A Virtual Reality Environment for testing Psychological Preparedness' effect on the individual when facing a Traumatic Event

Nikolaos Tsioumas[a]✉, Gerasimos Chatzidamianos[a], Panoraia Andriopoulou[a], and Timothy Jung[b]

[a] Faculty of Health, Psychology and Social Care
Manchester Metropolitan University, United Kingdom

✉ n.tsioumas@stu.mmu.ac.uk

g.chatzidamianos@mmu.ac.uk

n.andriopoulou@mmu.ac.uk

[b] Faculty of Business and Law
Manchester Metropolitan University, United Kingdom

t.jung@mmu.ac.uk

Abstract

Trauma's estimated global prevalence is 70%, and its effects are linked to various disorders including depression, psychotic episodes and PTSD. The high trauma-occurrence rate is not analogous with the disorder-development rate, suggesting that some individuals respond better than others. One protective factor may be psychological preparedness: a state of awareness, readiness, and anticipation toward a traumatic event. The present study uses a Virtual Reality simulation to examine the relationships between psychological preparedness and behavioural responses to traumatic events.

Keywords: Virtual reality; VR; psychological preparedness; psychological readiness; trauma; traumatic event

1 Introduction

Trauma refers to an event that exposes the individual to (actual or threatened) death, serious injury and sexual violence (American Psychiatric Association, 2013). Up to 70% of the global population experience some kind of a traumatic event (TE) at least once in their lives (Benjet et al., 2016) and it has been linked the development of a variety of disorders including depression, PTSD, borderline personality disorder and psychotic episodes. The fact that not all of those who have faced a TE develop some mental condition, suggests that some individuals handle the situation more efficiently than others.

One of the factors associated with reduced symptoms related to the stress caused by a TE, is psychological preparedness, an intra-individual and mental condition of mindfulness, expectation and availability towards a TE (Suhaimi & Marzuki, 2016). More specifically, studies suggest that individuals with pre-existing experience with similar stressors will be less affected by trauma than those without it (Basoglu et al., 1997), since they will be psychologically prepared to face a TE. However, the effect of psychological preparedness on the individual's behavior when coping with TEs has not been tested.

2 Theory

Computer generated (CG) environments have been successfully used as training and educational means in a variety of situations (Zyda, 2005). Virtual Reality (VR) is a currently advancing concept that allows for greater immersion and has also been an effective means of

service delivery on Trauma and Stress Related Disorders. Therefore, this PhD study suggests that a VR environment may be ideal for the simulation of a TE for research purposes, since it maintains the ability to assume a TE's emotional stimulation while avoiding exposure to physical harm.

3 Methods

This experimental study will include two groups of participants belonging to the general population, with the one receiving an intervention providing psychological preparedness and the other forming the control group. Both groups will be exposed to a simulation of a TE in a VR setting, so as the hypothesis that those psychologically prepared will be more in control of their behaviour following such an experience will be tested.

4 Discussion

With the latest social, economic and political developments happening globally TEs are becoming increasingly common, suggesting that related symptoms' rates will rise. The present study is expected to have direct implications on the treatment of trauma related symptoms and policy making, by providing a clear picture of what psychological preparedness actually is and how it affects the individual's coping with traumatic stressors. Moreover, the use of immersive CG environments may increase accessibility to such behaviour-enhancing interventions in a safe environment for training.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Başoğlu, M., Mineka, S., Paker, M., Aker, T., Livanou, M., & Gök, Ş. (1997). Psychological preparedness for trauma as a protective factor in survivors of torture. *Psychological medicine*, *27*(6), 1421-1433.

Benjet, C., Bromet, E., Karam, E. G., Kessler, R. C., McLaughlin, K. A., Ruscio, A. M., ... & Alonso, J. (2016). The epidemiology of traumatic event exposure worldwide: results from the World Mental Health Survey Consortium. *Psychological medicine*, *46*(2), 327-343.

Waqi Suhaimi, A., Ahmad Marzuki, N., & Author, C. (2016). The Importance of Psychological Preparedness among Flood Victims. *The European Proceedings of Social & Behavioural Sciences*, 158–168.

Zyda, M. (2005). From visual simulation to virtual reality to games. *Computer*, *38*(9), 25–32