

Abstract Book

4th National Congress on Drowning Prevention: Trauma and drowning

September 7-8 2021

Guilan- Iran

Scientific secretary:

Dr Ali Davoudikiakalayeh

Assistant professor of Faculty of Medicine

Guilan University of Medical Sciences

چهارمین همایش ملی پیشگیری از غرق شدگی با محوریت تروما و غرق شدگی

برگزارکننده همایش:
مرکز تحقیقات ترومای جاده‌ای دانشگاه علوم پزشکی گیلان

تاریخ برگزاری

۱۶ و ۱۷ شهریور ماه ۱۴۰۰

با امتیاز از آموزش

برای پزشکان و آموزش کارکنان



محورهای همایش:

مجری ملی ثبت کشوری غرق شدگی

دکتر علی داودی کیاکالیبه

بهبیر طلعی و هیأت طلعی دانشکده پزشکی

دانشگاه علوم پزشکی گیلان

دکتر صباغی اله همایی راه

بهبیر اجرایی و هیأت طلعی مرکز تحقیقات ترومای جاده ای

دانشگاه علوم پزشکی گیلان

اپیدمیولوژی مصدومیت ها و جراحات ناشی از غرق شدگی

روشهای پیشگیری از مصدومیت های ناشی از غرق شدگی

روشهای مدیریت صحنه در برخورد با مصدومیت های ناشی از غرق شدگی

حوادث جاده ای و غرق شدگی

ترومای دریایی

سیل و غرق شدگی

فن آوری های نوین در پیشگیری از غرق شدگی

حامیان:

لینک ورود به سایت همایش:



<https://cmelearn.ir/course/20253>

تلفکس: ۰۱۳-۳۳۳۱۱۶۷۷





Guilan Road Trauma Research Center



Guilan University of Medical Sciences

Dear Colleagues,

Although the drowning mortality rate has decreased in Iran from ten years ago, it is still considered a serious health problem. Guilan University of Medical Sciences is hosting the 4th National Conference on Drowning Prevention from 7th to 8th of September 2021 which is the fourth one in this series. We once again present a conference about the drowning prevention challenge in Iran. In addition, the event focuses on the following topics: drowning surveillance, national drowning registry system, and how to best utilize primary care system for implementation of drowning prevention strategies. We are also pleased to announce that the accepted abstracts will be published in the Journal of Injury and Violence Research (JIVR).

The Drowning Prevention Conference 2021 has been made possible with the support of Non- Communicable Disease Department, Deputy of Health, Ministry of Health and Medical Education, Iran, Karolinska Institutet, Sweden, and JIVR Team in Kermanshah University of Medical Sciences, Iran. I would like to offer my sincere thanks to all of the supporters especially Dr. Alireza Moghisi, head of Injury Department of MOH, Iran, Dr. Reza Mohammadi in Karolinska Institutet, Dr. Alireza Ahmadi in Kermanshah University of Medical Sciences, and Dr. Shahrokh Yousefzadeh-Chabok, chair of GRTRC, Iran.

Finally, I would like to extend my gratitude to the chancellor of Guilan University of Medical Sciences, Dr. Arsalan Salari for giving us the opportunity to hold this event.

Yours Sincerely

Ali Davoudi-Kiakalayeh, MD, Ph.D., Postdoc, Assistant Professor

Guilan University of Medical Sciences, School of Medicine,

Department of Social Medicine, Iran.

The Center of Excellence of Drowning Prevention

Paper No. 1

Experiences of public pool lifeguards: a qualitative study

Parand Pourghane ^a, Sanaz Salimi ^{b*}

^a Associate Professor, Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran; Associate Professor, Department of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.

^b Resident of Clinical Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran.

Abstract:

Background: Public swimming pools have received a lot of attention in recent years. Spatial standards and the presence of lifeguards with knowledge of the cardiopulmonary resuscitation process can be a safe and attractive environment. Lifeguards in swimming pools play a very important role in this process as their role has changed a lot over the last 15 years. The purpose of this study is to explore the experiences of lifeguards in the pools of East of Guilan to understand their positive and negative experiences, to promote their positive experiences, and to reduce or eliminate barriers and challenges at work in order to create a suitable environment for leisure activities and sports for people.

Methods: This research was conducted qualitatively using a content analysis approach. For data collection, semi-structured interviews were conducted on 23 lifeguards who were selected through purposive sampling. Data analysis was performed according to the steps of Graneheim and Lundman. The accuracy and robustness of the research were assessed based on Lincoln and Guba's criteria.

Results: Three main categories including "declining motivation", "remote accesses" and "educational/learning challenges" were extracted.

Conclusion: The participants' declining motivation was due to not paying attention to the capabilities of individuals and equating the experiences of people with low and high working experience, receiving late and insignificant salaries, and insufficient attention to their overtime which should be considered by the authorities. Another unpleasant experience for some participants was the far distance between pools and medical centers and hospitals which is a high-stress challenge for lifeguards in emergency situations. The presence of experienced lifeguards with more skills in the field of cardiopulmonary resuscitation, and early responses from emergency centers in the city can not only reduce the stress of lifeguards but also be the ideal solution for the survival of the drowned.

Keywords:

Public Pool, Lifeguards, Qualitative Study

*** Corresponding Author at:**

Sanaz Salimi: Resident of Clinical Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran. Tel: +989112442040; Email: S86salimi@yahoo.com (Salimi S.). ORCID ID: <https://orcid.org/0000-0003-0765-1976>

Paper No. 2

Assessing the level of awareness of sports science students about the causes of marine trauma

Javad Moghadasi^a, Leila Keikavoosi-Arani^{b,*}, Elham Ehsani-Chimeh^c

^a Ph.D. in Higher Education Management, Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran.

^b Assistant Professor of Healthcare Services Management, Department of Healthcare Services Management, School of Health, Alborz University of Medical Sciences, Karaj, Iran.

^c Assistant Professor of Healthcare Services Management, National Institute for Health Research, Tehran University of Medical Sciences, Tehran, Iran.

Abstract:

Background: Marine trauma threatens the lives of many people in Iran and other countries every year. It affects a majority of the young population who are in a critical period of life to be effective for the development of their society. Increasing awareness can have a positive effect on reducing these injuries. This study aimed to assess the awareness of sports science students about the factors that cause marine trauma.

Methods: The statistical population of this descriptive survey was all sports science students in the Islamic Azad University of Science and Research in 2021 (N = 325). The sample size based on Morgan's table and Cochran's formula calculation was 176 people who were selected by stratified sampling method. The data collection tool was a two-part researcher-made questionnaire including demographic information and questions. Data analysis was performed using SPSS21 software and t-test, Wilcoxon, Kruskal-Wallis, and one-way analysis of variance.

Results: The knowledge of the majority of students (62.5%) about marine trauma was below average. The lowest score (1.86) belonged to "awareness of trauma caused by strong winds and storms" and the highest score (4.76) was related to "awareness of injuries caused by the bite of marine animals (sharks, etc.)". There was no statistically significant relationship between gender and awareness of marine trauma. There was a significant relationship between age, education, and experience in swimming with the level of awareness of marine trauma in some components.

Conclusion: The majority of sports science students had poor awareness about the causes of marine trauma, which shows the need to pay attention to increasing the level of awareness of these students.

Keywords:

Marine, Trauma, Sports Science, Education

*** Corresponding Author at:**

Leila Keikavoosi-Arani: Assistant Professor of Healthcare Services Management, Department of Healthcare Services Management, School of Health, Alborz University of Medical Sciences, Karaj, Iran. Tel: +980264303090; Email: Leila_keikavoosi@yahoo.com (Keikavoosi-Arani L.).

ORCID ID: <https://orcid.org/0000-0002-6581-2769>

Paper No. 3

Changing pattern of drowning in Chaharmahal and Bakhtiari province in central of Iran during 2018-2020

Salman Yadollahi ^a, Sadegh Heydarpoor Dastgerdi ^a, Kamran Mohammadi Janbazloufar ^{a,b,*}

^a Pre-Hospital Emergency Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran.

^b PhD Student, Department of Health in Disasters and Emergencies, Isfahan University of Medical Sciences, Isfahan, Iran.

Abstract:

Background: Drowning is regarded as a danger to people's health especially in the summer season considering the geographical location of Chaharmahal and Bakhtiari province. This study aimed to compare the drowning cases assisted by the Emergency Medical Services (EMS) of the province during the first six months of 2018 with similar periods in 2019 and 2020.

Methods: In a cross-sectional study, based on the data obtained from the Shahrekord's pre-hospital emergency records, the reports of 103 drowning cases who were rescued by Chaharmahal and Bakhtiari's EMS in the first 6 months of 2018-2020 were reviewed. Variables of age and sex of the drowned, patient's status (death, hospitalization), place of drowning, time of occurrence, mission response time, and month of the incident were provided to the authors by the Quality Control Team. These data were entered into the SPSS16 and analyzed by t-test and chi-square tests. The level of significance was considered 0.05.

Results: The trend of drowning cases in the first six months of 2020 increased by 115% compared with that of 2018. The results indicated that of 103 drownings, 82 (79.62%) cases were male and 21 (20.38%) were female. The highest number of drownings in terms of age group was 21 (20.38%) cases in 15- to 19-year-old ones. Most of the drowning places were rivers with 83 cases (80.58%) followed by dams with 7 cases (6.79%). Out of the total number of drowning cases, 83 cases (87.1%) were transferred to the hospital and 20 cases (20.38%) died.

Conclusion: It seems that most of the places prone to drowning are the rivers of Chaharmahal and Bakhtiari. Therefore, more efforts should be made to educate the public about the dangers of swimming in rivers with unsafe beds and unknown conditions.

Keywords:

Drowning, Emergency Medical Services, Chaharmahal and Bakhtiari, Iran

*** Corresponding Author at:**

Kamran Mohammadi Janbazloufar: Prehospital Emergency Care, Disaster and Emergency Medical Management Center, Shahrekord University of Medical Sciences, Shahrekord, Iran; & PhD Student, Department of Health in Disasters and Emergencies, Isfahan University of Medical Sciences, Isfahan, Iran. Tel: +98913164956; Email: kamran.Mohammadi.j@gmail.com (Mohammadi Janbazloufar K.).
ORCID ID: <https://orcid.org/0000-0001-7732-3228>

Paper No. 4

Advanced technologies in drowning prevention

Mostafa Golshekan ^{a,*}, Ali Davoudi Kiakalayeh ^a

^a Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran.

Abstract:

Background: Throughout history, technologies have been created to increase the health of society. In general, technologies have been developed to improve processes and reduce costs. One of the most important issues is the development of new health technologies. Today, the use of nanotechnology, biotechnology, intelligent electronic systems, artificial intelligence, etc. to increase the health of society is very noticeable.

Methods: In the present study, using the data obtained from the Iran National Registry of Drowning (INRD), new methods and technologies in drowning prevention have been studied.

Results: The proposed technologies for drowning are important in three ways: i-To improve processes (increase accuracy and ease of prevention), ii-To reduce the costs (reduction of mortality), and iii- To generate income from new methods (creating a market and producing new equipment). For example, a robotic detector from Coral Detection Systems that scans the pool for drowning activity is a high-tech system for the reduction of mortality.

Conclusion: Finally, it can be said that the development of new equipment and methods in preventing drowning and launching startups in this area is very important to increase not only the level of community health but also the income of the swimming industry.

Keywords:

Advanced Technologies, Drowning, Prevention, Iran

*** Corresponding Author at:**

Mostafa Golshekan: Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran. Tel: +981333239369;
E-mail: Mostafa.Golshekan@gmail.com (**Golshekan M.**). ORCID ID: <https://orcid.org/0000-0002-5982-6080>

Paper No. 5

A systematic review of microbiological applications in drowning and near-drowning

Seyed Shahram Mirzamani ^{a,*}

^a DVM-MPH, PhD, Candidate in Microbiology, Deputy of Health, Department of Health, Iranian Strategic Naval Force; Student of Department of Biology, School of Basic Sciences, Islamic Azad University, Science and Research Branch, Tehran, Iran.

Abstract:

Background: Drowning and near-drowning are the consequences of recreational activities and natural disasters. The purpose of this study was to review the microbiology literature on drowning and near-drowning and to understand its applications in the diagnosis and treatment of these injuries and diseases.

Methods: This study is the result of a short review on publications extracted by searching in scientific databases including Google Scholar, PubMed and Semantic Scholar in the period from 1961 to 2021, using the keywords "Microbiology" and "Drowning" or "Near-Drowning".

Results: A search in scientific databases revealed 184 articles related to "drowning" and "microbiology" and 84 articles related to "near-drowning" and "microbiology", of which 65 and 28 articles have been published in the last twenty years, respectively. Of these, 43 articles were used for this study. Regarding the microbiology of drowning and near-drowning, no study was conducted in the Islamic Republic of Iran in this field. The findings of the present study showed that:

- Near-drowning in its victims causes physical and mental injuries, and invasive polymicrobial and fungal pneumonia, brain abscesses, and sepsis.
- They are mainly associated with numerous bacterial agents e.g. *Aeromonas* spp., *Nocardia* spp., *Vibrio* spp., *Photobacterium* spp., *Burkholderiapseudomallei*, *Pseudomonas* spp., *Plesiomonas shigelloides*, and *Shewanella* spp. and Fungal and Protozoan pathogens are limited to *Aspergillus* spp., *Scedosporium apiospermum*, and *Rhizopus* spp., and *Cryptosporidium parvum* (rare), respectively.
- If bacterial, fungal, and protozoa infections are not properly diagnosed and treated in drowning victims, they can lead to death in intensive care units and even long after discharge from the hospital.
- Deaths from drowning and near-drowning are candidates for organ transplants, especially lung, bone, liver, and heart.
- Clinical, environmental, forensic, and eco-microbio-epidemiology studies in pre-and post-mortem drowning victims are being developed using cultured-based and molecular methods such as PCR, LAMP, NGS, and Metagenomics, etc. to determine the drowning microbiome pattern.

Conclusion: Several cases of infections and diseases caused by drowning and near-drowning have been reported among the victims of recreational activities and natural disasters in different countries. Therefore, eco-microbio-epidemiological study of drownings in our country, where there is an average of 1,200 annual drownings on the north and south coasts and inland waters is essential. Even predicting tsunami and destructive storms on the shores of the Caspian Sea and the Oman Sea are very important in determining the microbiome pattern of natural aquatic areas and the role of microbes in diseases and complications caused by drowning. Finally, a national protocol should be

developed for microbial monitoring of drowning victims from the scene of water accidents to the hospital bed and on the autopsy table.

Keywords:

Microbiology, Microbiome, Drowning, Near-Drowning, Natural Disasters

*** Corresponding Author at:**

Seyed Shahram Mirzamani: DVM-MPH, PhD Candidate in Microbiology, Deputy of Health, Department of Health, Iranian Strategic Naval Force; Student of Department of Biology, School of Basic Sciences, Islamic Azad University, Science and Research Branch, Tehran, Iran. Tel: 09124361052; Email: ss.mirzamani@gmail.com (Mirzamani SH). ORCID ID: <https://orcid.org/0000-0001-5203-8834>

Paper No. 6

Traumatic injuries in drowning

Zahra Mohtasham-Amiri ^{a,*}

^a Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran.

Abstract:

Drowning is one of the most serious and neglected public health problems. It causes the loss of more than 200,000 lives annually. More than 90% of this mortality rate occurs in low- and middle-income countries. In 2019, injuries accounted for almost 8% of total global mortality. Drowning is the 3rd leading cause of unintentional injury deaths worldwide and children are the main at-risk group. Data on traumatic injuries in drowning is scarce in most developing countries due to lack of appropriate mortality reporting system. Moreover, most of the studies are limited to only a few countries. For every child who dies in a drowning accident, 5 others will receive hospital care. Out of these near-drowning cases, 15 percent will die, and 20 percent will be left with severe neurological injuries. Based on the current limited studies, the prevalence of drowning injuries varies from 0.5% to 11% because of the differences in the study populations and the levels of hospitals. All injuries occurred in a swimming pool. The most prevalent site of injuries due to drowning was cervical spine, injuries to the C5 through C6 levels were the most common. Anoxic brain injury secondary to submersion was the most cause of death in hospital. Also, studies mention isolated case reports of retinal hemorrhages. The physical injuries described included bruising and fractures. Old age and a history of diving were the most risk factors for getting injuries. It has been recommended that physicians and emergency health workers who care for drowning/near-drowning patients be aware of possible trauma, especially cervical spine injuries. Those patients with a history of a traumatic mechanism such as diving should undergo evaluation by specialized trauma teams.

Keywords:

Keywords: Injuries, Drowning, Near-drowning

*** Corresponding Author at:**

Zahra Mohtasham-Amiri: Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran. Tel: +981333239369;
E-mail: mohtashamaz@yahoo.com (Mohtshma-Amiri Z.). ORCID ID: <https://orcid.org/0000-0002-4896-6248>

Paper No. 7

Vehicle submersion: an unknown mechanism of road trauma and drowning

Enayatollah Homaie Rad ^{a,*}, Ali Davoudi Kiakalayeh^b

^a Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran.

^b Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran.

Abstract:

Background: Vehicle submersion is an important cause of death in road traffic injury in Iran. Based on the data of the Iran's National Registry of Drowning (INRD), a high number of drownings are related to road traffic accidents. In the United States, 11% of overall drownings and about 5% of drowning deaths are related to vehicle submersion. In this review, we tried to find some information about vehicle submersion as an unknown cause of death.

Methods: A review was done using PubMed, Scopus, Web of Science, Google Scholar, SID, and IranMedex. Articles related to vehicle submersion were downloaded and related information was noted.

Results: There are no guidelines on how to rescue from a floated car in Iranian databases. However, there are some guidelines in English which have been revised totally in recent years. However, there are rare pieces of evidence to test the efficacy of these guidelines. The car submersion survival message contains 4 phrases: unbuckle the seatbelts, open or break the car window, remove the children and get out from the floated car. The depth of water is an important issue in car floating and if it is near 40 centimeters, the car will be floated in the water and if the depth is more than 40 centimeters it may turn turtle.

Conclusion: The mechanism of trauma in road vehicle submersion is mixed and might contain both injuries related to the road accident and drowning. New evidences are needed for health policymakers to develop rescue guidelines for escaping submerged vehicles. Evidences can also be used by engineers to make safe cars.

Keywords:

Vehicle, Submersion, Road Trauma, Drowning

*** Corresponding Author at:**

Enayatollah Homaie Rad: Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran. Tel: +989120558446;
Email: homaierad@gmail.com (Homaie Rad E.). ORCID ID: <https://orcid.org/0000-0002-9064-0380>

Paper No. 8

Fear of drowning (thalassophobia) and its coping strategies in nurses working in public hospitals in Eastern Guilan

Shiva Mahdavi Fashtami^a, Azar Darvishpour^{b,c,*}

^a Master of Internal-Surgical Nursing, Pirouz Hospital, Guilan University of Medical Sciences, Rasht, Iran.

^b Assistant Professor of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.

^c Social Determinants of Health (SDH) Research Center, Guilan University of Medical Sciences, Rasht, Iran.

Abstract:

Background: Thalassophobia is a special type of fear that is a constant and intense fear of deep water such as the ocean or sea. The aim of this study was to identify the fear of drowning (thalassophobia) and its coping strategies in nurses working in public hospitals in the east of Guilan province in 2021.

Methods: This is a cross-sectional descriptive study in which 156 nurses working in public hospitals in East of Guilan province participated by convenience sampling. The research tool was the thalassophobia Questionnaire and Coping Strategies which were designed online and made available to participants through virtual networks. Descriptive statistics were used to analyze the data using online questionnaire system.

Results: The majority of the samples (37%) were in the age group of 50-41. In terms of gender, 99% of all participants were female, married (78.5%) and had a bachelor' degree (85%). Most of them (31%) had 11-15 years of work experience and the majority (61.3%) were officially employed in terms of employment status. Regarding the items, majority of the participants stated that they were afraid of deep water (83.8%), when they go to deep places, they have shortness of breath (83.8%), they cannot swim alone (42.5%), they are afraid of drowning in the ocean more than anything there (61.3%). Despite these results, which are in favor of diagnosing thalassophobia, the majority answered that they were willing to travel by ship (61.3%) or if traveling by ship was the only option, they could board it (43.8%). Concerning the coping strategies, participants used firstly emotion-focused strategies (52.6%) and secondly, avoidance-based strategies (43.8%).

Conclusion: Although dealing with thalassophobia is challenging, there are ways to cope and reduce fear, and relaxation strategies can be used to calm the mind and body.

Keywords:

Drowning, Fear, Thalassophobia, Coping Strategies

*** Corresponding Author at:**

Azar Darvishpour: Assistant Professor of Nursing, Zeynab (P.B.U.H) School of Nursing and Midwifery School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran. Tel: +989111434065; Email: darvishpour@gums.ac.ir (Darvishpour A.).

ORCID ID: <https://orcid.org/0000-0002-2825-9685>

Paper No. 9

Evaluation of essential nursing care for children in the face of floods: a scoping review study

Fatameh Hoseinzadeh Siboni ^a, Kasra Mohebbi ^a, Zahra Taheri Ezbarami ^{a,*}

^a Department of Nursing, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.

Abstract:

Background: Flood constitutes almost half of the natural disasters occurring in the last ten years. Children are more vulnerable because of their unique physiological, psychological, and growth characteristics.

Methods: The methodology of this scoping review is in accordance with the proposed Arksey and O'Malley method. The primary question of the study was nursing care of children in the face of flood. Using 12 keywords, related articles were extracted from the search engines. Ultimately 18 articles were selected for the final inspection.

Results: Findings were classified into six questions: 1. Which psychological problems arise for children and their parents during and after floods? 2. What is the effect of flood on children's education? 3. Which factors and actions can reduce the flood vulnerability? 4. What are the health problems for children and their families during and after the flood? 5. Which factors affect the consequences of floods? The findings showed that children are much more vulnerable than adults, the most important factors influencing parental education are economic status, gender, age, the parents' occupation, and other factors such as schools' buildings, and proximity to rivers. Children suffer from various mental and physical disorders, child abuse, lack of access to health services, malnutrition, and growth and education process during and after the flood.

Conclusion: Older children are more affected, maybe due to their greater recall. The next factor is gender, which affects girls more than boys due to their greater self-confidence and presence in rehabilitation activities. Parents' jobs and the family sources of income are important, as the loss of flood-affected jobs such as agriculture threatens the family and children's well-being. Spirituality has been introduced as the protective factor of children from the destructive effects of flood. After a flood, children experience post-traumatic stress disorder, respiratory illness, educational problems, diarrhea, malaria, child abuse, and lack of health facilities. Some of these consequences are preventable. Solutions such as hospital development, drug security, pre-flood vaccination, the education obligation, and preventing child marriage can be effective. In addition, children can acquire the skills needed to manage the situation during a flood and to help parents through the training they receive before a flood occurs.

Keywords:

Nursing care, Complication, Disaster, Flood, Children

*** Corresponding Author:**

Zahra Taheri Ezbarami: PhD, Department of Nursing, School of Nursing and Midwifery, Guilan University of Medical Sciences, Rasht, Iran.
Tel: +98116967296; Email: Zahra_taheri@gums.ac.ir (Taheri Ezbarami Z.). ORCID ID: <https://orcid.org/0000-0003-2722-2431>

Paper No. 11

Investigating the predictive rate of protection motivation theory construct considering the preventive behaviors of drowning among parents of elementary school students

Leila Keikavoosi-Arani^{a,*}, Elham Ehsani-Chimeh^b

^a Assistant Professor of Healthcare Services Management, Department of Healthcare Services Management, School of Health, Alborz University of Medical Sciences, Karaj, Iran.

^b Assistant Professor of Healthcare Services Management, National Institute for Health Research, Tehran University of Medical Sciences, Tehran, Iran.

Abstract:

Background: Despite the high prevalence of drowning in the world, global estimates may underestimate the real public health problem of drowning. The aim of this study was to determine the predictive extent of protection motivation model constructs in drowning prevention behaviors from the perspective of parents of elementary school students.

Methods: In this descriptive-analytical study, 340 parents of primary school students in the west of Tehran province were studied. Sampling was done by cluster sampling method. First, among the government schools in the west of Tehran province, 4 schools were randomly selected (2 girl's school and 2 boys' schools with a population of approximately 300 students in the elementary school) (N = 1200). Based on Krejcie and Morgan table, the sample size was estimated 291 people. Considering the 20% drop, the sample number was 349. The data collection tool was a researcher-made questionnaire, the reliability and validity of which were assessed. Data were analyzed using SPSS19 software and Pearson correlation test and linear regression.

Results: The mean and standard deviation of the age of the parents was 32.55 ± 7.50 . The present research findings show that this model explains 67% of the variance of drowning marine trauma prevention behaviors. In this model, perceived severity ($\beta = 0.157$ and $P = 0.011$), fear ($\beta = 0.150$ and $P = 0.011$), perceived cost ($\beta = -0.153$ and $P = 0.019$) and behavior ($\beta = 0.213$ and $P = 0.004$) significantly predicted drowning prevention behavior.

Conclusion: Due to the greater correlation between protection motivation model constructs with the observance of drowning marine trauma prevention recommendations, the design and implementation of educational programs by school health educators are effective for increasing the motivation of primary school students.

Keywords:

Drowning, Protection Motivation Model, Elementary School, Iran

*** Corresponding Author at:**

Leila Keikavoosi-Arani: Assistant Professor of Healthcare Services Management, Department of Healthcare Services Management, School of Health, Alborz University of Medical Sciences, Karaj, Iran. Tel: +98264303090; Email: Leila_keikavoosi@yahoo.com (Keikavoosi-Arani L.).
ORCID ID: <https://orcid.org/0000-0002-6581-2769>

Paper No. 13

The trend of drowning before and after COVID-19 pandemic in Qazvin province: an area without sea shores in Iran

Leila Kouchakinejad-Eramsadati^a, Mostafa Amiri^b, Soheil Soltani^c, Kiyoumars Allahbakhshi^{d,*}

^a Ph.D. Student in Health in Emergencies & Disasters, Department of Health in Emergencies & Disasters, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

^b BSN, Prehospital Medical Emergency Organization, Qazvin University of Medical Sciences, Qazvin, Iran.

^c Medical Doctor, Emergency Medical Specialist, Qazvin University of Medical Sciences, Qazvin, Iran.

^d Faculty Member, Department of Health in Emergencies & Disasters, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

Abstract:

Background: Drowning is one of the leading causes of unintentional mortality in Iran. The COVID-19 pandemic combined with drowning has indirectly affected the community. Qazvin province has had a remarkable rate of drowning. This study aimed to investigate the impact of COVID-19 on drowning in this province.

Methods: In a cross-sectional study that used the national drowning registry database, all of the people in Qazvin who drowned between March 2017 to March 2021 were compared. Data were collected from the database of Emergency Medical Services in Qazvin and analyzed by SPSS software. Descriptive and Poisson regression and time series analysis were used.

Results: The number of missions before the COVID-19 outbreak was 35.6 per year and 32 after it. The number of deaths increased from 12.3 to 15. The mean age of the patients was 27.53 and 26.92 years before and after the pandemic, respectively. May-June had the highest number of drownings. Most of the drownings before and after COVID-19 belonged to the male gender. The number of missions in rural and urban areas increased after the COVID-19 outbreak, while all drowning callings outside urban and rural areas decreased. According to Poisson's estimation regression model, the drowning trend diminished with a coefficient of -0.037 and was statistically significant at $p = 0.032$.

Conclusion: The findings of the study indicated that COVID-19 did not impact the frequency pattern of drownings in Qazvin. However, the increased number of drownings in agricultural pools and urban water channels was significant. Travel restrictions, pool closures, and decreased global warming due to lockdown could have been effective on the number of drownings. Therefore, it is recommended that policymakers consider drowning prevention planning with priority given to young age groups.

Keywords:

COVID-19, Drowning, Qazvin Province

*** Corresponding Author:**

Kiyoumars Allahbakhshi: PhD, Department of Health in Emergencies & Disasters, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran. Tel: 02188951401; Email: allahbakhshi@sina.tums.ac.ir (Allahbakhshi K.). ORCID ID: <https://orcid.org/0000-0001-7152-0722>

Paper No. 14

Scene management approaches in dealing with drowning injuries: a review study

Maryam Lari Siahkal ^{a,*}, Mohammad Reza Shiri ^b, Tahereh Zahedsefat ^c, Alireza Mohsenipour Foumani ^d
Leila Shoaie Deilami ^e

^a BSc in Nursing, Health Education Expert of Siahkal Health Center, Guilan University of Medical Sciences, Rasht, Iran.

^b Pediatrician, Manager of Siahkal Health Center, Guilan University of Medical Sciences, Rasht, Iran.

^c BSc in Nursing, Master of Business Administration, Manager of Guilan Nursing Services, Guilan University of Medical Sciences, Rasht, Iran.

^d BSc in Nursing, MA in Electronic Learning Planning, Social Security Organization, Tehran, Iran.

^e BSc in Nursing, Supervisor of Amir Al-Momenin Hospital, Guilan University of Medical Sciences and Health Services, Rasht, Iran.

Abstract:

Background: Although drowning patients need emergency medical care, the majority of patients are never brought to treatment centers. Most drowning accidents occur to children under one, adolescents and young people, and pre-school boys in bathtubs, ponds, lakes, rivers, seas, and swimming pools, respectively. Rescue operations are critical and must start immediately. Death in drowned people is due to laryngospasm and lung damage, resulting in hypoxemia and affecting the brain and other body systems.

Methods: In the present review study, databases and scientific engines such as Google Scholar were searched using various keywords including “rescue”, “drowning”, and “management” from 2000 to 2020.

Results: The results show that improving rescue equipment quantitatively and qualitatively in coastal provinces is essential. Therefore, basic measures are critical for enhancing personal and public health. Proper attention and management of some fundamental rescue issues can prevent tragic accidents. Water immersion is traumatic for the injured person leading to ventilation lack due to prolonged hypoxemia. The injured person suffers from apnea and laryngospasm of varying severity and the duration of hypoxemia, and acidosis develops in the body due to initial shortness of breath, which results in cardiac arrest and ischemia of the central nervous system. After drowning in the first minute, laryngeal spasms due to aspiration and vagal stimulation occur. Spasm disappears and fluid aspiration with a larger volume appears in the third minute. During three to six minutes, blood circulation is disrupted, acidosis occurs and brain damage begins. After six minutes, anoxia and tissue damage are observed.

Conclusion: Various life-threatening criteria have to be evaluated to deal with an injured person immediately, including immersion time, water temperature, head, neck, and spine injuries, surviving ways, response to resuscitation, and essential factors and symptoms such as persistent cough, dyspnea, or apnea, change in the level of consciousness, vomiting, consumption of alcohol or drugs and underlying diseases.

Keywords:

Rescue, Drowning, Management

*** Corresponding Author at:**

Maryam Lari Siahkal: BSc in Nursing, Health Education Expert of Siahkal Health Center; Farabi 2 Al, Ansari Ave., Siahkal, Iran.
Tel: +989119292632; Email: m.lari33@chmail.ir (Lari Siahkal M.). ORCID ID: <https://orcid.org/0000-0003-3168-8859>

Paper No. 15

Investigating the risk factors of flood deaths in Iran

Arezoo Yari^{a,b}, Ali Ardalan^b, Yadolah Zarezadeh^a, Abbas Rahimiforoushani^c, Mohsen Soufi Boubakran^d, Farzam Bidarpoor^a, Abbas Ostadtaghizadeh^{b,*}

^a Social Determinants of Health Research Center, Research Institute for Health Development, Kurdistan University of Medical Sciences, Sanandaj, Iran.

^b Department of Health in Emergencies and Disasters, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

^c Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

^d Department of Mechanical Engineering, Urmia University, Urmia, Iran.

Abstract:

Background: Floods are kinds of natural disasters that directly threaten human life. To save lives and reduce the number of injured people in floods, it is crucial to determine the underlying factors of flood deaths. This study was conducted to find the causal factors which influence flood deaths in Iran.

Methods: The present research was conducted in four separate phases. In the first phase, a systematic review was conducted to determine the risk factors influencing flood death based on the available documents in the globe. In the second phase, using a qualitative study with content analysis method, the underlying factors that might cause flood deaths in different groups of Iranians were identified. In the next phase, a validated tool was developed based on the psychometry method. In the last phase, through a retrospective study using the validated tool, the risk factors affecting flood deaths were identified.

Results: The systematic review identified 114 risk factors which were categorized into five groups of vulnerability factors. The results of the qualitative study indicated that a large number of underlying factors lead to flood deaths including the categories of hazard-related features, cultural, economic, social, demographic, management, and physical factors. The results of regression analysis in a retrospective study showed that by increasing some risk factors, the likelihood of flood deaths decreases. While other groups of risk factors increase the risk of flood deaths.

Conclusion: Based on the findings of this study, comprehensive and appropriate strategies and interventions can be implemented to reduce and eliminate the impact of flood risk mortality and ultimately to reduce flood deaths. These include planning, training, promotion of awareness and culture of prevention, promotion of risk perception, protection of vulnerable groups, flood risk assessment and flood risk reduction, observance of urban and construction safety principles, improving urban flood management by responsible organizations, and involvement of people in all stages of death-flood risk management.

Keywords:

Flood-Death, Risk Factors, Iran

*** Corresponding Author:**

Abbas Ostadtaghizadeh: Poorsina Ave, Department of Health in Emergencies and Disasters, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran. Post Code: 14177-43578; Tel: +9802188991108; Email: ostadtaghizadeh@gmail.com (Ostadtaghizadeh A.).

ORCID ID: <https://orcid.org/0000-0001-5260-6221>

Paper No. 16

Epidemiology of drowning clients in Shiraz Emergency Medical Service (EMS) in 2020

Mohammad Javad Moradian ^{a,*}, Behnaz Rastegarfar ^b, Farahnaz Fooladband ^c

^a Assistant Professor, Department of Health in Emergencies and Disasters, Faculty of Management and Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran.

^b Ph.D. in Disaster and Emergency Health, Department of Disaster and Emergency Health, Faculty of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

^c Quality Improvement Expert, Disaster and Emergency Medical Management Center, Shiraz University of Medical Sciences, Shiraz, Iran.

Abstract:

Background: Drowning is one of the health problems in the world and one of the top ten causes of traumatic deaths in Iran. Managers' awareness of the characteristics of drowning clients helps to formulate and implement an intervention plan. The aim of this study was to investigate the epidemiology of drowning clients in Shiraz Emergency Medical Service (EMS) from 2019 to 2020.

Methods: Using the census method, the names of 62 people (all drowning emergency clients) and their information (age, sex, time and place of drowning, and the result of the emergency team mission) were extracted from Shiraz EMS in the years 2019-2020 and analyzed using SPSS (Version 23).

Results: Of all EMS clients, 0.02% were emergency drowning cases; 70.2% of them were male and 29.8% were female. Their mean age was 20.5 years (29.8% of children, 15.8% adolescents, 33.4% youth, 17.5% middle-aged, and 3.5% the elderly). About half of the drownings (47.4%) happened in the spring and 31.6% in the summer. More than half of the drownings (56.1%) occurred at 11 AM-3 PM and 32.3% at 4 PM-8 PM. Regarding the outcome of drowning, 42.1% of the drowned died, 42.1% were admitted to the hospital, 7% were cared at the scene and 8.8% of them did not cooperate to be transported to the hospital. Moreover, 42.9% of them had concomitant trauma with drowning, 54.2% of whom had head trauma, 12.5% had shoulder and back trauma and the rest had multiple trauma.

Conclusion: Public awareness should be raised on the possible dangers of drowning through health and media. EMS managers should emphasize considering traumas with drowning by technicians in the EMS. Public education about the EMS duty should be enhanced to gain more trust, participation, and cooperation of clients. Protection and safety enhancement of public pools, ponds, domestic and lakes, etc. should be emphasized by the authorities.

Keywords:

Epidemiology; Trauma; Drowning; EMS

*** Corresponding Author:**

Mohammad Javad Moradian: Assistant Professor, Department of Health in Emergencies and Disasters, Faculty of Management and Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran. Email: drmoradian@sums.ac.ir (Moradian MJ.). <https://orcid.org/0000-0002-2577-4446>