

Towards Integrated Multiple Behavior Management for HIV and Chronic Conditions: a Comment on Blashill et al.

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Blashill and colleagues' [1] research in a large multi-site cohort of men who have sex with men infected with human immunodeficiency virus (HIV) followed clinically over 11–14 months examined longitudinal mediational relationships between physical inactivity, depression, antiviral medication nonadherence, and viral load, while controlling for age and CD-4 counts. Several aspects of this paper can serve as a model for behavioral medicine research and practice.

Improvements in antiretroviral adherence are allowing people with HIV to live longer and to experience increasing morbidity and mortality from many HIV-associated non-AIDS conditions [1–3], including aging. This literature supports vital interrelationships in people living with HIV between antiretroviral (ARV) adherence, depression management [3–5], and physical activity [6, 7]. Converging evidence strongly supports increased attention to multiple HIV management behavior changes, including those targeted in this study [1]. In spite of this convergence, focus on longitudinal relationships between multiple behaviors in those with HIV is still fairly recent [1, 8, 9] and has only rarely examined mediation.

Co-authors reflect true team science [1, 10] including HIV specialists, methodologists, clinicians, and behavioral scientists. Results support better integrated “team” practice as well, including mental health, behavioral health, substance use, and medical care [4].

This research examined self-report constructs (depression, adherence, physical activity) and two biomedical indicators of HIV progression (CD-4 count and viral load). The reported longitudinal mediation effect sizes (see Table 3 of [1]) are small to moderate, but are impressive and potentially clinically meaningful nonetheless. The potential importance of small effects is

not reflected in their size [11]. Even small effects can demonstrate clinical utility and meaning when they can be enhanced or impacted upon by a range of interventions and accumulate over time, as is true of these effects. Furthermore, reported naturalistic effect sizes reflect extremely specific relationships to this outcome, whereas many important impacts of behavior changes may be reflected instead in their generality [12]. In other words, improvements in depression or physical activity have a range of benefits, only one of which is reflected in these effect sizes. Indeed, depression and physical activity interventions are so well founded in and of themselves, that hardly another reason is needed to use them. Yet, this evidence suggests at least one more good reason: synergy across these multiple behaviors over time. Next research steps may examine ways to intervene to enhance these effects and other potential synergies between additional behaviors. Results [1], if replicated, suggest evaluation of various multiple behavior change strategies [13], perhaps sequential strategies, in this area. In addition, given the global reach of HIV and associated illnesses in many resource-poor settings, evaluation of various effective interventions for depression, physical activity, and medication adherence and that are also scalable and disseminable are warranted. Replication of these results would broaden their generalizability, both within the USA and internationally. Future research may evaluate how evaluating additional constructs (e.g., well-being, stress) and inflammatory or aging-related biomarkers (e.g., C-reactive protein [2], telomere length [14]) could elucidate some of the complex interrelationships involved in aging with HIV [2]. These results underscore the importance of multiple behavioral risk management and integrated, inclusive care in the treatment of chronic diseases, especially HIV. Application of this informed behavioral medicine framework beyond HIV management to the management of chronic conditions [15] could enhance both research and clinical services for individuals coping with chronic diseases, including HIV. This paper provides new evidence that moves

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this field closer to meeting a vital behavioral health challenge within and beyond HIV care: how to effectively and efficiently facilitate multiple health behavior changes to both manage chronic disease and enhance well-being. In this era of ARV treatment as prevention [16], this evidence supports studying ways to integrate effective preventive interventions for depression and physical activity into adherence treatments, as well. The global reach and impact of HIV make research and dissemination programs to meet these challenges imperative.

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References

1. Blashill A, Mayer KH, Crane H, Magidson JF, Grasso C, Mathews WC, Saag MS, Safren SA. Physical activity and health outcomes among HIV-infected men who have sex with men: A longitudinal mediational analysis. *Ann Behav Med*. 2013. doi:10.1007/s12160-013-9489-3
2. High KP, Brennan-Ing M, Clifford DB, et al. HIV and aging: State of knowledge and areas of critical need for research. A report to the NIH Office of AIDS Research by the HIV and Aging Working Group. *J Acquir Immune Defic Syndr*. 2012;60:S1-S18.
3. Wada N, Jacobson LP, Cohen M, French A, Phair J, Munoz A. Cause-specific life expectancies after 35 years of age for human immunodeficiency syndrome-infected and human immunodeficiency syndrome-negative individuals followed simultaneously in long-term cohort studies, 1984–2008. *Am J Epidemiol*. 2013;177(2):116–125.
4. Coughlin SS. Invited commentary: Prevailing over acquired immune deficiency syndrome and depressive symptoms. *Am J Epidemiol*. 2013;177(2):126–128.
5. Sherr L, Clucas C, Harding R, Sibley E, Catalan J. HIV and depression: A systematic review of interventions. *Psychol Health Med*. 2011;16:493–527.
6. Ogaltha C, Luz E, Sampaio E, et al. A randomized, clinical trial to evaluate the impact of regular physical activity on the quality of life, body morphology and metabolic parameters of patients with AIDS in Salvador, Brazil. *J Acquir Immune Defic Syndr*. 2011;57 (Suppl 3):S179–S185.
7. El-Bassel N, Jemmott JB, Landis JR, et al. Intervention to influence behaviors linked to risk of chronic diseases: A multisite randomized controlled trial with African-American HIV-serodiscordant heterosexual couples. *Arch Intern Med*. 2011;171(8):728–736.
8. Hessol NA, Ameli N, Cohen MH, Urwin S, Weber KM, Tien PC. The association between diet and physical activity on insulin resistance in the Women's Interagency HIV Study. *J Acquir Immune Defic Syndr*. 2013;62(1):74–80. doi:10.1097/QAI.0b013e318275d6a4.
9. Weiss SM, Tobin JN, Antoni M, et al. Enhancing the health of women living with HIV: The SMART/EST Women's Project. *Int J Women's Health*. 2011;3:63–77. doi:10.2147/IJWH.S5947.
10. Hall KL, Stokols D, Stipelman BA, et al. Assessing the value of team science: A study comparing center- and investigator-initiated grants. *Am J Prev Med*. 2012;42(2):157–163. doi:10.1016/j.amepre.2011.10.011.
11. Rossi JS. Statistical power analysis. In: Schinka JA, Velicer WF, eds. *Handbook of Psychology. Vol. 2: Research Methods in Psychology*. 2nd ed. New York: Wiley; 2013:71–108.
12. Prochaska JO. New paradigms for inclusive healthcare: Toward individual patient and population health. In: Wallace BC, ed. *Toward Equity in Health: A New Global Approach to Health Disparities*. New York: Springer; 2008:61–78.
13. Prochaska JO. Multiple health behavior research represents the future of preventive medicine. *Prev Med*. 2008;46:281–285.
14. Epel ES. Telomeres in a life-span perspective: A new “psychobiomarker?”. *Current Directions Psychol Science*. 2012;18(1):6–10.
15. Swendeman D, Ingram BL, Rotheram-Borus MJ. Common elements in self-management of HIV and other chronic illnesses: An integrative framework. *AIDS Care*. 2009;21(10):1321–1334.
16. Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. *N Engl J Med*. 2011;365:493–505.