**Study Sample and Data Collection**

Our study used a cross-sectional dataset from the Mental Health Million (MHM), an on-going study with the purpose of assessing global mental wellbeing through administration of the MHQ. Initial recruitment targeted the English-speaking population living in the United States, United Kingdom, Canada, South Africa, Singapore, Australia, New Zealand and India, but was later expanded to include Spanish and French speakers as well as other countries for the purpose of capturing a broader global sample. The sample for our present study included 220,324 participants from 214 countries who completed the MHQ from XXX to XXX. Additional information concerning the MHM project and recruitment strategy may be found elsewhere (Newson et al., 2021). This study involved secondary analysis of existing data and there Institutional Research Ethics Board approval was not required.

**Measures:**

**Mental Wellbeing:**

The MHQ is a 47-item voluntary online survey designed to assess a comprehensive range of common attributes found across widely used existing mental health assessment tools in a single questionnaire to estimate overall mental wellbeing and functioning in the population. Items were developed by consolidation of 170 symptoms coded from 126 commonly used psychiatric assessment tools covering depression, anxiety, bipolar disorder, ADHD, post-traumatic stress disorder, obsessive-compulsive disorder, addiction, schizophrenia, eating disorder and autism spectrum disorder. The survey took an average of 14 minutes to complete.

Responses were computed into an overall mental wellbeing score, ranging from -100 to +200. Scores can be categorized into six levels of functioning, with negative scores indicating clinical risk and positive scores representing normal range: Clinical (≤-50), At Risk (-50 to <0), Enduring (0 to <50), Managing (50 to <100), Succeeding (100 to <150) and Thriving (150 to 200). To compute the overall score, individual item responses were weighted to reflect the nonlinearity of risk associated with increases in symptom severity, as well as the differential risk associated with different symptoms (e.g., suicidal thoughts vs irritability).

In addition to the overall wellbeing score, scores for six broad subcategories of mental wellbeing were computed: Core Cognition (ability for executive functioning), Complex Cognition (reflecting more complex processes such as problem-solving, creativity, and adaptability), Mood and Outlook (ability to effectively regulate ones emotions), Drive and Motivation (ability to achieve goals in the face of obstacles), Social Self (social functioning), and Mind-Body (physical functioning and psychosomatic health). Subcategory scores ranged from -50 to +100, and were computed by a weighted average of scores from 10 to 24 relevant symptom items based on a review of cognitive and brain functioning models (Newson et al., 2020).

**Physical Activity**: Participants responded to single item that asked: “How regularly do you engage in physical exercise (30 minutes or more)?” Response options included “Rarely/never”; “Less than once a week”; “Once a week”; “Few days a week”; and “Every day.

**Covariates**: These included age (within bounded range), sex, gender identity, ethnicity, country(?), educational attainment, employment status, relationship status, sleep adequacy, frequency of socializing with friends, diagnosis of medical condition (yes/no), whether they are currently receiving mental health treatment (yes/no), and whether they have had a significant traumatic experience (yes/no). These variables will be referred to as the full covariate set. All items in which participants responded “Prefer not to say” were recoded as missing for purposes of multiple imputation.

**Data Analysis:**

project with responses from January – July 2022 from n = 9999 participants. The MHM project is

Participants completed the 47-item Mental Health Quotient, a survey developed from the recognition of the heterogeneity of mental disorders

MHQ developed by consolidating content from 126 existing mental health assessment tools into a parsimonious 47 attributes of MH