

Table 3 continued

Independent variables	Recent suicidal ideation/valid response	Univariate analysis		Multivariate analysis	
		Odds ratio	95 % CI	Odds ratio	95 % CI
Calculation					
Good	13/147	1			
Impaired	13/194	0.74	0.33–1.65		
Memory function					
Good	16/158	1			
One or more mistakes	8/152	0.49	0.21–1.19		
Subjective memory impairment					
Absent	19/322	1			
Present	10/94	1.90	0.85–4.24		

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

They insisted that an effective strategy should include a broad-based health services package provided in an accessible service delivery setting. Targeting depression and providing mental health services might be effective only when it is provided in the context of a broad-based health services package.

According to the WHO's pyramid model for mental health [31], primary care for mental health must be supported by other levels of care, such as informal community-care services. Japan is in the process of reforming its mental health services from hospital-based mental health services to community-based mental health services [32], but changes have been slower than expected. A decline in hospital beds has been observed since 1994, but the total number of psychiatric care beds is still 2.7 per 1,000 people in Japan, compared with 0.3 beds per 1,000 people in the USA [33]. The development of community service program to prevent suicide among the homeless will contribute to the general reform process because it will provide support to the people who face the most difficult situations in our society.

Our results show that perceived emotional social support is a significant protective factor for recent suicidal ideation. Our results are consistent with those of Hwang et al. [34] showing that lack of perceived emotional social but not instrumental support was associated with poor mental health status among homeless people. Thus, being able to rely on a person who stands by one's side might have special importance for protection from suicidal behavior in homeless individuals.

However, it should also be noted that one of the outstanding features of our study population is social isolation and low accessibility to medical services. More than half of the study population reported that there was no one who could take care of them when they were ill in bed and no one who could take them to the hospital when they did not

feel well. These two items are included as measurements of perceived instrumental social support and directly relate to accessibility to medical services. Low accessibility might be more likely to result in attempted or completed suicide because an individual's mental and physical health may be more likely to be ignored and untreated. To avoid such circumstances, strengthening the social ties in the community might be crucial. Offering a relaxed setting, for example, a welfare café, where people can share their fears and concerns about homelessness and receive help and support from professionals may reduce the barriers to medical services and, moreover, encourage the integration of homeless individuals into a social network.

The present study also indicates that housing assistance, such as a shelter, might be a protective factor against suicidal behavior among street homeless. Glisson et al. [35] reported that a dormitory-style homeless shelter program with a comprehensive set of social services was successful in helping people find permanent housing within the first year after leaving the shelter. Wolf et al. [36] compared the subjective quality of life among three groups (homeless people who remained homeless, those who moved to dependent housing, and those who moved to independent housing) and they pointed out the significance of being independently housed to good quality of life. Although housing assistance may be crucial to preventing suicide among the street homeless, helping the homeless should start with providing a safe place with comprehensive services including social support and mental health services, and then should focus on helping them acquire independent housing.

This study had several limitations. First, our sample population may not have adequately represented the homeless people in Japan because this survey was limited to only two districts of Tokyo. Additionally, the participants involved in this study were those who were willing to

answer the questionnaire. Homeless people who did not respond to our questionnaire might have been more likely to have mental health problems and be isolated. Thus, in the present study, the frequency of suicidal behavior could have in fact been underestimated and the issue of suicidal behavior might be more serious than estimated by this study among homeless people in Japan. Second, we could not confirm a strong relationship between psychiatric diagnosis and suicidal behavior as previously reported because the present survey was based only on self-reported information. Psychiatric diagnostic interviews were not conducted because of difficulty with study design. However, the present findings indicate that brief screening tools such as the two-question assessment for current depressive episode or the WHO-5 for mental well-being could be effective for detection of psychological distress relating to suicidal ideation among homeless people. Third, a cross-sectional design has inherent limitations in determining a causal relationship. However, from an ethical point of view, a prospective longitudinal observational study to determine risk factors for suicidal behavior in such a high-risk population would not be realistic. From a practical point of view, prospective intervention studies are urgently needed to explore effective strategies for suicide prevention among the homeless at risk for suicide.

## Conclusion

Street homelessness, lack of perceived emotional social support, and current depression were significantly associated with recent suicidal ideation among homeless people in Japan.

Comprehensive interventions providing housing assistance, social support, and mental health services might be crucial as effective strategies to prevent homeless people from committing suicide.

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**Conflict of interest** The authors report no conflicts of interest.

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## IV. 研究班名簿

平成 26 年度「新たな地域精神保健医療体制の  
構築のための実態把握および活動の評価等に関する研究」

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「新たな地域精神保健医療体制の構築のための  
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