

# Evaluating the psychological impact of practice dispatch-assisted cardiopulmonary instructions using the ALERT protocol: preliminary results in Liege dispatching centre.

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## ABSTRACT

**Background.** The ALERT algorithm, an effective compression-only phone cardiopulmonary resuscitation (CPR) protocol has the potential to help bystanders initiate CPR. This study evaluates the psychological impact of the CPR's practice on untrained persons (UP).  
**Methods.** This is a quasi experimental longitudinal study (n = 153). We used: demographics data, CPR' emotional characteristics; the Peritraumatic Dissociative Experiences Questionnaire ; the Way of Coping Check List and the Impact of Event Scale.  
**Findings.** Two psychological profiles: UP at high risk to develop a post traumatic disorder (higher average scores ; high emotional distress during the CPR) versus UP at low risk.  
**Discussion.** These preliminary results highlight the importance of identifying the psychological profile of the UP. For a CPR, UP at high risk should be treated differently: first, take the time to reduce emotional distress and then only talk about the CPR. This step could reduce the risk for PTSD

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## Introduction

Recent reports suggest that witness presence during cardiopulmonary resuscitation (CPR) may be associated with a significantly lower incidence of post-traumatic stress disorders-related symptoms (PTSD) (Jabre *et al.*, 2013). However, little is known about the psychological burden of bystanders further involved in dispatcher-assisted CPR.  
The ALERT algorithm, a simple and effective compression-only phone CPR protocol has the potential to help bystanders initiate the procedure (Ghuyesen, A. *et al.*, 2011).

## Objectives

First, this study investigated this psychological impact of the CPR's practice on untrained persons (UP).  
Second, we explored the association between the CPR protocol, UP at high risk to develop a PTSD and the degree of attachment with the victim.

## Patients and Methods

We selected the 153 dispatching-center calls concerning out-of-hospital cardiac arrest from March to June 2012.  
Audio recordings of calls allowed the identification of bystanders phone CPR attempts, with the exclusion of technical problems or volunteers with prior medical or paramedical training.  
Included UP (be aged over 18 years) were joined by phone contact after six month-delay.

After six months, we used :

- ◆ Socio-demographic-medical data like age, gender, medication or stress perception during the CPR' Protocol.
- ◆ The Peritraumatic Dissociative Experiences Questionnaire (PDEQ) (Marmar, Weiss & Metzler, 2004 ; French version : Birmes, Brunet, & Benoit, 2004).
- ◆ The Impact of Event Scale (IES) (Horowitz & Alvarez, 1979 ; French version : Brunet, St-Hilaire, Jehel & King, 2003 )
- ◆ A high risk PTSD Profile : a score PDEQ > 15, a score IES > 33 and high emotional distress during the CPR ;

## Results

### Recruitment (N = 153) (cf. Fig. 1)

Out of the 153 dispatching-center calls, 44 participants were eligible cases. Out of these, 26 declined their participation in the study because of language constraints, lack of times, or no interest.

### Socio-demographic-medical data of the participants (N = 18) :

- ◆ Mean age was 49, with a sex ratio of 8 men for 10 women ; four participants used psychotropic medications before the resuscitation.

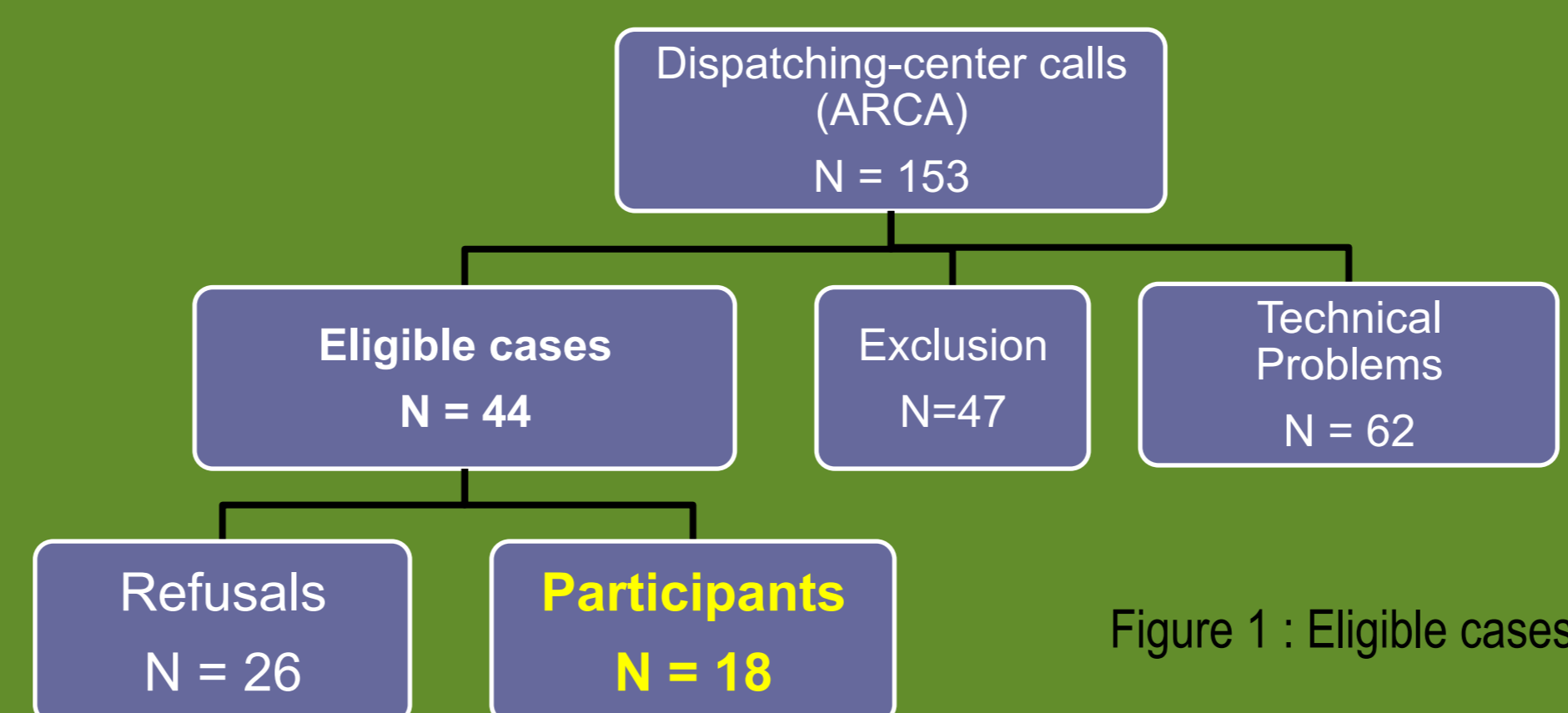


Figure 1 : Eligible cases

### HYP0 1 : Psychological impact of the CPR's practice (or not) on UP (N = 18)

- ◆ Out of the 18 participants , 11 UP have practiced CPR
  - ✓ Some participants have started CPR but were hampered because of the person's position or its body rigidity. Others don't start because they don't want to touch the body or don't feel able to do so.
- ◆ During CPR
  - ✓ Retrospectively, 14 UP reported that the level of perceived stress is high whereas for 4 participants, this level is moderate (N = 1) or low (N = 3)
  - ✓ Mean of PDEQ was 18.2, higher than the cut-off score and indicated the presence of peritraumatic dissociative experiences.
- ◆ Six months after the CPR
  - ✓ Mean of IES is 23.1, lower than the cut-off score and indicates the absence of PTSD six months later.

### HYP0 2 : CPR's practice, UP at high risk PTSD (N = 6) and Attachment (Cf. Fig 2)

Out of the 18 UP,

- ◆ 13 UP have described a high degree of attachment with the victim like for example husband, wife, child or friend relationship.
- ◆ Six months after the CPR, 6 UP present a high risk PTSD Profile :
  - ✓ Two girls, three wives and one husband;
  - ✓ Four UP have practiced the CPR;
  - ✓ Half the people were crying on the phone; tremors in the voice were noticeable;
  - ✓ Five have expressed doubt on
    - ✦ their ability to see if the victim was still breathing,
    - ✦ starting chests compression.
  - ✓ Except for one person, they all mentioned that they weren't sure if they would be able to practice the CPR on their relatives.

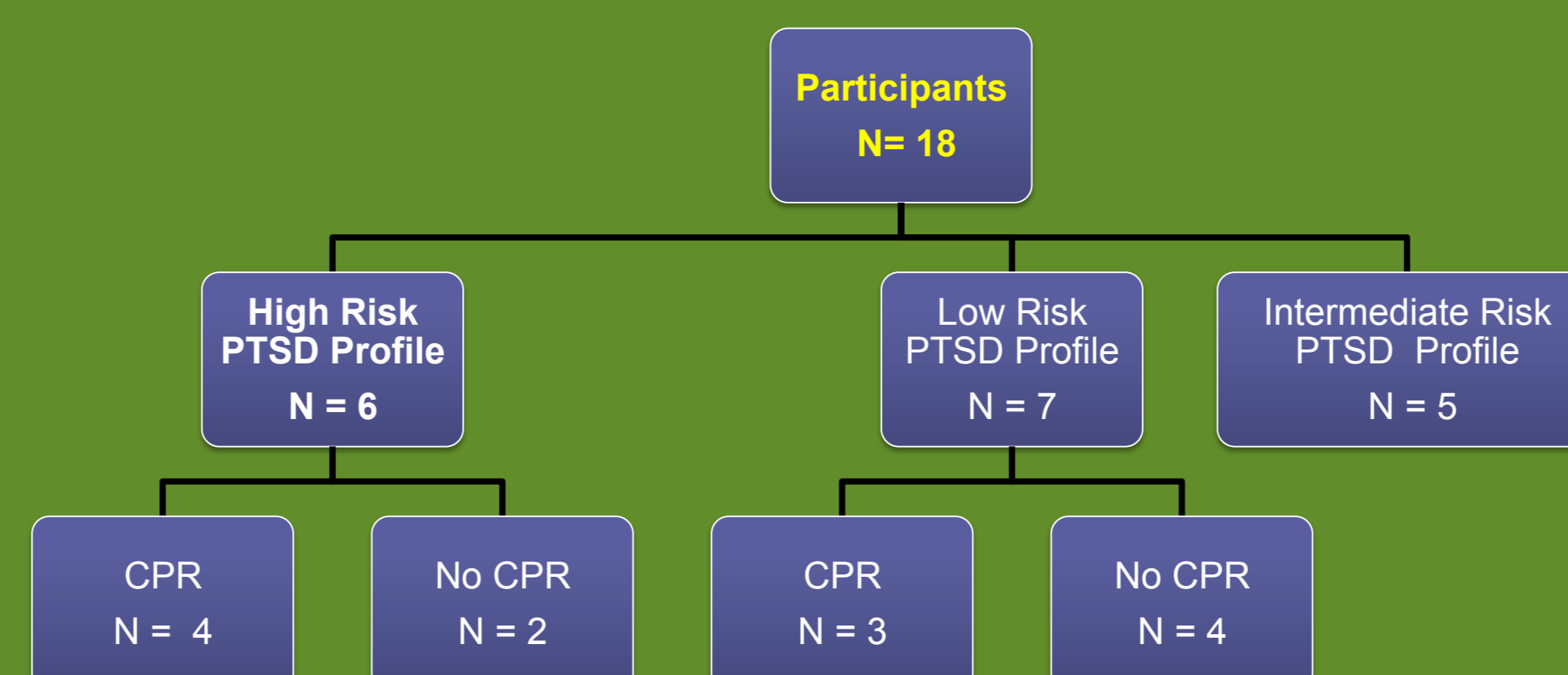


Figure 2 : Risk PTSD Profile and CPR (N = 18)

## Discussion and Conclusion

Participations to phone-CPR attempts are responsible for a relative psychological stress among untrained persons (UP) : out of the 18 participants, only 6 high-risk PTSD participants could be detected (with and without CPR attempts).  
However, the results must be interpreted carefully because the PDEQ score is obtained with a retrospective memory. A second difficulty, after six months, is to distinguish between PTSD symptoms and symptoms of grief related to the lost of a loved one.

To develop strategies to prevent the occurrence of PTSD, dispatchers must be trained to cope with dimensions such as: being a woman and having an emotional attachment to the victim, describing dissociative experiences such as (cf. items PDEQ) :

- ✓ *What was happening seemed unreal, like I was in a dream and I was playing a role in it.*
- ✓ *I was confused at times I had difficulty understanding what is really happening.*

For a CPR, we recommended that UP at high risk should be treated differently: first, take the time to reduce emotional distress and then only talk about the CPR. This step could reduce the risk for PTSD.

## References

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## Keywords

CARDIOPULMONARY RESUSCITATION  
POST TRAUMATIC STRESS DISORDER  
UNTRAINED PERSON

