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# The relationship between hopelessness and risk factors for early mortality in people with a lived experience of a serious mental illness

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## Abstract

The purpose of this study was to explore the relationships between self-reported hopelessness and risk factors for premature mortality in people with serious mental illness (SMI). Data were extracted from the 2014 Health Center Patient Survey ($N = 5,592$). Having a diagnosis of SMI was significantly associated with self-reported hopelessness. Hypertension or high blood pressure, congestive heart failure, and chronic obstructive pulmonary disorder were significantly associated with self-reported hopelessness. Higher levels of hopelessness were found to be significantly associated with increased alcohol consumption. Hopelessness may be an important dimension of health in people with SMI.

### Keywords

Dimensions of health; serious mental illness; mortality; motivation

People with serious mental illness (SMI) die up to 32 years earlier than the general population (De Hert et al., 2011; Druss, Zhao, Von Esenwein, Morrato, & Marcus, 2011).

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The majority of premature mortality is reported to be linked to poor health behaviors and health risk factors such as multiple chronic conditions. As such, intervention studies designed to address mortality in people with schizophrenia target changing poor health behaviors like smoking and alcohol consumption – both of which increase the likelihood of developing chronic health conditions. Despite decades of medical research focused toward improving health behaviors of people with SMI, life expectancy of people with SMI is decreasing (De Hert et al., 2011; Druss et al., 2011). As health is made up of multiple interdependent factors beyond health behaviors, a new approach that takes into account the unique dimension of health related to premature mortality in people with SMI may be the missing link in addressing the early mortality gap.

Hopelessness is defined as negative attitudes toward an individual's future (Beck, Weissman, Lester, & Trexler, 1974). In the general population, high levels of hopelessness impact individuals' ability to identify goals with positive expectations for the future and also commonly result in low motivation and disengagement in goal attainment (Carver & Scheier, 1998). As such, it is not sound reasoning to expect an individual to work toward positive health behavior change if a person has negative attitudes toward their own future (Noordsy et al., 2002). As people with SMI commonly report hopelessness (Bassman, 2000; Bengtsson-Tops & Hansen, 1999; Hays & Buckle, 1992), it may be an essential dimension of health that deters healthy behaviors or health behavioral change to address clinical risk factors related to early mortality in people with SMI.

To our knowledge, the association of hopelessness on early mortality risk factors in people with SMI is not known. As an initial first step, the purpose of this study was to explore the association between self-reported hopelessness, health risk factors (chronic health conditions [i.e., hypertension or high blood pressure, diabetes, congestive heart failure, and chronic obstructive pulmonary disorder] and behavioral risk factors [i.e., smoking status and alcohol consumption]) for early mortality in people with SMI.

## Methods

### Data source

This data were extracted from the 2014 Health Center Patient Survey (HCPS) sponsored by the Health Resources and Services Administration (HRSA). Survey data were collected from medically underserved populations who use health centers funded by the Bureau of Primary Health Care (BPHC), the Community Health Center Program, the Migrant Health Center Program, the Health Care for the Homeless Program, and the Public Housing Primary Care Program. The survey asked patients about health-related outcomes, including risk factors for early mortality (including health conditions and behavioral risk factors), access to health care, and satisfaction with health care. Data were collected between October 2014 and April 2015 via computer-assisted personal interview. A detailed data file user's manual could be found at HRSA website (https://bphc.hrsa.gov/datareporting/research/hcpsurvey/2014usermanual.pdf). This project was considered as exempt by the Intuitional Review Board at [blinded for review].

## Measures

**Sociodemographic variables—**Respondents' sociodemographic variables included age, gender, race, marital status, education, and federal poverty status (FPL). Each sociodemographic variable was dummy-coded: age (1 = ≥45 age); gender (1 = female); ethnicity (1 = Hispanic); FPL (1 = ≤100% FPL); and education (1 = less than high school degree).

**Hopelessness—**Hopelessness was measured with a single-item from Kessler-6 Distress scale (Kessler et al., 2003). The item asked respondents how often in the past 30 days they had felt hopeless. This approach is consistent with positive psychology/social sciences literature that has found one-item measures in this field of study to be reliable and valid (Cheung & Lucas, 2014). The item was rated on a 5-point scale ranging from 1 (none of the time) to 5 (all of the time), whereby higher scores represent higher levels of hopelessness.

**Serious mental illness—**Serious mental illness was measured by two items asking respondents whether they were ever told by a doctor or other health professional that they have schizophrenia or bipolar disorder (1 = yes). SMI is reported as an aggregate diagnosis of schizophrenia or bipolar disorder.

**Risk factors for early mortality—**Health conditions were measured as reporting being told by a doctor or other health professional of a medical condition of hypertension or high blood pressure, diabetes, congestive heart failure, and chronic obstructive pulmonary disorder (COPD). Each health condition variable was dummy-coded: hypertension or high blood pressure (1 = yes), diabetes (1 = yes), congestive heart failure (1 = yes), and COPD (1 = yes).

Behavioral risk factors were measured by a single-item for smoking (i.e., "Do you now smoke cigarettes every day, some days or not at all?") and alcohol consumption (i.e., "In the past 3 months, how often have you used alcoholic beverages?") construct. The smoking cigarettes question was rated on a 3-point scale ranging from 1 (not at all) to 3 (everyday). The alcohol consumption item was rated on a 5-point scale ranging from 0 (never) to 4 (daily or almost daily). Higher scores on smoking cigarettes and alcohol consumption items reflect a higher level of smoking cigarettes and alcohol consumption.

## Data analysis

Descriptive statistics were conducted to summarize respondents' sociodemographic and health-related characteristics. We examined correlation coefficients to examine the association between variables of interest. We estimated pairwise correlations between each of the variables. Next, we conducted a series of chi-squared test and independent-samples t-test to compare respondents' with and without SMI. Next, we conducted a hierarchical regression analysis to test whether the presence of SMI is associated with respondents' level of hopelessness after controlling sociodemographic covariates and health conditions. Finally, we conducted a series of hierarchical regression analysis to examine whether level of hopelessness is associated with behavioral risk factors (i.e., smoking cigarettes and alcohol consumption) in respondents' with SMI after controlling sociodemographic and health-

related characteristics. We did not weight variables and conducted all analysis with SPSS 25.0 (IBM Corp, 2017).

## Results

For the current study, we excluded respondents who are less than the age of 18 and those with nonresponses to survey questions, resulting in a total sample size of 5,592 out of the original survey sample of 7,002 patients. A total of 753 (13.5%) individuals reported a diagnosis of schizophrenia, bipolar disorder, or both. Compared to individuals without SMI, more individuals with SMI were (a) male (42.8% vs. 40.9%), (b) non-Hispanic white (38.1% vs. 22.0%), (c) not married (87.5% vs. 68.8%), and (d) in less than 100% FPL (78.1% vs. 62.8%). Results revealed that individuals with SMI were found to have more hypertension or high blood pressure (53.8% vs. 46.2%), congestive heart failure (7.7% vs. 4.4%), and COPD (19.1% vs. 6.9%) compared to those without SMI. Lastly, individuals with SMI were found to smoke more cigarettes ($M = 2.03$ vs. $M = 1.45$) and have higher levels of hopelessness scores ($M = 2.42$ vs. $M = 1.09$) compared to those without SMI (See Table 1).

Sociodemographic and health condition covariates were modestly inter-correlated, with the greatest small but significant correlations between hypertension and age, $r = .35^*$, $p \leq 0.05$, race and education, $r = .27$, $p \leq 0.05$, and hypertension and diabetes, $r = .26^*$, $p \leq 0.05$ (Table 2).

After controlling for sociodemographic covariates and health conditions, the presence of SMI remained significantly associated with higher levels of hopelessness ($\beta = .19$, 95% CI [.55, .72], $p < .05$). Results indicated that marital status (married; $\beta = -.08$, 95% CI [−.27, −.14], $p < .05$), FPL (≤100% FPL, $\beta = .10$, 95% CI [18, .30], $p < .05$), education (less than high school; $\beta = .03$, 95% CI [.02, .14], $p < .05$), hypertension or high blood pressure ($\beta = .08$, 95% CI [.12, .25], $p < .05$), congestive heart failure ($\beta = .03$, 95% CI [.02, .30], $p < .05$), and COPD ($\beta = .05$, 95% CI [.09, .31], $p < .05$) were also significantly associated with hopelessness (Table 3).

After controlling for sociodemographic covariates in the first step of the two hierarchical regression analyses in Table 4, we examined whether higher levels of hopelessness were independently associated with behavioral risk factors. In the first (outcome = smoking cigarettes) hierarchical regression analysis, hopelessness was not associated with smoking cigarettes ($\beta = .02$, 95% CI [−.04, .06], $p = n.s$). In the second hierarchical regression analysis (outcome = alcohol consumption), results revealed that lower levels of hopelessness ($\beta = .10$, 95% CI [.03, .17], $p < .05$) were found to be significantly associated with decreased alcohol consumption.

## Discussion

The purpose of this study was to explore the relationships between self-reported hopelessness and risk factors for premature mortality in people with serious mental illness. People with SMI experience higher levels of hopelessness compared to the general HRSA health center population without SMI. Higher levels of hopelessness were associated with some unhealthy behaviors (i.e., alcohol consumption) but not all (i.e., smoking cigarettes).

Addressing hopelessness may be an important intervention target for alcohol misuse. People with SMI who experience higher levels of hopelessness are significantly more likely to report a diagnosis of hypertension or high blood pressure, congestive heart failure, and COPD.

### Self-reported hopelessness in people with SMI compared to the general population

People with SMI experience higher levels of hopelessness than the general population. This result is consistent with previous findings that indicate that people with SMI commonly experience hopelessness at higher rates than the general population (Bassman, 2000; Bengtsson-Tops & Hansen, 1999; Brekke & Long, 2000; Frese, 1993; Lysaker & Lysaker, 2001; Rooke & Birchwood, 1998). Similar to the general population, these high levels of hopelessness (i.e., negative attitudes toward their own future) among people with SMI may impact their ability to identify and work toward future health behavior change goals. Feelings of hopelessness are highly personal and contextual and may be related to not only clinical and psychological factors but also an array of interrelated dimensions of health – stigma, joblessness, homelessness, environmental vulnerability, lack of education, and poverty (Draine, Salzer, Culhane, & Hadley, 2002). As such, existing interventions that aim to address early mortality in people with SMI such as self-management interventions (Whiteman, Naslund, Bruce, & Bartels, 2016) and health promotion interventions (Naslund & Aschbrenner, 2019) may consider the inclusion of intervention targets that also address dimensions of health related to feelings of hopelessness. For example, self-management and health promotion interventions could consider addressing stigma, joblessness, homelessness, environmental vulnerability, lack of education, and poverty – not solely health behaviors such as diet and exercise.

### Hopelessness is associated with higher alcohol consumption

Higher levels of hopelessness in people with SMI were associated with increased alcohol consumption. High rates of alcohol use and comorbid alcohol use disorder are common in adults with SMI, with prevalence rates of 24.3% and 42%, respectively (Hunt, Large, Cleary, Lai, & Saunders, 2018; Hunt, Malhi, Cleary, Lai, & Sitharthan, 2016). Addressing hopelessness in people may be a non-pharmacological treatment target to reduce alcohol consumption in people with SMI. Potentially, peer support recovery coaches may be the ideal support person to address hopelessness in people with a lived experience of SMI and a comorbid alcohol use disorder. Peer support recovery coaches are people who are trained to use his or her own lived experience of recovery from a mental health condition and/or substance use or abuse disorder to provide peer support services (Solomon, 2004). Unlike other traditional mental health service providers, such as psychologists or social workers, peer support recovery coaches may naturally address feelings of hopelessness in service users through their supportive interactions and self-disclosure (Davidson, Chinman, Sells, & Rowe, 2006; Fortuna, Brooks, Umucu, Walker, & Chow, 2019), which support people with a lived experience of SMI to feel validated. Studies of peer support programs have shown increases in hope (Chinman et al., 2014). Understanding peer support recovery coaches impact on hopelessness in people with SMI and alcohol use disorders may be an initial approach to examining non-pharmacological treatment options to addressing unhealthy behaviors.

### Hopelessness is not associated with smoking cigarettes

Higher levels of hopelessness in people with SMI had a negligible association with smoking. In SMI populations, smoking may be a normalized habit and may not be impacted by levels of hopelessness. Normalization of smoking may be that people with SMI smoke to feel better, cope with symptoms, or socialize with others (Adler, Hoffer, Wiser, & Freedman, 1993; Mineur & Picciotto, 2010). As coping and symptom reduction is beneficial, paradoxically, smoking cigarettes may be considered a socially acceptable practice (or treatment option for people with SMI) – despite the large number of people with SMI that want to quit smoking (Annamalai, Singh, & O'Malley, 2015). As such, addressing hopelessness to promote health behavior change may have a negligible impact on smoking behaviors.

### Hopelessness is associated with physical health conditions

People with SMI who experience higher levels of hopelessness show a significant association with hypertension or high blood pressure, congestive heart failure, and COPD. In the general population, higher levels of hopelessness – independent of depression – is a risk factor for chronic diseases, such as cardiovascular disease (Everson et al., 1996; Everson, Kaplan, Goldberg, & Salonen, 2000; Tossani, Ricci Garotti, & Cosci, 2013), cancer (Everson et al., 1996), diabetes (Pompili et al., 2009), and premature mortality (Everson et al., 1996; Zhu et al., 2017). Hopelessness and mood are interconnected (Duggal, Sacks-Zimmerman, & Liberta, 2016), and mood states are associated with biological markers, such as immune system response, cortisol profiles, cardiovascular function (Dockray & Steptoe, 2010), and somatic symptoms (Martínez-Correa, Reyes Del Paso, García-León, & González-Jareño, 2006). Considering the association that level of hopelessness has on the development of chronic disease in both the general population and in people with SMI, future research should examine the causal relationship between hopelessness and early mortality in people with SMI.

### Limitations

This study is not without limitations. First, both physical and mental health conditions were self-report. We were not able to verify these diagnoses with objective instrumentation – thus may be subject to bias. However, these rates are consistent with national estimates of comorbid mental health and physical health conditions (De Hert et al., 2011). Second, data included in this cross-sectional research design suggest an association not causation. However, understanding the predictive ability of hopelessness on clinical outcomes is an important area of research. Due to limitations in the current dataset, we were unable to examine causation. Third, due to the data collection procedures and publically available database, we were not able to explore electronic cigarette use or any differences between different psychiatric diagnoses (i.e., bipolar disorder and schizophrenia); rather, the dataset only allowed us to report cigarette use and report SMI as an aggregate diagnosis. Additionally, given that we confined our sample to a subpopulation with valid responses to certain questions, we did not apply complex survey weights due to relatively high nonresponse rates for certain questions. Finally, hopelessness is a symptom of depression– thus, it can be difficult to separate hopelessness from depression. Potentially, hopelessness as

a manifestation of depression affects health and health behaviors while other symptoms of depression are unrelated to health. Examination of depression symptoms and each symptom's association and impact on health and health behaviors could address this question. In this study, we were not able to control for depression or examine depression symptoms and each symptom association and impact.

## Conclusion

Despite these limitations, to our knowledge, this is the first study to examine the association between hopelessness and risk factors for early mortality in people with SMI. Hopelessness may be an important, yet under-researched dimension of health in people with SMI. Findings from this study indicate that hopelessness is similar to other dimensions of health such as stigma, joblessness, homelessness, environmental vulnerability, lack of education, and poverty – in that feelings of hopelessness are related to health behaviors that impact premature mortality in people with SMI.

Social work practice and research should consider the following to recommendations: (1) inclusion of programing that augments traditional practice with non-traditional mental health care from peer support specialists – known to increase hope in people with mental health conditions (Chinman et al., 2014); and (2) inclusion of intervention targets that allow for a comprehensive examination of (a) the influence of contextual factors associated with development of hopelessness, (b) the cumulative effects of risk factors on the development of hopelessness; (c) potential protective factors to impact feelings of hopelessness; and (d) the impact of such on risks on early mortality in people with SMI.

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**Table 1.**

Descriptive statistics of sociodemographic and health-related characteristics.

| Sociodemographic Variables | SMI (*N* = 753) | No SMI (*N* = 4839) | *p* value |
|---|---|---|---|
| Age | | | .50 |
| 18–44 | 318 (42.2%) | 1980 (40.9%) | |
| 45 and older | 435 (57.8%) | 2859 (59.1%) | |
| Gender | | | <.001 |
| Male | 322 (42.8%) | 1750 (36.2%) | |
| Female | 431 (57.2%) | 3089 (63.8%) | |
| Race | | | <.001 |
| Non-Hispanic White | 287 (38.1%) | 1063 (22.0%) | |
| Non-Hispanic Black | 217 (28.8%) | 1057 (21.8%) | |
| Non-Hispanic Other | 89 (11.8%) | 756 (15.6%) | |
| Hispanic | 150 (19.9%) | 1960 (40.5%) | |
| Marital status | | | <.001 |
| Married | 94 (12.5%) | 1509 (31.2%) | |
| Other | 659 (87.5%) | 3330 (68.8%) | |
| Education | | | .09 |
| Less than high school | 302 (40.1%) | 2142 (44.3%) | |
| High school/GED and above | 451 (30.7%) | 2697 (28.8%) | |
| Federal poverty status | | | <.001 |
| ≤100% FPL | 587 (78.1%) | 3037 (62.8%) | |
| More than 100% FPL | 165 (21.9%) | 1802 (37.2%) | |
| Health conditions | | | |
| Hypertension or high blood pressure | 405 (53.8%) | 2236 (46.2%) | <.001 |
| Diabetes | 158 (21.0%) | 1120 (23.2%) | .19 |
| Congestive heart failure | 58 (7.7%) | 212 (4.4%) | <.001 |
| COPD | 144 (19.1%) | 336 (6.9%) | <.001 |
| Behavioral Risk Factors | | | |
| Smoking, *Mean (SD)* | 2.03 (0.91) | 1.45 (0.78) | <.001 |
| Alcohol consumption, *Mean (SD)* | 1.06 (1.31) | 1.09 (1.41) | .54 |
| Hopelessness, *Mean (SD)* | 2.42 (1.31) | 1.67 (1.09) | <.001 |

COPD = chronic obstructive pulmonary disorder.

**Table 2.**

Correlation coefficients among sociodemographic, health condition, and SMI variables.

| Variable | Age | Gender | Race | Martial Status | FPL | Education | Hypertension | Diabetes | Congestve Heart Failure | COPD | SMI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | 1 | | | | | | | | | | |
| Gender | −.13* | 1 | | | | | | | | | |
| Race | −.15* | .06* | 1 | | | | | | | | |
| Marital Status | .03* | .07* | .19* | 1 | | | | | | | |
| FPL | .02 | −.01 | .02 | −.13* | 1 | | | | | | |
| Education | .05* | .01 | .27* | .08* | .16* | 1 | | | | | |
| Hypertension | .35* | −.09* | −.15* | −.05* | .02 | .01 | 1 | | | | |
| Diabetes | .21* | −.01 | .05* | .05* | .01 | .08* | .26* | 1 | | | |
| Congestive Heart Failure | .13* | −.07* | −.05* | −.02 | .02 | .02 | .18* | .12* | 1 | | |
| COPD | .16* | −.03* | −.14* | −.07* | .07* | .01 | .13* | .04* | .19* | 1 | |
| SMI | −.01 | −.05* | −.14* | −.14* | .11* | −.03* | .05* | −.02 | .05* | .15* | 1 |

Variables are categorized as followed: age as ≥45 age; gender as female; race as Hispanic; marital status as married; FPL = federal poverty level; COPD = chronic obstructive pulmonary disorder; SMI = serious mental illness; FPL as ≤100% FPL; education as less than high school.

* $p < .05$.

**Table 3.**

Association between serious mental illness and hopelessness.

| | | | At entry into model | Final model |
|---|---|---|---|---|
| | $R^2$ | $\Delta R^2$ | $\beta$ (95% LL and UL CI) | $\beta$ (95% LL and UL CI) |
| Variables | | | | |
| Sociodemographics (Step 1) | .04* | .04* | | |
| ≥45 age | | | .05* [.05,.17] | .02 [−.02,.10] |
| Female | | | −.01 [−.08,.04] | .01 [−.06,.06] |
| Hispanic | | | −.03* [−.13, −.01] | .01 [−.04,.09] |
| Married | | | −.11* [−.34, −.20] | −.08* [−.27, −.14] |
| ≤100% FPL | | | .12* [−.24, −.36] | .10* [.18,.30] |
| Less than high school | | | .04* [.02,.15] | .03* [.02,.14] |
| Health Conditions (Step 2) | .05* | .01* | | |
| Hypertension or high blood pressure[a] | | | .09* [.13,.26] | .08* [.12,.25] |
| Diabetes[a] | | | −.01 [−.11,.04] | −.01 [−.00,.05] |
| Congestive heart failure[a] | | | .03* [.03,.32] | .03* [−02,.30] |
| COPD[a] | | | .07* [.18,.41] | .05* [.10,.31] |
| Psychiatric Diagnosis (Step 3) | .08* | .03* | | |
| SMI[a] | | | .19* [.55,.72] | .19* [.55,.72] |

[a]Hypertension or high blood pressure (1 = yes), diabetes (1 = yes), congestive heart failure (1 = yes), COPD (1 = yes), SMI (1 = yes). COPD = chronic obstructive pulmonary disorder.

*$p$ <.05.

**Table 4.**

Association between hopelessness and behavioral risk factor outcomes in individuals with SMI.

| | | | | At entry into model | Final model |
|---|---|---|---|---|---|
| | **Variables** | $R^2$ | $\Delta R^2$ | **β (95% LL and UL CI)** | **β (95% LL and UL CI)** |
| Smoking Cigarettes | Sociodemographics (Step 1) | .04* | .04* | | |
| | ≥45 age | | | −.05 (−.22,.04) | −.05 (−.22,.04) |
| | Female | | | −.10* (−.31, −.05) | −.10* (−.31, −.05) |
| | Hispanic | | | −.14* (−.50, −.18) | −.14* (−.50, −.18) |
| | Married | | | −.03 (−.27,.12) | −.03 (−.27,.12) |
| | ≤100% FPL | | | .06 (−.03,.28) | .06 (−.03,.28) |
| | Less than high school | | | .09* (.03,.29) | .09* (.03,.29) |
| | Hopelessness (Step 2) | .04 | 0.00 | | |
| | Hopelessness | | | .02 (−.04,.06) | .02 (−.04,.06) |
| Alcohol Consumption | Sociodemographics (Step 1) | .02 | .02 | | |
| | ≥45 age | | | −.06 (−.33,.03) | −.06 (−.35,.02) |
| | Female | | | −.11* (−.47, −.10) | −.11* (−.47, −.11) |
| | Hispanic | | | −.02 (−.29,.17) | −.02 (−.29,.17) |
| | Married | | | −.08* (−.57, −.02) | −.07 (−.56,.01) |
| | ≤100% FPL | | | −.04 (−.33,.11) | −.04 (−.34,.09) |
| | Less than high school | | | −.01 (−.21,.15) | −.01 (−.23,.13) |
| | Hopelessness (Step 2) | .03* | .01* | | |
| | Hopelessness | | | .10* (.03,.17) | .10* (.03,.17) |

* $p < .05$;

FPL = Federal poverty level.

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