

# Direct and Indirect Psychological Impacts of Shark Bite Events

Full article: Taylor, J, McLean, L, Korner, A, and Glozier, N (2018) Direct and Indirect Psychological Impacts of Shark Bite Events, *Australia and New Zealand Journal of Psychiatry* Article first published online: 31 October 2018. Available at: <https://doi.org/10.1177/0004867418808899>. Last Accessed 31 October 2018.

## Executive Summary

Shark bites are rare, with intense media exposure. There are no known studies of the psychological impacts of this specific type of traumatic event. This is the first study that describes those directly and indirectly affected, and evaluates the prevalence of post-traumatic stress disorder (PTSD) and related risk factors (Taylor et al., 2018).

This study was undertaken in partnership with Beyond the Bite Incorporated (BTB), a registered peer-support charity for shark bite survivors, first-responders, and their families. BTB is funded by grants and charitable donations, and provides members with mentoring, social connection, and shared experience, as well as practical support in hospital, and during rehabilitation, and return to function.

The New South Wales Department of Primary Industries awarded BTB funding for the study under the Shark Management Strategy Annual Competitive Grants Program in November 2016. BTB signed a research collaboration agreement with The University of Sydney in May 2017. The university human research ethics committee approved the study in August 2017 (2017/606).

124 'Bite Club' members and affiliates of BTB, who all report, direct or indirect exposure to a shark bite event, were invited to complete an online survey between October 2017 and March 2018. As this survey was the first of its kind, eligibility was limited to members or affiliates residing in Australia.

Survey response rate was 48% (n=60, 63% male, 44±14 years). The 122-question survey took 42 minutes on average to complete, excluding outliers. However, participants were permitted to complete it over more than one session if they wished. Six participants (10%) took more than two hours to complete the survey. Sixty respondents commenced and 51 (51/60, 85.0%) fully completed the survey.

The primary aim was to describe this sample from an Australian shark-bite peer-support group, and determine the prevalence of PTSD. Retrospective and current measures of PTSD (PCL-5), and suicidality (SIDAS-5) were used.

We then evaluated the following hypotheses:

1. Negative media experience was an event-specific risk factor for PTSD; and/or
2. Prior trauma history was a risk factor for PTSD.

## Key findings

1. Almost one-third of the sample retrospectively self-reported PTSD within three months following the event ( $n=16/59$ , 27.1%, 15.4 to 38.8), almost three times the national average (ABS, 2007; ABS, 2017).
  - a. However, respondents also showed possible resilience with a much lower prevalence of current PTSD ( $n=2/55$ , 3.6%, 0.0 to 8.7).
2. A further nine respondents were subthreshold, but highly symptomatic, post-event ( $n=9/59$ , 15.3%, 5.8 to 24.7) and a further five currently ( $n=5/55$ , 9.1%, 1.3 to 16.9)
3. Two respondents were at risk of suicidal behaviour and 14 affected by disability, potentially more than the national average (ABS, 2017).
4. Witnesses/first-responders, and family/friends, as well as direct survivors, developed symptoms of PTSD. In line with literature relating to vicarious trauma, this means those who were not present at the time of the event also reported symptoms.
5. Those without a partner were almost six times more likely to develop symptoms of PTSD (OR5.91, 1.52 to 22.99,  $p=0.01$ ).
6. Those with two friends or fewer to rely on were almost six times more likely to develop symptoms of PTSD (OR5.83, 1.62 to 21.01,  $p=0.01$ ).
7. Those for whom media coverage of the event had a negative impact on their recovery were almost twelve times more likely to develop PTSD symptoms ( $n=34/52$ , 65.4%, OR11.90, 1.42 to 100.04,  $p=0.02$ ). This confirmed the first hypothesis.
  - a. 61.5% ( $n=32/52$ ) of respondents reported media coverage lasting months or years. Few reported no media coverage ( $n=3/55$ , 5.5%).
  - b. The media asked respondents: if they wanted the specific shark involved in their event killed ( $n=23/51$ , 45.1%); their opinion on culling ( $n=31/51$ , 60.8%); to relive their event ( $n=36/51$ , 70.6%); and, to re-enact their event ( $n=17/51$ , 33.3%).
  - c. Respondents received support in dealing with the media from family ( $n=22/52$ , 42.3%), friends ( $n=15/52$ , 28.9%), hospital staff ( $n=6/52$ , 11.5%), or professional media management ( $n=4/52$ , 7.7%). 22 respondents ( $n=22/52$ , 42.3%) did not receive any media support, and seven of these ( $n=7/22$ , 31.8%) indicated that they had needed it.
8. However, those with a prior history of trauma were not more likely to develop PTSD in this sample. This is contrary to the second hypothesis.
9. In multivariate modelling, negative media impact, relationship status, and friends were independently associated with PTSD, and explained 52% of the variance in PCL scores ( $F_{4,41}=10.94$   $p<.0001$ ,  $r^2=0.52$ ).

Nearly one-third of members of an Australian shark bite peer-support group report post-event PTSD, and one-quarter of these were not present at the time of the event. Findings support interventions targeting negative media impact, similar to media reporting guidelines for suicide, and enhancing social support for survivors and their families. Future research might widen the sample to include community and international participants, incorporate specific digital/social media questions, and consider development of a case register for more timely measurement of the psychological impacts of these rare events.

## References

- ABS. (2007) 4326.0 - National Survey of Mental Health and Wellbeing: Summary of Results, 2007. Canberra: Australian Bureau of Statistics (ABS).
- ABS. (2017) 4364.0.55.001 - National Health Survey: First Results, 2014-15. Australian Bureau of Statistics.
- Taylor J, McLean L, Korner A, et al. (2018) *Direct and indirect psychological impacts of shark-bite events*. Available at: <http://journals.sagepub.com/doi/abs/10.1177/0004867418808899>.