Long-term cannabis use and preparedness for ageing

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The longitudinal study by Madeline H Meier and colleagues[1] on the preparedness for healthy ageing and polysubstance use in people with long-term cannabis use, published in *The Lancet Healthy Longevity*, reports on a topic about which relatively little is known—ie, the effects of long-term cannabis use on mid-life ageing indicators, including biological ageing, and health, financial, and social preparedness for old age. The study makes use of the Dunedin longitudinal cohort, which has been followed up repeatedly up to age 45 years. Findings showed that people with long-term cannabis use had worse outcomes than those who had never used cannabis on measures of biological ageing, health preparedness, financial preparedness, and social preparedness. However, given that use of multiple substances was common among individuals who used any one substance, the study also addressed the challenge of polysubstance use by analysing the outcomes in people with long-term cannabis use and comparing them with outcomes of those who had never used cannabis, those with long-term tobacco use, long-term alcohol use, and mid-life recreational cannabis use, and those who had quit using cannabis before age 45 years. Analyses specifically addressing polysubstance use compared long-term cannabis use with long-term alcohol use and long-term tobacco use, and also examined dose–response associations for persistent dependence on each substance after accounting for persistent dependence on the other substances. Results indicated that multiple substance use and substance dependence accounted for the findings on biological ageing, health preparedness, and financial preparedness rather than cannabis use alone. However, cannabis dependence itself remained robustly related to poorer midlife social preparedness, particularly social support.

In many ways, the design of this important study is exemplary: a prospective study of people with cannabis use who were repeatedly assessed for substance use and other relevant variables throughout their lives. The study design overcomes methodological concerns regarding cross-sectional studies on similar topics in middle-aged samples based on one-time retrospective reports of cannabis and other substance use or substance use disorders over the lifecourse, which are susceptible to memory problems and might seriously underestimate lifetime rates compared with studies that prospectively assess participants repeatedly as they age.[2] The comparison groups were chosen with care and provide an excellent basis for evaluating the effects of long-term cannabis use relative to long-term use (or absence of use) of other substances. The authors controlled for many relevant variables, and also conducted e-tests to determine whether their results could be accounted for by unmeasured confounding. Their conclusions on polysubstance use take appropriate account of the results.

Of course, no single study can address all questions, and some questions remain, such as whether the use of illicit substances or non-medical use of prescription medications (eg, opioids or stimulants) would have affected the outcomes. The study also did not address whether the presence or absence of mental health conditions would have affected the results. Many studies have shown that other substance use and mental disorders are more prevalent among people who use cannabis and among those with cannabis use disorder than in others with no substance use disorder,[3] so these conditions will be important to include at some point if numbers permit. Also, as the authors note, the tetrahydrocannabinol potency of cannabis has increased considerably over the past few decades;[4] therefore, cohorts beginning their cannabis use more recently than the cohort studied are likely to be using much more potent cannabis products, which could potentially yield different results.

In addition, the norms and legal status of cannabis are undergoing marked changes in many countries. These changes include the increasing perception that cannabis can be used without risk of adverse consequences, including among older adults,[5] and that such use is beneficial for many health and medical reasons—a perception that is encouraged by the growing cannabis for-profit industry, with some claims made without a scientific basis. Concomitantly, legalisation of cannabis use for medical and also recreational use is growing in states in the USA, and also in other countries (eg, Canada, Uruguay, Malta, and South Africa). How all these changes will affect the consequences of long-term cannabis use is presently unknown and remains to be shown by future research studies.

In the context of other studies, the present study by Meier and colleagues[1] is consistent with findings from a nationally representative US sample of 14 715 adults aged 50 years or older showing an association of cannabis use and cannabis use disorder with lower perceived social support, even when controlling for other risk factors including use of other substances and psychiatric disorders.[6] These findings were interpreted as indicating the need to develop intervention strategies to address the needs of older adults for better social support, and to reduce their marijuana use.[6] However, findings from Meier and colleagues' study[1] diverged from findings in another study of the Dunhedin cohort on long-term cannabis use and cognitive decline.[7] This study found that long-term cannabis use was associated with many aspects of cognitive decline from childhood to midlife, and with informant-reported memory and attention deficits.[7] In contrast with Meier and colleagues' study on preparedness for healthy ageing,[1] in which many of the outcomes were better accounted for by polysubstance use than by cannabis use alone, the findings on cognitive deficits were specific to people with long-term cannabis use[7] because they were either not present or were smaller among people with long-term tobacco use and long-term alcohol use. The findings on manifestations of cognitive decline specifically attributed to long-term cannabis use are important because such deficits predict dementia in older adults,[8] a problem that is growing in prevalence and in seriousness to society given the ageing populations of many countries.

The findings reported by Meier and colleagues[1] showing that long-term cannabis use specifically predicts worse social preparedness have important implications. People with long-term cannabis use had significantly worse social support than the other groups, findings that remained robust after analytically addressing the use of other substances. These findings suggest that attention to lack of social support among middle-aged and ageing individuals with long-term cannabis use is warranted. For health and mental health professionals, this focus could include helping patients develop better social supports and stronger social networks to provide positively reinforcing activities other than cannabis use. For research purposes, given the role of social support in healthy ageing, measures of social support should be included in studies of individuals who use cannabis across all life stages, including among younger people and those in middle age, to learn more about the life-stage trajectories of social support among people who use cannabis. Finally, research explaining the mechanisms giving rise to poor social support among individuals who use cannabis is needed to help develop effective prevention and treatment measures.

I declare no competing interests.

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