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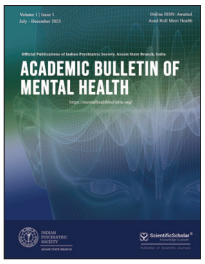

Review Article

Suicide Prevention in Homeless Individuals: Review of Current Evidence and Future Directions

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Received: 16 August 2024

Accepted: 06 September 2024

Published: 21 September 2024

DOI
10.25259/ABMH_21_2024

Quick Response Code

ABSTRACT

Background and Aims: Suicide among people experiencing homelessness is a rising concern, as due to the current economic and geopolitical reasons, people experiencing homelessness are on the rise. Studies have reported a higher rate of suicide among persons experiencing homelessness than the general population. The current available data and interventions to address this issue are limited. This research is aimed to review interventions available, specifically to address suicide and suicidal behavior among people experiencing homelessness.

Material and Methods: Electronic literature search was conducted using Google Scholar, PubMed, Science Direct, EMBASE, and Scopus up to July 31, 2024.

Result: A total search of 4035 studies was identified via literature, among which seven studies were included for the review.

Discussion: The factors causing higher suicide in the homeless population are multifaceted. The few studies available in this area show the efficacy of cognitive therapy for suicide prevention (CTSP), dialectial behavioral therapy (DBT), and electroconvulsive therapy (ECT) along with the efficacy of housing and emotional regulation in suicide prevention.

Conclusion: Limited data is available in this area. This marginalized group needs a holistic approach in suicide prevention, addressing both psychiatric as well as social aspects.

Keywords: Person experiencing homelessness, Psychiatric illness, Suicidal ideation, Suicidal behavior, Suicide prevention

INTRODUCTION

The Homeless Assistance Act by Stewart B. McKinney enacted in July 1987 defined homelessness as "an individual who lacks a fixed, regular, and adequate nighttime residence or, an individual who has a primary nighttime residence is a supervised or publicly operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelters, and transitional housing for the mentally ill; or, an institution that provides a temporary residence for individuals intended to be institutionalized; or a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings."[1] According to the global survey conducted in 2015 by Habitat for Humanity, around 1600 million people had inadequate shelter and almost 150 million people were homeless across the world.[2] Post-COVID-19, the numbers are expected to rise further due to job losses and economic volatility. As per the 2011 Census of India, houseless

household is "households who do not live in buildings or census houses but live in the open on roadside, pavement, in hume pipes, under flyovers and staircases, or in the open in places of worship, mandaps, railway platforms, etc."[3]

According to an epidemiologic study, over 400,000 people are homeless in the European Union on any given night, 552,830 people in North America in 2018, and approximately 235,000 individuals were homeless in Canada during 2016.[4–6] Similarly, the Indian Census report of 2011 revealed that India has more than 1.7 million homeless people, and a total of 938,384 are located in urban areas.[7]

Psychiatric illness and homelessness are both intertwined issues. Empirical research has shown that around one-third to two-thirds of homeless individuals suffer from mental illness.[8–10] For example, a meta-analysis of 29 studies by Fazel *et al*. revealed that the pooled prevalence of psychotic illness, personality disorder, and drug and alcohol dependence among homeless individuals in Western Europe and North America is 12.7%, 23.1%, 24.4%, and 37.9%, respectively.[9] Similarly, Ayano *et al*. found a prevalence of 27.38% in homeless people for posttraumatic stress disorder (PTSD) after conducting a meta-analysis of 19 individual studies.[10]

Suicide in homeless versus general population: A significant pooled lifetime prevalence of suicidal attempts was 25.28–38.20% by a meta-analysis among homeless people of North America.[11] The study reported that the magnitude of suicidal behavior to be 5.3–10 times higher among homeless people when compared to the general population.[12] In addition, the notably higher rates of substance use disorder were found in homeless people than in the general population.[13] Suicidal behavior and suicide among homeless people also hugely get influenced by a number of other factors such as substance use disorder, military veteran status, female gender, *lesbian, gay, bisexual, transgender, queer or questioning* (LGBTQ) identity, adolescent age, history of childhood maltreatment, length of homelessness status, and access to a firearm.[13–23] Apart from the preexisting vulnerability, the post-COVID-19 period has further increased the rate of suicide in people experiencing homelessness, as is the same for the general population.[24]

Suicide in subgroups of people experiencing homelessness

Homeless veteran: The Department of Veterans Affairs [VA] reported in 2020 that the suicide rate in veterans was 1.5 times higher than the general population, a rise which is of significant public health concern. A survey reported a five times higher rate of suicide attempts (6.9%) in homeless veterans than other veterans (1.2%) compared with in the last two years.[25]

Homeless child and adolescent: Studies have revealed that lifetime suicide attempt rates among homeless young adults (HYAs) are between 20% and 40% compared to 11.1% in the general population of youth and can be a leading cause of death among HYA.[26–28]

Homeless women: Compared to men, homeless women are more susceptible for PTSD, depression, and suicide risk. Additionally, there is a higher risk for verbal, physical, and/or sexual assault in women, which can be an added for suicidal behaviour.[13] Homeless women suffering from psychiatric illnesses such as schizophrenia and bipolar disorder are extremely susceptible and/or more frequently exposed to violence.[13]

Suicide in homeless LGBTQ: Higher rate of homelessness is seen among lesbian, gay, bisexual, transgender, queer, and youth with other sexual identities (LGBTQ). Approximately 20–40% of homeless people identify as LGBTQ, along with a greater rate of suicidality compared to heterosexual and cisgender youth.[29,30]

Suicide in homeless versus duration of homelessness: Suicidal thoughts and acts have been linked to the duration of homelessness. Research indicates a significant correlation between the duration of homelessness and suicidal behavior. This suggests that homelessness and suicidality strongly coexist and may even have a causal relation.[31–34]

Suicide in homeless Indian data: A retrospective data of autopsy reports of unclaimed homeless bodies reported the cause of death to be suicide in 33.51% of cases. For men, poisoning accounted as the most common mode of suicide (48.81%), whereas in females, the most common methods of suicide were poisoning (57.08%), hanging (29.88%) and drowning (8.81%).[35]

Suicide prevention:

Suicide prevention is a public health priority. Psychological measures such as cognitive behavior therapy (CBT), dialectial behavioral therapy (DBT), problem-solving techniques, and more are shown to be beneficial for suicidal behavior prevention in the general population. Similarly, looking at the magnitude of the issue, a prevention strategy of suicide among homeless people is also the need of the hour. In spite of the well-established mental health burden and increased risk of suicide among homeless people, there has not been much guidance regarding the necessary next steps to prevent suicide in this group has been limited.

This review aims to shed light on this topic to understand the effectiveness of available measures to prevent suicide in homeless people.

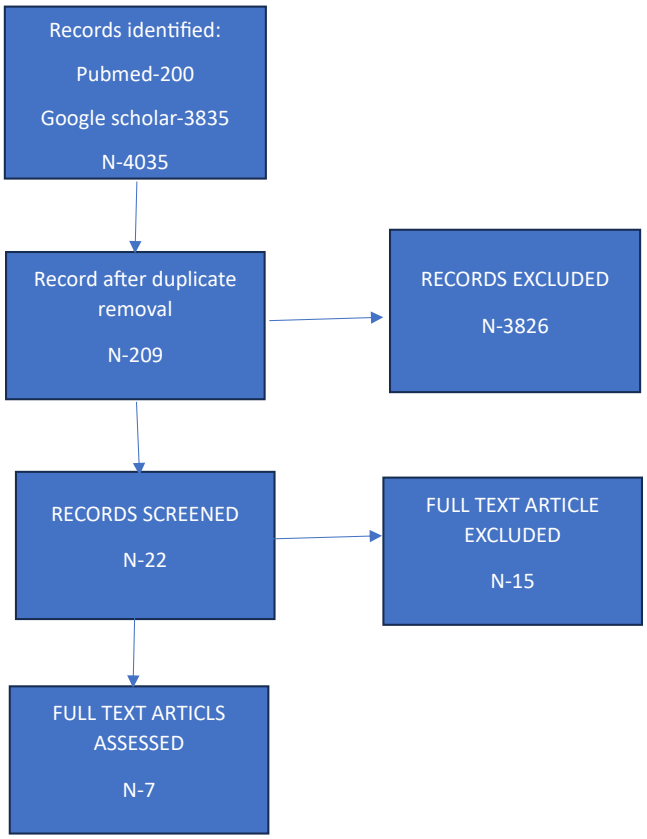

Figure 1: PRISMA flow diagram for the evidence of prevention of suicide in homeless individual

Methodology: Electronic searches for this review was carried out using Google Scholar, PubMed, Scopus, EMBASE, and Science Direct using keywords like "homeless individual/ suicidal behavior," "suicidal ideation/suicide attempt," "social support," "risk factors," "prevention of suicide," "CBT/DBT," and "early diagnosis." On the defined topic, available original article, recent reviews, systematic review, and meta-analysis were considered. Initial search yielded 4035 studies. The available full-text articles were retrieved and reviewed. The studies where treatment methods were directly assessed as suicide prevention methods were included for the review. All the articles were reviewed and considered by both the authors. After reviewing, seven articles and papers/articles written in the English language were included [Figure 1].

DISCUSSION

Studies have consistently highlighted the vulnerability of homelessness population, who are impacted by different physical, mental, social, and political factors. The relationship between psychiatric illness and homelessness is very complex; homelessness act as a predisposing or as a perpetuating factor for psychiatric illness, and also a higher rate of psychiatric illness is already well-documented on the homeless population.[8–10] Apart from other psychiatric illnesses, the prevalence of suicide is also on the higher side in comparison to the general population.[11,12] The factors causing higher suicide in the homeless population is multifaceted. Suicide can be a presentation of ongoing psychiatric illness such as depression, substance abuse, personality, and PTSD, or it can be a manifestation of psychological reaction to social factors such as stress associated with homelessness, sexual abuse, domestic violence, poor familial cohesion, lack of support, prolonged status of homelessness, being in a new country as refugee, and more.[13,26,27,29,31,36] Also, lack of awareness, difficult service accessibility, and poverty can contribute to the prevalence of suicide.

In this review, studies that had provided intervention specific for suicide prevention were included [Table 1]. During the literature search, it was noted that there is a paucity of data in preventive measures in suicide where two methods were compared. The majority of studies were conducted in developed countries among homeless veterans or mainly among adolescents and young adults. For the prevention of suicide, early and accurate diagnosis is crucial. In a research done by Katz C *et al.*,[37] Canada had reported higher predictive values of mini neuropsychiatric interview (MINI) subscale for future suicide attempt in the homeless population, suggesting it's potential use as a screening tool for suicide prevention. After diagnosis, when comparing different treatment measures, studies showed better efficacy of cognitive therapy for suicide prevention (CTSP) in suicide prevention than treatment as usual (TAU).[37,38] However, a study comparing DBT with TAU in homeless patients diagnosed with suicidal behavior had shown no better efficacy of DBT than TAU.[39] Though this study reported higher service utilization by a group of people who were in the DBT treatment arm, it can act as a secondary measure for suicide prevention.[40] Somatic treatment such as electroconvulsive therapy (ECT) is widely used for the management of suicide in the general population. Similarly, a study by Tsai *et al.*[41] reported a decrease in later emergency service utilization by patients treated with ECT for suicidal behavior during the one year follow-up period post-ECT treatment. However, the reason for this is still unexplainable, it can be postulated that maybe due to the neuromodulatory effect of ECT this finding was seen. But the treatment with ECT cannot be used regularly due to issues of accessibility, clinical indications, and patient preference; also, it can't be considered as a preventive measure to use in every patient. Study addressing the social factors of the homeless population via providing permanent shelter first or housing first (HF) reported that the approach of HF did not result in any significant difference in suicide prevention than TAU.[42]

Suicide prevention has been strategized on different levels: prevention programs with early detection, treatment of ongoing psychiatric illness, awareness program, addressing

Table 1: Studies included for the review.

Author Year of Study	Country	Source of Sample	Age Range	Interventions	Sample Size	Duration Assessments	Result
1. Slesnick N *et al.* 2020[38]	USA	Local drop-in center	18–24	CTSP + TAU versus TAU alone	150	Nine months	1. At-risk suicidal youth can be identified and engaged outside of hospital emergency rooms, such as drop-in centers. 2. Intervention added to TAU can strengthen reductions in suicidal ideation.
2. Aquin JP, 2017[42]	Canada	Community agencies	Legal age of majority	The intervention group was HF while the control was TAU	2221	Twenty-four months	1. Two years of follow-up, HF was not associated with reductions in suicidal ideation or attempts compared to TAU. 2. Both intervention and control groups experienced similar significant drops in suicidal ideation over the course of the two-year study. 3. The baseline presence of mood disorder, PTSD, panic disorder, psychotic disorder, and substance use disorder was associated with later suicidal behavior.
3. Katz C, 2019[37]	Canada	Candidates enrolled in home/Chez Soi housing first trial	Mean age—40.89	Baseline suicide risk assessment by MINI suicidality subscale	2221	Two years	1. High predictive validity of the MINI suicidality subscale for future SAs among homeless individuals
4. Zhang J, 2021[52]	USA	Drop-in center for homeless	Aged 18–24 years	Screened with suicide ideation-worst point (SSI-W) CTSP + TAU versus TAU alone	150	Assessment at baseline, three, six, and nine months	1. High levels of social problem-solving at three months post-baseline were associated with low levels of perceived burdensomeness at six months, which was subsequently associated with low levels of suicidal ideation at nine months in the CTSP condition. 2. The TAU condition perceived as burdensomeness at six months was not significantly associated with suicidal ideation at nine months.
5. Tsai J, 2021[41]	USA	Veterans affairs (VA) healthcare system	Age more than 18 years	ECT-TAU versus TAU alone	ECT: 1,524 Control: 3,025	2001–2017 Assessment: baseline, 30 days, 60 days, 1 year	1. Homeless veterans who received ECT were significantly less likely to have used any ED services in one year follow-up after their first ECT session compared to homeless veterans who did not.
6. Goodman M, 2016[39]	USA	Veterans' medical center	Age 18 or over	DBT versus TAU	Ninety-one	January 2010 to December 2014 followed for six months	1. Both DBT and TAU resulted in improvements in suicidal ideation, depression, and anxiety during the course of the six-month treatment trial that did not differ between treatment arms. 2. DBT subjects utilized significantly more individual mental health services than TAU subjects
7. Wu Q, 2020[49]	USA	Drop-in center for homeless youth	Age 18–24 years	CTSP + TAU or TAU alone	150	Assessment done in baseline, 3, 6, 9 months	1. CTSP was associated with lower suicidal ideation and lower thwarted belongingness only among those with high family network satisfaction.

DBT: Dialectial behavioral therapy, CTSP: Cognitive therapy for suicide prevention, HF: Housing first, ECT: Electroconvulsive therapy, TAU: Treatment as usual, PTSD: Posttraumatic stress disorder, ED: Emergency Department, MINI: Mini neuropsychiatric interview.

of social measures, awareness of suicidal behavior, service availability, and lastly training of service providers. For better early diagnosis, group-specific tools are required to be validated and the developed or adaptation of existing tools is required. Currently, data for such tools are scarce. Studies have often reported on the higher rate of psychiatric illness[43,44] and the current preventive measures in homeless people.[43] However, the problem is the fact that the bulk of homeless people suffering from psychiatric illness often go undiagnosed and untreated, maybe because of the difficulty in accessing healthcare services for this population due to health disparities, poverty, and so on.[45]

Apart from that, other studies which indirectly tried to evaluate the role of a generalized suicide screening program of veterans while utilizing different services available for veterans, reported that universal suicide screening by any service provider is equally effective as those done by medical care service providers that can help in early detection.[46] Screening in different service areas helps in covering a maximum number of people in need as the dropout rates of veterans from medical care are on the higher side.[46,47] Harm reduction measures such as reduction of accessibility of lethal means are a practical step in prevention measures.[48] Enhancing social support systems, family relation strengthening, intervention to improve or expression of suicidal thoughts to friends on suicidal behavior and healthy emotional regulation of HYAs play as a protective factor in the recovery from psychiatric illness as well as in suicide.[49–51] Social problem-solving, found to be a potent protective factor for reducing suicidal behavior, entails cognitive, emotional, and behavioral coping strategies in response to stressful situations.[52] Zhang *et al.* had provided data demonstrating the protective effects of CTSP via enhancing the protective effects of social problem-solving on suicidal ideation by mediating effects of perceived burdensomeness.[52] These measures need to be studied with TAU because they can also be used to curb suicide among homeless people. So, the early detection and identification need to be decentralized and different service providers need to be trained in this.

Training is another facet of prevention. Training and awareness programs of service providers with suicide prevention measures can lead to effective screening of homeless people with early diagnosis and referral to specific service providers of any person in need.[46] The role of social workers in this field has been repetitively emphasized by studies.[53] Similarly, awareness of homeless people for different service availability and of the need to seek treatment is also a very crucial step in prevention.

So, the data give evidence of the efficacy of a holistic approach toward the person experiencing homelessness in suicide prevention. The prevention program needs a combination of both pharmacological and nonpharmacological means if needed. Providing residence, a social support system, employment, and easy service delivery are crucial. It is important to note the lack of good-quality research in the form of long-term, double-blind randomized trials in this area, revealing a huge gap between the need and interventions available. The generalized model of prevention may not be a fullproof in this vulnerable group. For the unique nature of these groups, their specific problems need to be handled while providing specific interventions. Apart from that, culturally sensitive measures—subgroup-specific management plans—for prevention need to be developed. Looking at the difficulty in screening, maintaining persons in the treatment loop, and follow-up of homeless population, then it is necessary to approach in a holistic manner.

Research from developing or low-income countries is the need of the hour to understand the magnitude of the problem and specific social determinants in this context. Here, where the availability of healthcare is limited in general, helping the marginalized group of the society is a great challenge. Therefore, a well-curated plan is necessary for a better inclusive society where health is everyone's fundamental right.

CONCLUSION

This review found a marked paucity of suicide prevention programs in the homeless population. Among the groups, the majority of studies were conducted among young adults and veterans in developed countries. These studies have reported the role of ECT, CBT, and HF in suicide prevention in people experiencing homelessness. Along with the expression of suicidal thoughts, better motional regulation to be productive in prevention. As the majority of the studies were done in developed countries, data from developing and low-income countries is greatly scarce. In developing countries, ongoing poverty, rapid urbanization causes displacement of people, or migration to metros in search of jobs causes an increase in the number of homeless people. As the availability of resources in developing and low-income countries are further challenged, exact data are necessary to understand the status of the homeless population in those countries. Hence, future research is required from these countries. Long-term follow-up studies with culture-sensitive tools and group-specific studies are required for strengthening of preventive measures in this group of population.

Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of AI-assisted technology for assisting in the writing of the manuscript and no images were manipulated using AI.

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How to cite this article: Rabha AM, Bhuyan G. Suicide Prevention in Homeless Individuals: Review of Current Evidence and Future Directions. Acad Bull Ment Health. 2024;2:61-7. doi: 10.25259/ABMH_21_2024