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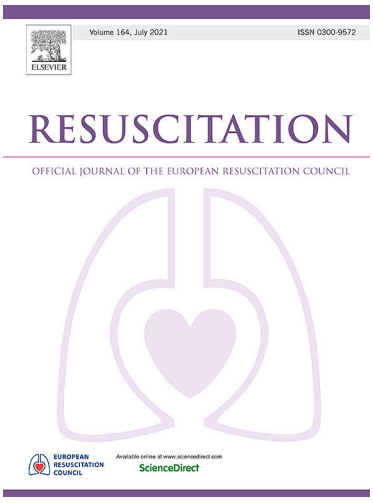

Letter to the Editor

Content Analysis of Twitter Users' Responses to the Crowd Crush Tragedy in Seoul, South Korea in October 2022

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Content Analysis of Twitter Users' Responses to the Crowd Crush Tragedy in Seoul, South Korea in October 2022

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To the Editor,

On 29 October 2022, during Halloween celebrations,156 people 65% of whom were young women, died following a crowd-crush in a narrow alley in Itaewon, South Korea.[1] In such events the leading cause of death is compression asphyxia, followed by hypoxic cardiac arrest.[2] Immediately, social media such as Twitter were flooded with reports from around the world.

Using the academictwitteR program, we compiled all tweets with English text for the first 24-hours after this catastrophe (from 6 PM local time when the emergency department received the first phone call).[3] We used the search terms #Itaewon, #prayforitaewon, #SouthKorea, #ItaewonDisaster, #itaewonhalloween, #ItaewonCrowdCrush and #ItaewonStampede. Entirely non-English tweets and retweets were excluded. We used the Syuzhet package to assess the sentiment of the tweet texts.[4] National Research Council Canada (NRC) Word-Emotion Association lexicon was used to analyse the tweets in eight categories of emotions (trust, anticipation, joy, fear, surprise, sadness, anger, disgust). It creates a sentiment score for each emotion-tweet text.[5] R (version 4.2.1, R Foundation for Statistical Computing, Vienna, Austria) was used for statistical analysis. Highly liked tweets containing videos depicting victims under life-saving rescue maneuvers (cardiopulmonary resuscitation - CPR) were analysed thematically.

In the observed period, 13,313 tweets were posted in English. Fear was the most reported (16.9%), followed by sadness (16.1%), trust (14.1%), anticipation (13.6%), joy (12.8), surprise (10.4%), anger (8.9%), and disgust (7.3). Figure 1 displays the most frequent tweeted words per emotion (*pray, loss, peace, Korea, death, time, lost, and president)*. Thematic analysis of the ten Twitter videos showing CPR revealed three key themes:

1) Bystanders performing chest compressions and helping emergency professionals,
2) Bystanders willingness to attempt to rescue victims,
3) Performance of life-saving maneuvers.

Most bystanders were adolescents performing chest compression at the crowd-crush site and assisting emergency professionals to engage in more advanced life support procedures. These adolescents showed impressive willingness to help their peers. However, videos show that layperson-CPR was often not optimal (e.g., chest compressions that were too fast or no chest recoil).

Possible measures to reduce crowd-crush fatalities might be brief introductory CPR-training sessions at mass gatherings,[6] and teaching preventative measures such as those recommended by the Centers for Disease Control and Prevention:[7]

1) arms in the boxer position (fist to face, elbows to sides, giving the lungs room for expansion),
2) avoid screaming to save energy and oxygen,
3) take a fetus position when on the ground to protect vital organs, and
4) move with the flow of the crowd.

The precise death toll from this crowd crush is still unknown. The next resuscitation guidelines on first aid[8] and cardiac arrest in special circumstances[9] might include advice on CPR for crowd-crush victims,[10] and the preventative measures that should be taught in the respective courses.

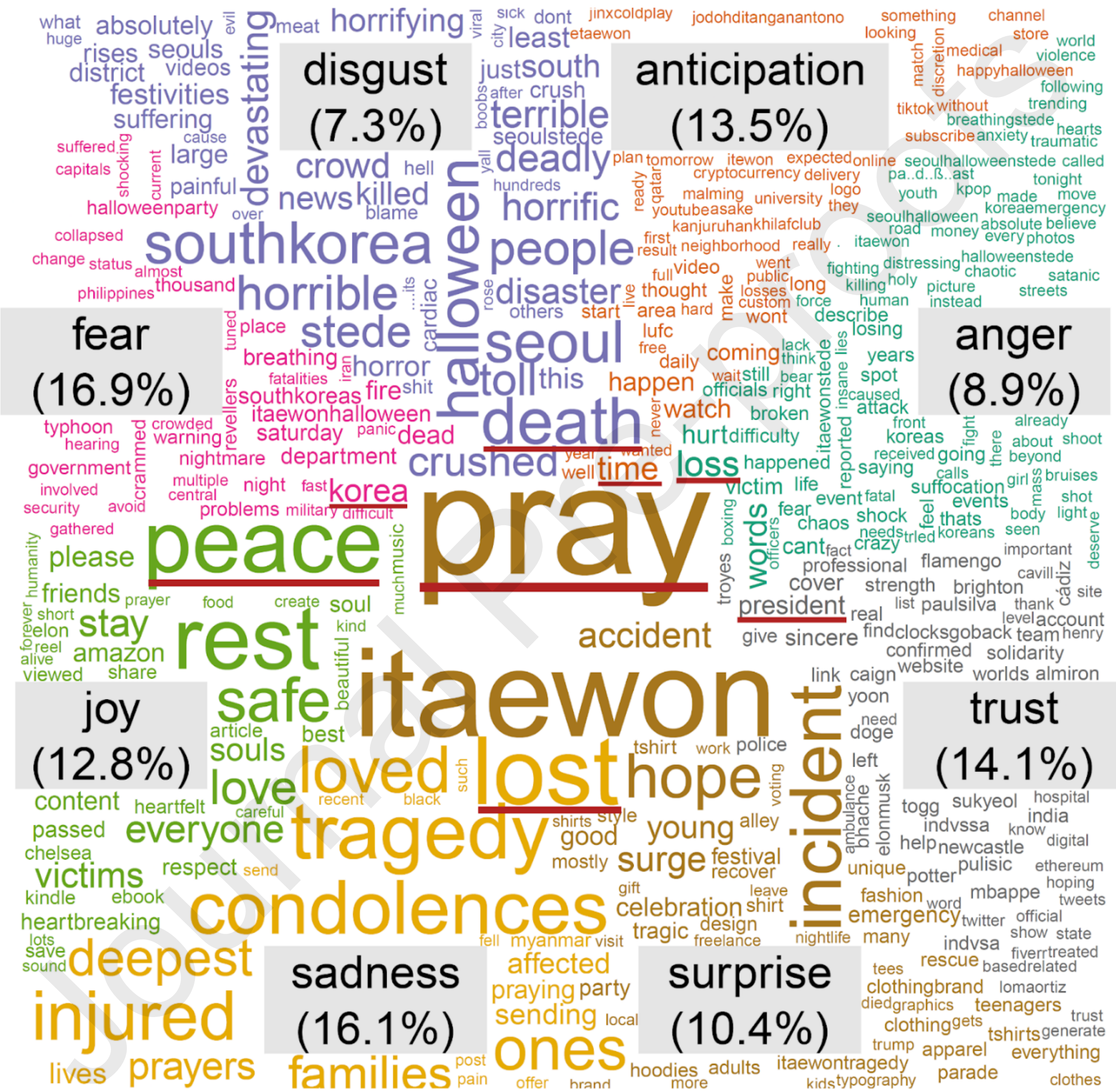

Figure 1: Word cloud of sentiment analysis of top 1000 tweets words posted within 24 hours of the event.

Conflict of interests:

Nino Fijačko is a member of the ERC BLS Science and Education Committee and ILCOR Task Force Education Implementation and Team. Robert Greif is ERC Director of Guidelines and ILCOR, and ILCOR Task Force chair Education Implementation and Team. Jerry P Nolan is Editor-in-Chief of Resuscitation and Member of the ERC Board. Gregor Štiglic and Primož Kocbek declare that they have no conflict of interest.

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