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Impacts of Extreme Weather Events on Mental Health & Well-Being – Key Findings from a Global 'Scoping' Literature Review

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Available evidence indicates Extreme Weather Event (EWE) frequency has increased significantly in the last 70 years along a 0.5°C global temperature rise. As such, a major concern arising from global warming projections are the potential impacts of increasingly frequent and intense EWEs on public health and societal well-being. The substantial toll of EWEs on socio-economic and physical health is well understood. Yet, due to a range of methodological impediments, the impact EWEs on psychological health and well-being remain less certain. Within this context, this literature review aimed to provide an "empirical" baseline of the psychological and well-being impacts of individuals exclusively exposed to EWEs. Given the wide range of psychological and well-being metrics available in the literature, the review was grounded on a 'holistic' approach with the all-encompassing concept of "psychological impairment" adopted. Here, impairment data, or morbidity, was pooled at the level of key Diagnostic and Statistical Manual of Mental Disorders (DSM) psychological "Domains", including PTSD, Anxiety and Depression. Morbidity data was also pooled at a "composite" (any impairment) category encompassing all employed DSM-based domains. Further, reported risk factors ($p < 0.05$) and pooled odds ratios (pOR) were extracted and calculated from each pertinent study. Overall, 59 peer-reviewed investigations accounting for 61,443 EWE-exposed individuals comprised the review dataset. A "composite" post-exposure pooled-prevalence rate of 23% was estimated along with values of 24% for depression and 17% for both PTSD and anxiety. Notably, estimated pOR (1.9) indicate a > 90% likelihood of a negative psychological outcome or impaired well-being among exposed individuals. Methodologically, a prevalent lack of integration of "control" criterion among reviewed investigations was identified. In this context, pooled data collated can be considered more akin to "prevalence" rates rather than a finite metric of "incidence" linking EWE exposure and outcomes. Collation of reported risk factors indicate more pronounced impacts among individuals with higher levels of EWE exposure (14.5%) and socio-demographic traits which are often associated with vulnerable population sub-groups, including female gender (10%), lower socio-economic status (5.5%), and a lower education level

(5.2%). Regionally, Asia exhibited the highest impairment rates which is tentatively attributed to a combination of high EWE frequency and population density. The findings of this study provide a quantitative evidence base which can be used to inform public health intervention strategies focusing on exposed populations in the aftermath of EWEs.