about the composition of a Medical ERT at school but they may not have seen such a team present in their schools.

iii) Whether respondents are aware of the Medical ERTs role and responsibilities

Teacher respondents were provided with different options and were asked to choose all option(s) that according to their knowledge are responsibilities of a Medical ERT of a school.

According to figure 15, maximum respondents (28%) are *aware, but unsure* about the responsibilities of a school's Medical ERT. This is followed by a slightly less percentage of 27% being c*ompletely unaware*, 21% are *unaware*, followed by 19% being *partially aware*. An extremely small percentage of 5% of respondents are *completely aware* of the responsibilities of a schools' Medical ERT.

Figure 15: Awareness about the Responsibilities of a School's Medical Emergency Response Team

DO's

To create emergency response plans for different kinds of medical emergencies

To work towards plans that prevent any emergencies.

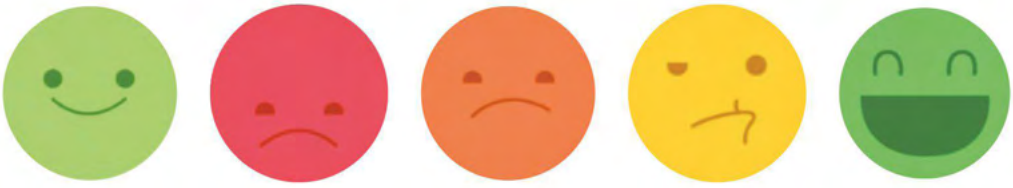
To respond to a medical emergency.

Carry out risk assessments to see effectiveness of emergency plans.

DON'Ts

Train individuals outside the team about the plan during the time of emergency.

Act on immediate assumptions and instincts during emergency.



28% of respondent are **Aware, but unsure**

27% of respondent are **Completely Unaware**

21% of respondent are **Unaware**

19% of respondent are **Partially Aware**

5% of respondent are **Completely Aware**

Therefore, a higher percentage of respondents are aware, but are not confident in identifying all the roles and responsibilities of a school's Medical ERT. An extremely low percentage of respondents are confident in their knowledge and awareness regarding a school's Medical ERT. However, none of the percentages are above 30%.

On comparing figures 13 and 15, the study observes that while 42.4% of respondents said that they have Medical ERT in their schools, only 5.89% of those teacher respondents are completely aware about the Team's role and responsibilities.

7.9 Knowledge of basic First Aid Practices

This section of question items focuses on capturing the teacher respondents' knowledge regarding symptom identification and first aid practice to perform during certain common medical emergency situations that children face in schools. These include insect or animal bites, breathing-related illness, fainting, airway obstructions due to swallowing something, fracture, cuts, etc.

i) If teacher respondents have ever faced any medical emergency in their schools and how did they choose to respond to it?

Teacher respondents were asked whether they have faced any situation of a medical emergency in their schools and what was their course of action in response to it.

According to figures 16 and 17, approximately three out of every four teachers (72.8%) responded that they have confronted with some kind of medical emergency in their schools. Approximately half of the teachers (~50%) said that they have intervened and performed first aid. One out of every ten teachers (9.68%) have performed first aid and called for an ambulance and around 40% of teacher respondents chose the 'other' option in the survey and gave their own responses. These responses include taking the child to the nearby medical facility in their own vehicle or informing parents about the child's condition.

Figure 16: Whether respondents have faced any medical emergency at their schools

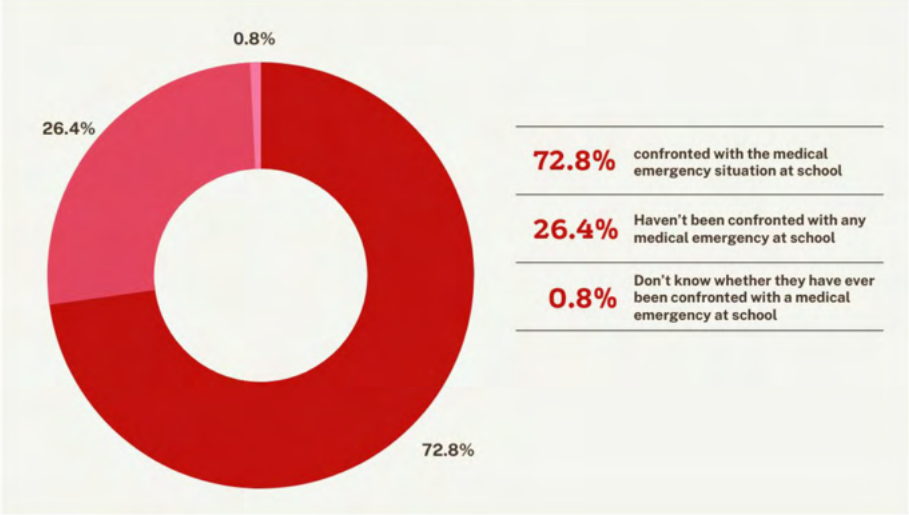
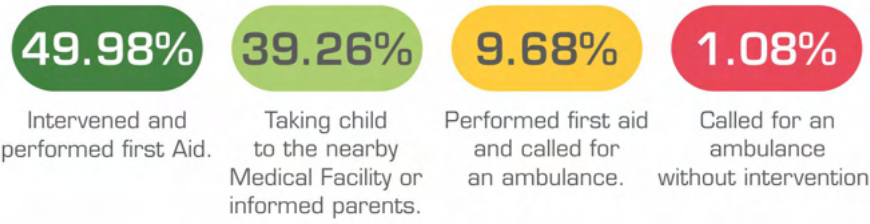


Figure 17: How respondents chose to act when confronted with a medical emergency at their school



ii) Knowledge of identification of symptoms for common medical emergency situations

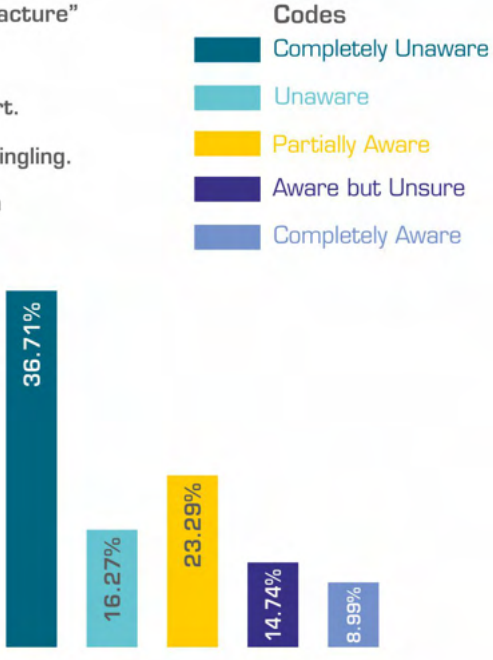
The survey presented the teacher respondents with common medical emergency situations such as fracture, animal and insect bite, situations of choking, unconsciousness, and breathing related problems that students may face when in school. The respondents were then asked to choose the most appropriate response as per their knowledge to identify the symptoms of the above situations.

Figure 18 represents the response-

Figure 18: Whether respondents can identify symptoms of common medical emergencies that may occur at schools

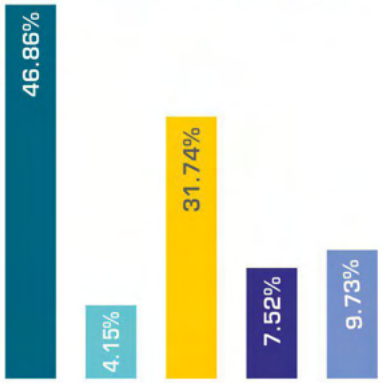
"Identifying whether a person has a fracture"

- ✓ The injured part looks deformed.
- ✓ Is still able to walk, but needs support.
- ✓ Person complains of numbness and tingling.
- ✓ Increased swelling and discolouration around the area of injury.
- ✗ The area around the soft tissue is paining but the bone necessarily may not pain.



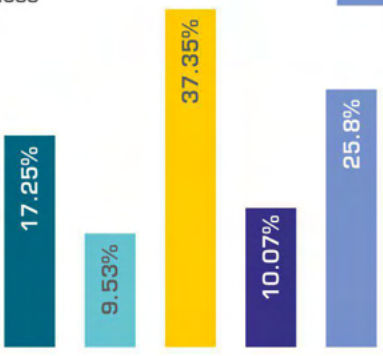
"Identifying symptoms of animal and insect bites"

- ✓ Two puncture wounds may be evidence of a snake bite.
- ✓ Fever and chills are common symptom with Scorpion bite.
- ✓ Pain, inflammation, and loss of sensation around the bite is common in the case of dog bites.
- ✗ Blood in vomit is a common symptom of insect bites.



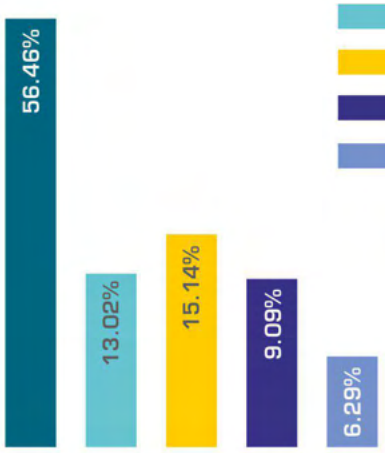
"Identifying if a person is conscious but their airway is fully obstructed with a foreign object"

- ✓ Gagging, coughing, wheezing.
- ✓ Visible hand signals and panic.
- ✗ Dizziness or drowsiness



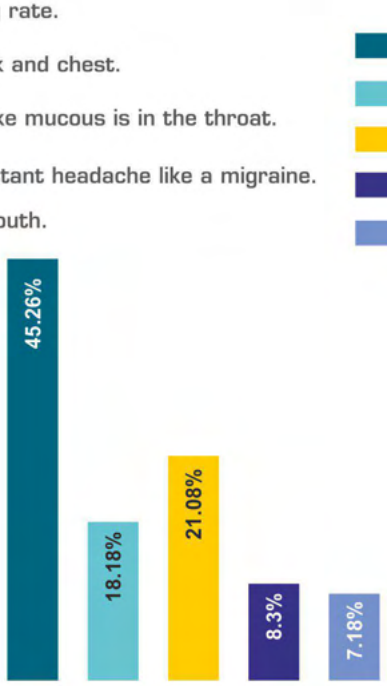
"Identifying if a person is unconscious"

- ✓ Slurred speech.
- ✓ Dizziness or light-headedness.
- ✗ Rapid breathing.
- ✗ Fever.



"Identifying if a person is facing breathing abnormalities"

- ✓ Increased breathing rate.
- ✓ Skin pulls in on neck and chest.
- ✓ Breathing sounds like mucous is in the throat.
- ✗ Complaining of constant headache like a migraine.
- ✗ Complains of dry mouth.



According to figure 18, approximately half of the respondents are not able to identify the correct symptoms for common medical emergency situations such as animal or insect bite, fainting and breathing-related problems. Less than 10% of respondents are observed to have complete knowledge and awareness of the symptoms in these situations.

The only medical emergency in which more than one fifth of the respondents are completely aware about the symptoms is when a person's airway is obstructed by a foreign object (25.8%). However, the rest of the respondents – that culminates to more than 70% are either completely unaware (17.25%), unaware (9.53%), partially aware (37.35%), or are aware but are not confident (10.07%) about the symptoms. This percentage is alarmingly high.

iii) Knowledge of First Aid responses and practices in common emergency situations

Teacher respondents were also given different options with First Aid practices/responses to the common medical emergency situations. They were asked to choose all option(s) that according to them are the most appropriate.

As the majority of respondents were not able to identify the symptoms for common medical situations, a similar trend was observed in their knowledge of First Aid responses and practices during these common medical emergencies. A maximum number of respondents are observed to be completely unaware about the first aid actions they need to take (refer to figure 19).

Figure 19: First Aid responses and practices during common medical emergencies at schools

"Assess if the person is breathing"

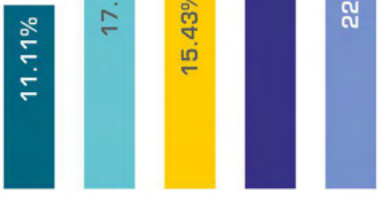
- ✓ Look, listen, feel method
- ✗ Checking pulse
- ✗ Checking body temperature
- ✗ Asking "are you ok?"

"Assess if the person is unconscious"

- ✓ Airway-breathing-pulse
- ✗ Pulse-breathing-airway
- ✗ Breathing-pulse-airway
- ✗ Airway-pulse-respiration

"Response to when a person who faints"

- ✓ The person should be laid down on a flat background and the feet should be elevated
- ✓ Loosen any tight clothing
- ✗ Shake or attempt to move the person from time to time
- ✗ Place a pillow under their head



"Response to a person who is conscious, but their airway is fully obstructed by a foreign object"

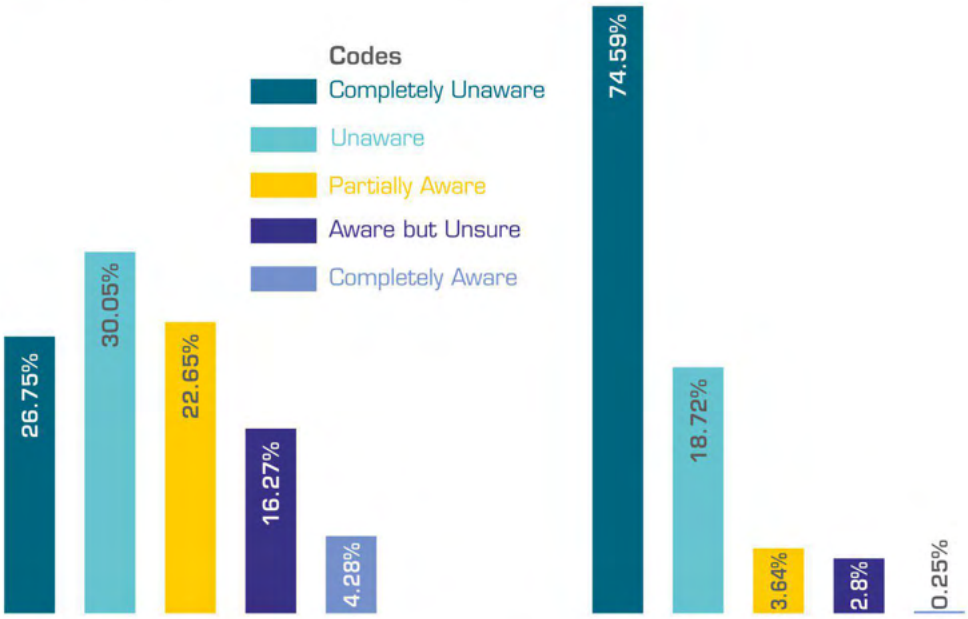
- ✓ I would lie him/her face downwards, hit the back.
- ✗ I would get back and apply pressure on the abdomen.
- ✗ I would perform cardiac massage.
- ✗ I would lie him/her back.

"Response in case of insect or animal bite"

- ✓ The area of the wound is washed with soap and warm water for at least 5 minutes in dog bites.
- ✓ Heat should be applied to the injured area in cases of bee and scorpion stings.
- ✗ Use a cloth or bandage to limit blood flow from the wound if the animal bite I in the head and neck region.
- ✗ The wound is cut with knife and the venom is sucked and spit in cases of snake bite.

"Ideal response in case of a fracture"

- ✓ Apply ice to the injury
- ✗ Not provide the patient with any food or fluid before treatment.
- ✗ Push the ends of the fractured bone inside if they are out.
- ✗ Wrap the injury and rest the area closer to the floor.



"Response in case of a deeply embedded object in the skin like a knife or iron and it cannot be removed"

- ✓ They should be taken to the nearest healthcare institution without pulling out the foreign object.
- ✗ Attempt to lift the tip of the foreign body using sterile tweezers.
- ✗ Cover the wound to stop the bleeding.
- ✗ Clean the area immediately.

"Response in case of a person being struck by electricity"

- ✓ Switch off the source of electricity if possible.
- ✓ Try and make sure that the person doesn't get chilled.
- ✗ Use a blanket or a towel to cover any burnt areas.

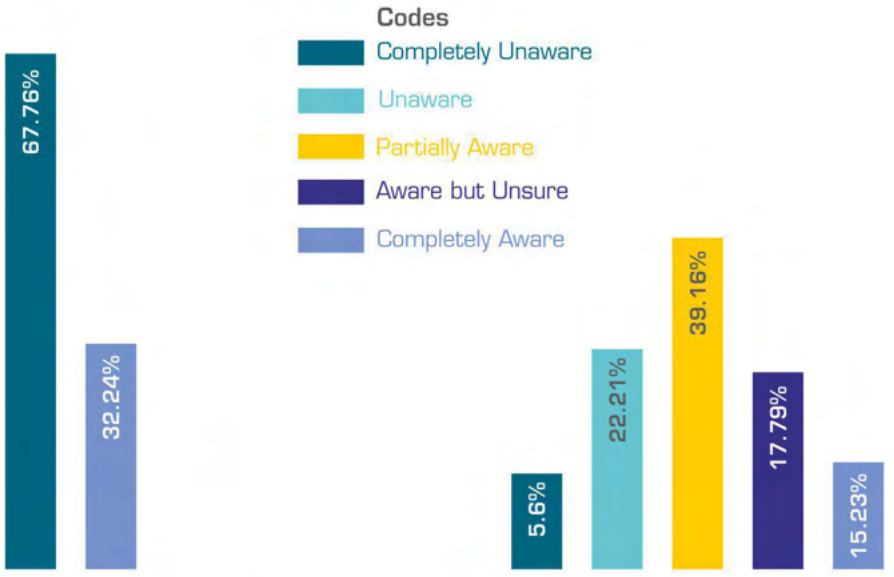


Figure 19 shows that the medical emergency where a person's airway is fully obstructed is the only situation where a little more than half of the respondents have chosen the correct first aid response. In all the other situations the selection of correct first aid responses is less than 50%. In the situations of animal/insect bites and fractures, the selection of correct responses is as low as 4.28% and 0.25%, respectively, which are the most common emergency situations that can happen in the school premises.

8. Key Observations and Discussion

A. Maximum teachers have identified non first aid training related items as their source of information for First Aid knowledge.

It is observed that teachers have mostly identified magazines, newspapers, government circulars, textbooks, etc. as sources of information from where they have obtained/learnt information about First Aid and related practices. A very few teachers have identified First Aid training and related materials (8% only) as their source of knowledge. First Aid trainings and related materials are important knowledge sources because the training and manuals are specifically designed for systematical characterization of different emergency situations and First Aid or CPR responses. First Aid trainings are also created keeping in mind the baseline knowledge and understanding of the participant. Along with this, it also focuses on learning First Aid practices in real-time through a practical application which is conducted and observed by First Aid experts. This helps with a more constructive and focused learning, which may not be the case when the information is obtained from open sources. This statement is also supported by medical experts, who believe that it is always beneficial to take a first aid course so that one can recognise an emergency and give basic first aid until professional help arrives[50].

Most of the trainings, such as the trainings provided by Red Cross also provide certification at the end of completing the course. This certification is given based on the performance and the extent of knowledge acquired by the trainee. This may act as a motivating factor for the trainees to learn and perform well.

B. More than one-fifth of teacher respondents have correctly identified all medical emergency situations that can be intervened with First Aid responses.

This study has presented different medical situations that can be addressed using First aid responses and hence, reduce the severity of the condition in the absence of medical help. These include (i) situations arising from breathing difficulty (respiratory distress from any respiratory condition, cardiorespiratory arrest, chest pain), (ii) medical emergencies due to animal and insect bites, (iii) irregular brain activities (stroke, seizure/epileptic fits/loss of consciousness), (iv) other miscellaneous common first aid situations such as burns and scalds, suspicious fracture, eye injury, bleeding, and major cuts.

Even though a majority of teachers have no prior medical or first aid training, more than one-fifth (29%) of respondents identified all the above situations as medical emergencies that can be addressed using First Aid responses. When the situations were studied individually, the most percentages of respondents identified situations arising from breathing difficulties, animal bites and stings and the miscellaneous as the first aid situations correctly. Medical emergencies arising from irregular brain activities were the least chosen situation by the respondents.

Medical emergencies such as stroke, seizure can be prevented from becoming serious if first aid is performed. The most important first aid response to someone having a seizure or a stroke, as according to Healthline,[51] is to gently place or roll them to their side to prevent them from choking or vomiting. It is also important to place something soft for support under their head to prevent any injury to the brain. This should be followed by loosening any item of clothing around their neck to prevent it from getting tighter and supporting them to breathe more comfortably. It is important to be aware that such medical emergencies can also be intervened using First Aid help to reduce the severity of the condition. Otherwise, it may severely impact the brain.

C. About half the respondents have either agreed or strongly agree with the statement that teachers should be fully equipped with First Aid Training. Out of those who have agreed or strongly agreed, maximum have identified the time of once a year for providing first aid training, followed by teachers who believe first aid training should only be provided once, and only to those who haven't been trained previously.

Another observation of the results is that maximum respondents - 49.7%, have agreed that teachers need to be fully equipped with First Aid training. This was followed by those - 43.5%, who have strongly agreed to this. Though the reason for this difference in opinion was not captured in this research, it may be concluded that about half the teachers are convinced about the role they can play in providing First Aid. With streamlined training and engaging teachers in preparing for First Aid can help boost their current knowledge and understanding of First Aid. This can help encourage more teachers to become first-aid providers in case of medical emergencies.

Secondly, out of all teachers who either agreed or strongly agreed, a maximum (37 per cent) said that trainings should be provided annually. While there is no one "right" time identified for refresher trainings in First Aid, it is however beneficial to note the importance of refresher, or continued training in first aid. To prevent safety skills from deteriorating and to keep the knowledge of First Aid and related practices up to date, it is important to undergo refresher trainings. Therefore, contrast this to the finding that 33% i.e., one out of every three teachers has said that First Aid training should be provided only once, and only to teachers who haven't been trained before. This brings out the importance of imparting awareness regarding the importance of continued First Aid training. Research findings by The Eagle Academy and Anderson et al, 2011 supports this information -skills learnt in CPR and First Aid are often forgotten, if not renewed from time to time[52,53].

D. Encouraging majority of teachers (96.5%) are completely aware about emergency service numbers such as of the ambulance. However, the knowledge and awareness can be improved regarding other first aid essentials.

Even though maximum teachers are aware about the helpline number to call for an ambulance, it was noted that very few participants are aware about the other important helpline numbers to call on in case of medical emergencies, such as the helpline number to call for substance related poisoning. According to National Poison Information Center (AIIMS), the accessibility and exposure to harmful chemical substances has increased in daily life, and some of the chemicals can be dangerous [54]. Most poisoning related cases occur accidentally, and in case of poisoning, providing the first aid before getting medical help can save the person's life [55]. Young children are much more susceptible to such accidental exposure due to their exploratory nature. Some substances can hamper their development [56] and others can be life threatening too. So, it is important that the school staff must be aware about the first aid support in case of such accidents.

Although maximum respondents are aware of the ambulance service helpline number, only 19% of respondents are completely aware about the function of the ambulance service. Whereas around 62% of respondents are either partially aware or aware, but unsure about their responses about the functions of the ambulance services. Therefore, more than half the respondents show basic to some knowledge. This can be further improved upon so that teachers can confidently identify situations where an ambulance service can be used.

Another important basic first aid essential is the first aid kit. Having the first aid kit within the reach is advisable, so that it can be easily used in case of any medical emergency. The data shows that a little less than half of the respondents are completely aware about the items to be kept in a first aid kit. A very small percentage (6%) of respondents know how to maintain the first aid kit by replacing the items inside. 68.60% of respondents are completely unaware of when to replace the items of a first aid kit. The first aid kit is a basic essential during the time of emergency and knowledge of making and maintaining the first aid kit is an important requirement to deal with emergencies.

E. About three out of every five teachers (~60%) are aware of a Medical ERT and more than two fifth of teachers (42.4%) have knowledge regarding the composition. About one-third of teachers have a basic to a partial understanding of the role and responsibilities of the Medical ERT.

The guideline circular issued by DCPCR on medical crisis management 2010 clearly states that there should be an emergency response team (ERT) in the schools, that should respond to any medical emergency in the school, create emergency response plans for different medical emergencies, work to prevent any emergency, carry out risk assessments to check the effectiveness of the plans and educate train and conduct mock drills to prepare everyone for any emergency situations.

Around 60% of the respondents have said that their schools have an ERT, but only 5% of respondents are completely aware of the responsibilities of an ERT in the schools. Around one-fourth of the respondents are aware, but unsure about the responsibilities of the ERT in the schools. One more interesting point that can be noted in the data is that around more than half of the respondents can correctly identify the members of the ERT or those who do not have an ERT in their schools. This shows that with proper training and support, a functional ERT can be established in the schools that would be able to deal with the emergency situations and make the schools safer for children.

F. Around one-third of the respondents share that they have been confronted with medical emergencies in the schools. About half the respondents have intervened and provided first aid in such situations, with around 40% choosing to take the child to a nearby medical facility or have informed parents.

These responses ensure that medical emergencies are common in the school settings and teachers are at the front line to deal with all these situations on their own. 40% of respondents take the child directly to the nearby medical facility or inform parents. Providing first aid in the initial few hours (or minutes in some cases) of injuries before getting the proper medical treatments and help can be crucial in many cases. Understanding of basic and common first aid responses can help save many lives.

G. About two third (63.15%) of teachers have basic awareness about the symptoms of Choking. However, lesser awareness was found for common medical emergencies/injuries related to fracture, animal and insect bites, unconsciousness and breathing related abnormalities.

Given that the majority of teachers have no prior medical or first aid training, still close to 64% of respondents are able to identify (with good and partial knowledge) symptoms to recognise whether a person is choking. However, a lesser percentage of teachers were able to identify symptoms of common medical emergencies related to fractures, animal, and insect bites, unconscious and breathing related abnormalities. In the situations of animal/insect bites and fractures that are common situations that occur in schools, when the respondents were asked to identify the correct first aid response to these situations - the selection of correct responses is as low as 4.28% and 0.25% respectively

Medical emergencies arising from animal/insect bites, fractures, fainting, etc. are common in the school setting. Around maximum number of respondents (more than 50% in many situations) are either unaware or completely unaware of the symptoms and responses needed to handle common medical emergencies. Very few respondents are able to identify and respond to the common medical emergencies. This information is alarming, especially when it can be seen in relation to the sources of information these respondents have. They gather their knowledge in bits and pieces and sometimes the information may be incomplete. The majority of these sources may not be reliable or do not come from the proper medical professionals (like some home remedies). These information sources do not provide the proper training or guidance to the respondents. The scope for any practical knowledge or hands-on experiences are inadequate. Understanding of the medical emergencies and first aid responses are basic life-saving skills. Lack of such understanding is reflected in the data which strengthens the idea of providing the proper training to the teachers to make them confident to deal with common medical emergencies.

9. Recommendations

The right to life is a basic right given to every child by the constitution of India. The right of children to free and compulsory education act (RTE 2009) also emphasises on safeguarding the children's rights in the schools as well. Schools need to provide a safe and secure environment for children. Different guidelines of government bodies are provided to make the schools safer places for children. However, the research team at the time of data collection did not find material on the status of its implementation. Close to 100% of the teacher respondents of this study have no prior medical or first aid training. Therefore, a gap has been identified in their knowledge and awareness regarding first aid and related practices. More concrete steps need to be taken to ensure safety protocols are maintained to make schools safe for children.

- **Create a good emergency response team in school with clear job descriptions and job roles for emergency responses:** Create Emergency Response Teams in the schools with proper training. There is a need for on-site support for the schools to have functional ERTs. This support should be given on a long-term basis, - weekly support for at least 6-12 months. Such longer-term support can help the schools to gradually work on the plans and establish the ERT with required materials. The ERTs in schools also need to be trained from time to time to understand different emergency situations and renew their skills. Handhold them to make plans for emergency situations. To build this preparedness for emergencies, conduct mock drills, etc. A mix of such on-site support and training programs can help to establish functional and active ERTs in schools.

- **Schools need to develop and adopt a first aid checklist with proper display of important emergency numbers and to have tie-ups with nearby hospitals:** The critical part of the strategy must be the adoption of critical information material to enable quick response. This requires preparation of a checklist of immediate responses, interventions and first aid techniques that the teachers can understand apply easily.

- **Display emergency numbers and tie-ups with nearby hospitals and dispensaries:** At the same time, the schools should ensure proper display of emergency helpline numbers for easy access and action. It is also very important for the schools to have formal tie-ups with nearby hospitals and health centers to seek and access immediate medical help in the cases of emergency. Such practices will have to be institutionalised to build preparedness and to have proper systems and trained human resources in the schools.

- **Identify training needs and implement customised training programmes for teachers:** It is necessary to implement proper training programs to train teachers/school staff in basic First aid and CPR. School staff needs proper training to respond to the medical emergencies. Making and maintaining first aid kits, it's storage and uses should be part of the training program. The training program should include hands-on experiences to generate confidence in teachers to carry out first aid in real-life situations. With emergency cases increasing and children falling victim to a range of diseases including heart ailments, it is necessary for the school staff to be trained and prepared to handle diverse situations. This makes the training in CPR an important part of training programs. Professional training can create a cohort of professionally trained staff members, who in turn can train other staff members or students. Such courses can also spread awareness about the need to learn about the medical emergencies and first aid. In the long-term, this awareness needs to spread in the society so that more people get educated and can respond to emergency situations adequately and effectively till medical help arrives. This can prevent serious injuries and save many lives.

It is important to develop mechanisms that strengthen the emergency response system in times of need. Child safety and injury prevention is the need of the hour and with professionally trained members in First Aid responses belonging to the school community, one can ensure school safety as well. This knowledge and awareness can be disseminated to the larger community to ensure overall wellbeing of individuals. Children should be protected from preventable situations so that they do not have to seek severe medical help or succumb to fatal situations.

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Annexure

Annexure 1 - Semi structured survey questionnaire for primary school teachers

The objective of this study is to understand the perception, knowledge and awareness that teachers have regarding first-aid practices.

Request you to choose your responses as per your own understanding and opinion. We are conducting this survey to understand your point of view and perception. Thus, there is no right or wrong answer. Your responses to all the questions are important. We would assure you that your personal information will be kept confidential and anonymous. This survey usually takes 15 minutes to complete.

Thank you for your active participation!

Topic guide -

I. Questions related to socio-demographic characteristics-

S. No.	Questions	Responses/ Category/Answers
1	Name (optional)	
2	Age in years	
3	Gender	
4	Highest academic qualification?	
5	Years of teaching experience?	
6	What class(es) do you teach?	

Part I

I. Questions related to the teacher's perception of First Aid knowledge –

1. Do you have knowledge about First-Aid practices?

a) Yes
b) No

1.1 If YES, please evaluate your knowledge levels –

a) Good level of knowledge - Has knowledge of first aid and practices. Can orient/educate others
b) Basic level of knowledge of first aid and practices
c) No knowledge about first aid and practices

1.2. What is your source of knowledge about first aid practices? (you may choose more than one option)

a) Media (open source material, advertisements, etc)

b) First-aid courses

c) Information obtained from family/relatives

d) Trainings on first aid

e) Training undertaken during driving course

f) Information obtained from government circulars and manuals

g) Any other source? _____

2. In which of the following situations do you feel first aid can be used? You may choose more than one option (4)

a) Respiratory distress from any respiratory condition, cardiorespiratory arrest, chest pain

b) Bites and stings

c) Stroke, seizure/epileptic fits/loss of consciousness, delirium

d) Burns and Scalds, Suspicious fracture, Eye injury, Bleeding, major cuts

e) Any other?_____

Please rate your answers to questions 3-5 on the provided rating scale

3. "The child is solely the responsibility of the school till the time he/she is in the school, and it is the school's duty to ensure their safety, even when they are outside the school premises where the student is engaged in educational activities and related travel"

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

4. "Every school should have first-aid guidelines and an emergency response plan"

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

5. "Every teacher should be equipped and trained well in first aid techniques and response"

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

6. If you agree with the above statement, how often do you think the first aid training should be provided?

a) Annually

b) Quarterly

c) Once in six months

d) Once with every teacher who hasn't been previously trained

Part II

II. Knowledge of basic First-Aid essentials – To assess the baseline knowledge of teachers regarding the basic First-Aid essentials

7) What is the helpline number for ambulance services in Delhi? (1)

a) 106

b) 102

c) 100

d) I don't know

7.1 What according to you is the use of an ambulance service? You may choose more than one option. (2)

a) Transportation of injured patients to treatment facilities

b) Transportation of medical personnel to and from the medical facility

c) First aid emergency response to accident or injury

d) To create moving medical service facilities

e) Other _____

8) What is the phone number to be called in cases of substance related poisoning for information or consultation in New Delhi? (1)

a) 1066

b) 1056

c)1231

d) 121

e) I don't know

9) What do you think can be items from the options below that you will consider keeping in a first aid kit? You may choose more than one option-(4)

a) Band-Aids, cotton swabs, crepe bandages, adhesive tape

b) Thermometer, antacids, cough cold medication

c) Blood pressure machine, headache medication, ibuprofen, sinus relief medication

d) Antibiotic cream/ointment, antiseptic solution

e) Gloves, Safety pins, Flashlight, Scissors, Tweezers, cold packs

f) Any other? _____

9.1.) In what situations do you feel the items in the first aid boxes should be replaced? You may choose more than one option. (4)

a) When box has been used on more than one occasion

b) When the box has not been used even once

c) When items in the box has been used up on the spot

d) Repeatedly. When the medicines are expired or used up and need to be refilled

e) I don't know

10) Do you have an Emergency Response team in your school?

a) Yes

b) No

c) Can't say

10.1) Who according to you is/should be part of a school's Medical Emergency Response Team? You may choose more than one option – (1)

a) Group of medical professionals only

b) Volunteers on the school staff trained in first aid response

c) Parents and local community members

d) Any other _____

10.2) What is the role of the Emergency Response Team? You may choose more than one option. (5)

a) To create emergency response plans for different kinds of medical emergencies

b) To respond to a medical emergency

c) Train individuals outside the team about the plan during the time of emergency

d) To work towards plans that prevent any emergencies

e) Act on immediate assumptions and instincts during emergency

f) Carry out risk assessments to see effectiveness of emergency plans

g) Carry regular education, training and mock drills

h) I don't know

Part III

III. Knowledge of basic First-Aid Practices

11) Have you ever been confronted with a situation where first-aid practices were required in the school?

a) Yes

b) No

c) Can't say

11.1) If YES, what did you do?

a) Intervened and performed first Aid

b) Called for an ambulance without intervention

c) Performed first aid and called for an ambulance

d) Others: _____

12. What could be symptoms in a person who is not able to breathe normally? You may choose more than one option (3)

a) Increased breathing rate

b) Skin pulls in on neck and chest

c) Complaining of constant headache like a migraine

d) Complains of dry mouth

e) Breathing sounds like mucous is in the throat

f) I don't know

12.1. How would you choose to respond in order to assess if the person is breathing? (1)

a) Look, listen, feel method

b) Checking pulse

c) Checking body temperature

d) Asking "Are you ok?"

e) I don't know

13) What according to you can be symptoms to indicate that a person I unconscious? You may choose more than one option. (3)

a) Suddenly stops responding

b) Slurred speech

c) Rapid breathing

d) Fever

e) Dizziness or light-headedness

f) Shivering

13.1. How would you assess to see if the person is unconscious? Choose the option that according to you is the right order of examination–(1)

a) Pulse-breathing-airway

b) Breathing-pulse-airway

c) Airway-breathing-pulse

d) Airway-pulse-respiration

e) I don't know

13.2. What according to you should be the response to a person who has fainted? You may choose more than one option (2)

a) The person should be laid down on a flat background and the feet should be elevated

b) Loosen any tight clothing

c) Shake or attempt to move the person from time to time

d) Place a pillow under their head

e) Any other_____

14.1.) What would you do for a person who is conscious but their airway is fully obstructed (ingested foreign body) and who cannot cough (1)

a) I would get back and apply pressure on the abdomen

b) I would perform cardiac massage

c) I would lie him/her face downwards, hit the back

d) I would lie him/her back

e) I don't know

15. Choose the option/options that you think can be the symptoms of animal or insect bites? (3)

a) Two puncture wounds may be evidence of a snake bite

b) Fever and chills are common symptom with Scorpion bite

c) Blood in vomit is a common symptom of insect bites

d) Pain, inflammation and loss of sensation around the bite is common in the case of dog bites

e) I don't know

15.1.) Which of the following is true for animal and insect bites? (you may choose more than one option) (2)

a) The area of wound is washed with soap and warm water for at least 5 minutes in dog bites

b) Use a cloth or bandage to limit blood flow from the wound if the animal bite is in the head and neck region

c) Heat should be applied on the injured area in cases of bee and scorpion stings

d) The wound is cut with knife and the venom is sucked and spit in cases of snake bite

e) I don't know

16) What are the different signs that you will look for to understand if a person has a fracture? You may choose more than one option

a) The injured part looks deformed

b) Is still able to walk, but needs support

c) The area around the soft tissue is paining but the bone necessarily may not pain

d) Cramping

e) Person complains of numbness and tingling

f) Increased swelling and discolouration around the area of injury

g) Any other___

h) I don't know

16.1) What do you think can be an ideal response once the person identifies it to be a fracture? You may choose more than one option. (2)

a) I will push the ends of the fractured bone inside, if they are out

b) Apply ice to the injury

c) Wrap the injury and rest the area closer to the floor

d) Not provide the patient with any food or fluid before treatment

e) Any other?____

17.) If a person's skin seems to have a deeply embedded foreign object like knife or iron and cannot be removed, what according to you should be the first aid response? You may choose more than one option (1)

a) They should be taken to the nearest healthcare institution without pulling out the foreign object

b) Still attempt to lift the tip of the foreign body using sterile tweezers

c) Cover the wound to stop the bleeding

d) Clean the area immediately

e) Any other? _____

f) Don't know

18.) When a person is struck by electricity, what according to you should be the immediate steps taken? You may choose more than one option (2)

a) Immediately separate them from the source using bare hands

b) Switch off the source of electricity if possible

c) Try and make sure that the person doesn't get chilled

d) Use a blanket or a towel to cover any burnt areas

e) Any other?___

f) I don't know

Annexure 2 – Participant information sheet and consent form for the study

Tech Mahindra Foundation works in collaboration with East Delhi Municipal Corporation and North Delhi Municipal Corporation to improve the quality of education in the Primary Schools of Delhi with the goal to create happier classrooms and shape the future of our nation.

Tech Mahindra Foundation is the corporate social responsibility arm of Tech Mahindra Limited and has been working in the areas of education, employability, and disability by supporting initiatives that lead to employability and sustainable transformation. With a pan India presence running 120+ projects along with 90+ partners across India, the Foundation is one of the leading CSRs in the country.

The Foundation takes cognizance of the fact that any kind of intervention requires an in-depth understanding of the matter at hand as its first step. To be able to create happier and safer classrooms, it is important to identify all change agents that may contribute to the cause. Keeping this in mind, we wish to conduct this survey to understand how we can leverage the teaching community in creating safer classrooms for all our students.

Participant information sheet-

First Aid for Improving Safety in Schools: A Teacher's Perspective

Dear Participant,

We would like to invite you to take part in this research study. The purpose of this information sheet is to explain the research objective and what is expected from the participant so that you can take a judicious decision. Please take time to read the following information carefully. You may seek more clarity in case of any ambiguity or if you would like more information on anything. You may take time to decide whether or not to take part, either way we will respect your decision. After you are properly satisfied that you understand this study, and that you wish to participate, please do tick the box giving your consent to be a part of this study and proceed with the survey questionnaire.

Your participation in this study is voluntary. It is completely on your own discretion to make this decision. If you volunteer to be in this study, you may also withdraw from it at any time.

This study has been approved by Tech Mahindra Foundation's Research and Ethics Review Committee.

What is the purpose of this study?

The title of the study is 'First Aid for Improving Safety in Schools: A Teacher's Perspective. The research aims to investigate the current knowledge, awareness, and perception of primary school teachers regarding First aid and related practices. We are conducting this survey to understand your point of view and perception. Thus, there is no right or wrong answer.

What kind of involvement is expected from the participant?

If you agree to participate in this study, you will be asked to fill the online survey attached to this form. The objective of this survey is to understand the perception, knowledge, and awareness that teachers have regarding First Aid and related practices. It is important that you answer all the questions asked in the survey honestly and true to your knowledge. After the submission of the survey, the research group may reach out to you for a personal interview or focused group discussion. You will be notified about the same beforehand.

Are there possible disadvantages and/or risks in taking part?

To the best of our knowledge, there are no risks (either personal or to any other) or disadvantages in taking part in this research study.

What are the benefits of being in this study?

There may or may not be any direct benefits to you. You will not be reimbursed or paid for participation in this study. However, information obtained from this study will help to understand how effective we can make the teaching fraternity in identifying eye health issues in their students and do the early level intervention and avoid serious consequences later.

Will my taking part in this project be kept confidential?

We assure you that any private and confidential information or any personal notes will be only for our reference only. We will maintain full confidentiality at all points of times. We also ensure full anonymity as well. All data collected from participants will be stored in password protected files on a secured computer and the access will only remain with the immediate research group.

Who should I contact if I have any questions?

If you have any questions regarding the study, please contact
Varsha Gupta at varsha.gupta@techmahindrafoundation.org or
Rupsha Mitra at rupsha.mitra@techmahindrafoundation.org.

INFORMED CONSENT FORM

Title of Study: 'First Aid for Improving Safety in Schools: A Teacher's Perspective. By signing below, I confirm the following:

- I have been given written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary, and I can at any time withdraw from the study.
- I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated.
- I understand that all personal data will remain STRICTLY CONFIDENTIAL, and all research data collected will be securely stored.

I agree to be a part of this study

a) YES

b) No

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