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The association between Act-Belong-Commit indicators and problem drinking among older Irish adults: Findings from a prospective analysis of the Irish Longitudinal Study on Ageing (TILDA)



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ABSTRACT

The Act-Belong-Commit campaign is the world's first comprehensive, population-wide, community-based program to promote mental health. However, its potential for preventing substance use disorders is unknown. Further, a literature gap is evident concerning behavioral modification strategies to prevent such disorders. The aim of this study was to prospectively assess the association between indicators of the Act-Belong-Commit behavioral domains and the development of problem drinking.

Data from two waves of the Irish Longitudinal Study on Ageing (TILDA) were analyzed. The sample consisted of 3950 adults aged ≥ 50 years. A validated scale for problem drinking was used. The number of social/recreational activities engaged in was used as an indicator of Act, social network integration as an indicator of Belong, and frequency of participation in these social/recreational activities as an indicator of Commit. Multivariable logistic regression analyses were conducted to assess associations between baseline indicators of Act-Belong-Commit and the development of problem drinking at two-year follow-up.

Each increase in the number of social/recreational activities (Act) inversely predicted the onset of problem drinking. Similarly, being well integrated into social networks (Belong) was negatively associated with the development of problem drinking. Finally, frequency of participation in social/recreational activities (Commit) also inversely predicted the onset of problem drinking. These associations were apparent regardless of the presence of baseline common mental disorders.

Act-Belong-Commit indicators are shown to be associated with a reduced risk for problem drinking. This lends further support to the Act-Belong-Commit domains and has wide-ranging implications for preventing substance use disorders in the aging community.

1. Introduction

Substance use disorders contribute to a significant proportion of the global disease burden, with vast negative implications for the health and wellbeing of individuals, families, and society as a whole. In 2010, mental, neurological, and substance use disorders (MNS) together constituted the leading cause of years lived with disability worldwide (Whiteford et al., 2013). Mental and substance use disorders are further estimated to account for 60% of suicide deaths (Patel et al., 2016). Alcohol use disorders (AUDs) were responsible for 6.9% of the total proportion of MNS disability adjusted life years in 2010 (Patel et al.,

2016). Research has demonstrated that high levels of alcohol consumption have a range of negative outcomes for health. For example, it is the cause of 5.8% of all cancer deaths globally (Connor, 2017). Further, recent longitudinal neuro-imaging studies have shown that even moderate alcohol consumption levels are associated with multiple markers of adverse cognitive and structural brain outcomes (Topiwala et al., 2017). More specifically, studies have suggested that late-life AUDs differ in many aspects from those with early onset AUDs, and that a considerable proportion of older adults with AUDs begin to abuse in late life (45+ years) (Wetterling et al., 2003), with some studies suggesting that as many as $\frac{1}{4}$ to $\frac{2}{3}$ of AUD patients in treatment had onset

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after the age of 60 (Atkinson, 1994). Finally, it should be noted that the financial burden of AUDs is considerable. For the year 2010, economic costs attributable to alcohol use and AUDs are estimated to amount to 1.3–3.3% of gross domestic product in a range of high and middle-income countries, with two-thirds of the loss being represented by productivity loss (Patel et al., 2016).

As health systems face various economic restrictions and continuing health care demands due to demographic aging (Rechel et al., 2009), adequate financial resources may not be available to properly address the burden of MNS disorders. This is particularly the case for substance use disorders, which have historically been unrecognized and under-prioritized in the fields of psychiatry and health care policy (Robinson and Adinoff, 2016). More importantly, public mental health strategies designed to prevent AUDs and harmful alcohol use, specifically those pertaining to behavioral interventions, are scarce. Further, it is relevant to identify factors protective against problem drinking in the aging process, as regular alcohol consumption may progress towards harmful alcohol use and AUDs in the context of circumstances such as divorce (Leonard and Rothbard, 1999), retirement (Finlayson et al., 1988; Hurt et al., 1988), bereavement (Nicholson et al., 2017), multi-morbidity and disability (Ryan et al., 2013; Samokhvalov et al., 2010). Thus, there is a pressing need to identify possible and sustainable approaches to prevent MNS disorders, which can be incorporated into population, community, and clinical settings (Anwar McHenry and Donovan, 2013; EC, 2008; Volkow et al., 2016; WHO, 2004, 2005).

A number of relevant theories from the field of behavioral economics have been applied extensively to abnormal behavior, particularly in the area of AUDs and other substance use disorders (Vuchinich and Tucker, 1988; Vuchinich et al., 1987). Importantly, as these theories have been applied to alcohol and substance use and misuse, they have made major contributions to characterizing how the presence of alternative reinforcers affect the consumption of such substances. According to a behavioral economic approach, individuals are less likely to consume a substance if they are confronted with a number of alternative reinforcers, particularly if such reinforcers afford greater long-term advantages. Another relevant theory pertains to that of an “opportunity cost”, which refers to a situation where options are mutually exclusive, i.e., the selection of one option renders the other option unavailable. When applied to alcohol and substance use, the theory stipulates that the consumption of substances requires time and resources, and individuals are less likely to use or misuse alcohol or other substances if their time and resources are focused elsewhere (e.g., sports, hobbies, social interaction, etc.) (Bickel et al., 2014). Several studies, involving mainly adolescents and young adults have demonstrated that positive activity engagement can effectively protect against the development of alcohol and drug misuse (Audrain-McGovern et al., 2013; Leventhal et al., 2015; Murphy et al., 2006).

Act-Belong-Commit is the world’s first comprehensive, population-wide, community-based mental health campaign (Donovan and Anwar McHenry, 2014). Act-Belong-Commit is a practical framework for health professionals and clinicians to promote mental health in the overall population as well as in specific settings. The Act-Belong-Commit campaign targets individuals to engage in mentally healthy activities while also encouraging community organizations to promote and increase participation in such activities. The Act-Belong-Commit framework essentially promotes three behavioral domains thought to contribute to good mental health: Keeping physically, mentally, socially, and spiritually active (Act); developing a sense of belonging through social support networks and participation in group and community activities (Belong); and taking on challenges and committing to activities and hobbies that provide meaning and purpose (Commit).

Although Act-Belong-Commit has gained momentum internationally, more research is needed to explore how the campaign messages might impact not just on mental health but also with respect to the prevention of negative behavioral health outcomes. Given that intervention studies or clinical trials are not yet put in place to assess

causality, observational studies are warranted to assess risk reduction among people with lifestyles that appear to be in line with the Act-Belong-Commit messages. In contrast to extensive research reporting lifestyle and social network determinants of mental and neurological disorders, the bulk of studies investigating preventative measures against substance use disorders and harmful alcohol use do so primarily with a focus on either wider economic markers, such as alcohol pricing and availability, or individual neurobiological or socio-economic risk factors. Further, preventative measures generally include things like social skills building, emotion regulation, or educational approaches regarding the harms of substance use (Pettigrew and Donovan, 2003; Sandler et al., 2014). As a result, there is a clear gap in the literature in terms of behavioral lifestyle factors that could effectively contribute towards greater resilience against the development of AUDs, and how these, by extension, could be addressed in a population setting.

Thus, the aim of the current study was to prospectively assess the association between Act-Belong-Commit indicators and the onset of problem drinking in a population of older adults. To achieve this aim, we conducted a study using data from the first two waves of the Irish Longitudinal Study on Ageing (TILDA). This is a nationally-representative, community-based survey of the Irish older population. As predictors, we used variables for participation and frequency of social/recreational activities and social network integration as proxies for the Act, Belong, and Commit domains (Santini et al., 2017). Previous somewhat similar studies appear to only have been focused on separate isolated predictors (e.g., one type of activity), or other related but distinct outcomes (e.g., binge drinking). Further, most previous studies were not prospective. To our knowledge, this is the first study to prospectively assess associations between social/recreational activities and social network integration with the development of problem drinking in a nationally-representative sample of older adults.

It is essential to conduct such large-scale epidemiological studies in order to inform relevant policy makers regarding the potential effectiveness of the Act-Belong-Commit domains in a nation-wide setting. Based on previous research reporting benefits and protective properties of Act-Belong-Commit in the context of mental and neurological disorders (Donovan et al., 2016; Santini et al., 2017), we hypothesized that each of the Act-Belong-Commit indicators would similarly be associated with a reduced risk for developing problem drinking in our sample. Although substance use disorders are distinct phenomena from mental and neurological disorders, the reasoning behind our hypothesis was that the Act-Belong-Commit domains appear to be beneficial across a range of mental health outcomes, and this could also mean greater resilience against the development of problem drinking.

2. Methods

2.1. Study design and sample

We analyzed data from two consecutive waves of the Irish Longitudinal Study of Ageing (TILDA). Full details of the survey and its sampling procedure have been described elsewhere (Cronin et al., 2013; Kearney et al., 2011; Whelan and Savva, 2013). TILDA is a nationally-representative population-based survey of older adults residing in Ireland. The survey was conducted between October 2009 and February 2011 for Wave 1 (W1), and between April 2012 and January 2013 for Wave 2 (W2). The target sample included all individuals residing in a household who were 50 years of age or older. Nationally-representative samples were derived from clustered random sampling of all households in Ireland. The baseline survey (W1) excluded participants who were institutionalized and those with a doctor’s diagnosis of dementia. Those who were unable to personally provide written informed consent to participate in the survey because of severe cognitive impairment were also excluded from W1.

Data collection was conducted by trained interviewers using Computer Assisted Personal Interviewing (CAPI), and by a self-

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