Real-life behavioral and neural circuit markers of physical activity as a compensatory mechanism for social isolation

Real-life behavioral and neural circuit markers of physical activity as a compensatory mechanism for social isolation - Nature Mental Health (https://doi.org/10.1038/s44220-024-00204-6); informações adicionais

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Objetivos:

> Real-life behavioral and neural circuit markers of physical activity as a compensatory mechanism for social isolation, p.338

> In this study, we hypothesized that physical activity can compensate for the negative. affective effects of lacking social contact in daily life and that individuals at increased neural4 and psychological9 risk for depression benefit most from this compensatory mechanism.

> É consenso na literatura que o isolamento social e solidão aumentam a mortalidade através de fatores de risco a saúde como obesidade, consumo de álcool e tabagismo, por exemplo. Uma das estratégias para mitigar esses efeitos é a prática de atividades físicas, que tem fator protetor na qualidade de vida e saúde mental do indivíduo

Metodologia:

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> We studied a community-based cohort of 317 healthy young adults aged 18–28 years (57.09% females), recruited from September 2014 to November 2018, for 7 days during everyday life (Table 1 and

> Supplementary Table 1). We further studied a replication sample of 30 healthy adults aged 18–63 years, recruited from December 2019 to July 2022, for 6 months during everyday life during the COVID-19 pandemic in Germany (Supplementary Table 7). The biological sex of participants was determined using a questionnaire

> O pacientes usaram acelerômetros em seus quadris ou punhos para medir a quantidade de de atividades físicas e foram instruídos de registrarem suas interações sociais, reais ou via digital.
> Fora utilizada medidas de confiabilidade de múltiplas escala, Spearman correlations com variação Spearman-Brown
> A análise de dados foi realizada com uma base coletada através de um digitalização cerebral SAS v.9.4. e usando ONN toolbox v.19c i, no MATLAB v. 9.8 (R2020a)

Resultados:

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> The physical activity of individuals (Fig. 1 and Table 1) significantly moderated the known relationship 2 between momentary social isolation and decreased affective valence in everyday life (β = 0.01; 95% confidence interval (CI) = 0–0.02; P = 0.020; Supplementary Table 2). Specifically, higher physical activity significantly decreased the reduction in affective well-being associated with the lack of social contact (Fig. 2a–c). According to our data, about 349 milli-g (g/1,000) physical activity across 1 h (for example, walking approximately three miles per hour) are necessary to fully compensate for the lack of affective well-being in everyday life (Supplementary Results 1). We successfully replicated this effect in the second sample we studied during the COVID-19 pandemic (β = 0.03; 95% CI = 0.02–0.04; P < 0.001; Fig. 2c, study 2; Supplementary Table 8). At the neurobiological level, individuals with higher resting-state functional connectivity within the default mode network (DMN), a risk phenotype for loneliness and depression , compensated best for this momentary ‘social-affective deficit’ through physical activity (β = 0.14; 95% CI = 0.01–0.26; P = 0.029; Fig. 3b and Supplementary Table 3). Moreover, we observed similar benefits of physical activity at the between-individual level and related it to established psychological risk factors for mental health.

Síntese de discussão e conclusões:

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> Our multimodal epidemiological cohort study shows that physical activity is reproducibly linked to better affective well-being in people lacking social contact in daily life, especially in persons at neural and psychological risk for affective disorders. These data suggest an effec-

Informações adicionais

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