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# Suicide and Its Prevention Policy in Nepal: A Review

## 네팔의 자살과 자살 예방 정책에 관한 연구

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Abstract

**Objective** : Suicide is a disaster of unknown magnitude in developing countries such as Nepal. This review aimed to explore suicide and suicide prevention policies in Nepal.

**Methods** : Published articles and other reports were reviewed using content analysis.

**Results** : The estimated suicide rate in Nepal is between 8.6 to 24.9 per 100,000 populations, which is more than double that of the global age-standardized suicide rate of 11.4 per 100,000. However, there is a severe shortage of reliable, representative, and nationwide data about the burden of suicide in Nepal. The major reasons for the underreporting of suicidal attempt and cases include the misclassification of cases, lack of coordination between the legal and health sectors, stigma, a lack of awareness, legal provisions, and poor death registration systems. Most of the studies were institution-based using either autopsy reports of suicide cases or cases of deliberate self-harm. Hanging and poisoning accounted for more than 90% of suicides; and organophosphorus poisoning was the most common cause of poisoning. Suicide and suicide attempts were more frequently reported in women and young people, especially among those between 20 and 35 years of age. A mental health policy was adopted in 1997 with the objective to ensure accessibility of basic mental health services for all; to develop required manpower; and to improve awareness about mental health. However, its implementation has not been effective. The Mental Health Act was drafted in 2006, but its endorsement by the government is also pending.

**Conclusions** : The suicide burden in Nepal seems alarming but receives far less attention and priority. Although there is a mental health policy and some provision of mental health services, no specific suicide prevention strategies are developed.

Key Words : ***Suicide, Suicide Attempts, Prevention Policy, Nepal***

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# Ⅰ. INTRODUCTION

Suicide is a major public health problem worldwide. Suicide has been one of the leading causes of death; every 40 seconds, a person commits suicide globally, with 75.5% of cases in low and income countries. Suicide is preventable with timely interventions, including a comprehensive multi-sectoral suicide prevention strategy in each nation (1). Suicidal behavior refers to a range of behaviors that include thinking about suicide (or ideation), planning for suicide, attempting suicide, and suicide itself (2). In 2012, the South-East Asia Region accounted for 39% of global suicides (1). The reported suicide rate is higher in South Asia compared to the global average. However, accurate and representative statistics are lacking regarding the epidemiology of suicide and suicide attempts in Nepal. Nepal is a landlocked country situated in South East Asia with a human development index of 0.548, life expectancy at birth of 69.6 years, and a gross national income per capita (ppp$) of 2,311. Nepal has also undergone a decade of conflict (3).

Under-reporting and misclassification are greater problems for suicide than for most other causes of death. Moreover, suicide is illegal in Nepal and is punishable with fines and imprisonment. Thus, most families do not report suicide cases as they are afraid of being involved in police cases (4). Another reason for under-reporting of suicide is that families may avoid reporting suicides due to social stigma and discrimination against people with mental health problems (5). The under-reporting of suicides and suicide attempts may be more common in women, especially in cases related to domestic abuse (6). The Deputy Inspector General of Police, Chief of Women and Children Service Directorate at the Nepal Police Headquarters indicated that “The suicide rate is indeed alarming. Sadly, it has got far less attention and priority" (7).

Even before the earthquakes of 2015, Nepal had one of the world’s highest rates of suicide (8). The first steps in suicide prevention include the collection of data on suicidal behavior and causes of such behavior, followed by the scale-up of effective policies and programs and the evaluation of these policies and programs. The surveillance of suicides and suicide attempts is an essential component of national and local suicide prevention efforts (1). Even though a mental health policy was adopted in Nepal in 1997, the policy framework has not yet been effectively implemented. A significant challenge for mental health services is that they are concentrated in large cities (9).

This study summarized the information available on the burden, methods, and reasons for suicide and suicide attempts, as well as the policy and services on suicide prevention in Nepal. The study aimed to review the available evidence on suicide burden, vulnerable groups, underlying reasons, means of suicide and suicide attempts, and suicide-related prevention policies in Nepal.

# Ⅱ. METHODS

We performed a review of the published literature. We included articles published between 2005 and 2017 through different search engines. The keywords included suicide, suicide attempt, and deliberate self-harm in Nepal searched through the PubMed, Google Scholar, and Science Direct electronic databases. Most of the literatures were excluded at the initial stage; i.e., after reading the title of the published articles. Based on the title and abstract, a total of 60 articles and reports from the World Health Organization (WHO) and United Nations Development Programme (UNDP) were selected. We included only published articles and reports. Some articles were repeated; some did not have full text available, or they were not relevant to the focus of the present study. Thus, a total of 30 articles were excluded from analysis. The 30 selected articles were categorized into three groups based on the main subject matters included in the articles and literature. Nine articles were analyzed to determine the burden of suicide, eleven were analyzed to assess suicide attempts and deliberate self-harm, and ten were assessed for analysis of policies regarding suicide

prevention in Nepal. We observed a severe shortage of evidence regarding the suicide rate or its burden on the general population in Nepal. Thus, we included the articles and reports that dealt with suicide, suicide attempts, and suicide prevention in Nepal published since 2005 and with freely accessible full text available through search engines. The classified articles were analyzed based on references, data source or study design/study population, and study result.

# Ⅲ. RESULTS

## 1. Burden of suicide

Suicide is a leading cause of death among young and adult people in Nepal (10), especially among women of reproductive age (11). Due to the lack of a surveillance system, there is a corresponding lack of reliable data on the prevalence of suicide and its causes. Based on the estimated rates of a review study and; the WHO and UNDP reports, the prevalence ranges from 8.6 to 24.9/100,000 population in Nepal (1, 3, 11, 12). A review study by Jordans et.al (2014) mentioned that suicide rate as 8.6/100,000 population; and WHO reported it was 24.9/100,000 population, including 30/100,000 in men and 20/100,000 in women reported by WHO and UNDP (1, 3, 12). The review report by national health sector support program showed that the number of suicides among women of reproductive age increased from 22/100,000 in 1998 to 28/100,000 in 2008 (11). Suicide is now one of the leading causes of death for women of reproductive age (13, 14).

It is difficult to find out actual burden of suicide because most of the studies on suicide and suicide attempts are institution-based using data from postmortem reports of suicide cases or cases of deliberate self-harm. These studies show that hanging is the most common method of suicide, followed by poisoning. These two methods of suicide account for more than 90% suicide in Nepal (15-18). The most commonly affected age group was those 30 to 40 years of age. More female cases of suicide were reported than males in most of the studies (1, 16, 17). Studies found that the frequency of suicide and suicide attempt peaked during the summer season, from April to October. Most cases and suicide attempts were observed during the last quarter of the day (18). Studies on the reasons for suicide and suicide attempt are mostly lacking, except for a few institution-based studies. Some of the reported reasons included domestic violence, mental illness, and failure in academic achievement among children and adolescents (15, 16) (Table 1).

## 2. Suicide attempts/deliberate self-harm

The most common method of deliberate self-harm was poisoning, followed by hanging (19, 20). More poisoning cases admitted to hospital were women and young people, especially those less than 35 years of age (19, 21-26). Most of the poisoning cases were intentional and suicide attempts, ranging from 66.2% to 97% (20, 21, 23, 25, 27). Organophosphorus poisoning was the most common poisoning (20-24, 26- 27) (Table 2).

Very few studies assessed the causes of suicide and suicide attempts. The reasons for suicide attempts included financial, domestic troubles, domestic violence, unsuccessful love affairs, marital disharmony, and psychiatric morbidities (16, 25-27, 28). Almost 50% of those attempting suicide had depression (27). Another study reported that 75% of those who attempted suicide had at least one International Classification of Diseases (ICD-10) Related mental disorder (28). Suicide attempts and cases most frequently occurred during the summer months and during the last quarter of the day (16, 19, 21) (Table 2).

## 3. Mental health and suicide related policies and programs

The National Mental Health Policy adopted in 1997 has

Table 1. Burden of suicide in Nepal

| Reference | Study design/study population | Study result |
|---|---|---|
| Sharma, 2006 | Sample survey | Suicide: sixth and seventh leading cause of deaths among men and women 15-64 years of age, respectively |
| Pradhan et al., 2011 | Review | Suicides among reproductive age women increased from 22/100,000 in 1998 to 28/100,000 in 2008 |
| Pradhan et al., 2012 | Suicide cases | Causes: low socioeconomic status (45%) and psychosocial causes (43%).<br>Suicide methods: poisoning (53%) and hanging (45%).<br>Previous suicidal attempts: 17% |
| Mishra et al., 2013 | Retrospective observation of police records | Of 2,172 cases the majority were women<br>Methods: hanging, followed by poisoning<br>Causes: domestic violence, mental illness, failure in academic achievement.<br>The incidence rate peaked from April to October. |
| Jordans et.al, 2014 | Review | Suicide: 8.6/100,000 population (SD = 8.87) |
| WHO, 2014 | WHO report | Suicide rate: 24.9/100,000<br>(men: 30.1/100,000; women: 20.0/100,000) |
| Subba et al., 2015 | Autopsy report | Female to male ratio: 2:1<br>Age group: 20-29 years<br>Methods: hanging, followed by poisoning |
| Subedi et al., 2015 | Suicide cases | Age: 31-40 years<br>Sex: equally involved<br>Suicide method: hanging (60.6%) and poisoning (34.7%).<br>Most reported time: 3:01 to 6:00 PM<br>Spot death: about half (45.3%). |
| UNDP, 2015 | UNDP report | Suicide rates: 30 and 20 per 100,000 male and female populations, respectively |

also yet to be implemented. The mental health policy has four major aspects. The first objective is to ensure accessibility and availability of basic mental health services for all by integrating mental health services into general health services. Development of required manpower is the second aspect of the policy. Third objective is to protect the fundamental human rights of mentally ill. To improve awareness about mental health, mental disorders and the promotion of mentally healthy life styles is the fourth objective of the policy (8, 9, 30). The Mental Health Act drafted which ensured human right of people with mental illness in 2006 has not been endorsed by the government yet. This envisions establishing a National Mental Health Center to provide specialized services in the field of mental health. Every mentally ill person reserves the lawful rights to be treated as a general citizen (9).

There is still no National Mental Health Program or a Division of Mental Health in the Ministry of Health to implement the national health policy. Although the government has attempted to include mental health services as a basic primary health care component; it still remains inaccessible to most of the population at the primary care level. Only 2% of medical and nursing training is dedicated to mental health, and most qualified doctors and nurses work in the cities (31, 32).

There is a limited provision of resources towards mental

Table 2. Suicide attempts/deliberate self-harm in Nepal

| References | Study design/study population | Study result |
|---|---|---|
| Paudyal, 2005 | Admitted poisoning cases | Age: 70% were 15-24 years of age<br>Sex: 56.5% females<br>Season: more cases in summer months<br>Organophosphorus compounds: 42% |
| Singh & Aacharya, 2006 | Admitted poisoning cases | Age: most cases among those 16-25 years of age<br>Common poison: organophosphorus compounds |
| Koirala et al., 2007 | OPD patients | Positive and significant correlation observed between suicidal symptoms, total HDRS score, and duration of illness |
| Thapa et al., 2008 | Retrospective observation Medical records | Age: 40.5% were 21-30 years of age<br>Common poison: Organophosphorous<br>Intentional poisoning: 66.2% |
| Marahatta et al., 2009 | Poisoning cases | Female-male ratio: 1.3:1<br>Mean age: 29.8 years in males and 35.5 years in females<br>Intentional poisoning: 79.3%<br>Common poisoning: Organophosphorus<br>Source of poison: 66.6% from home store |
| Subba et.al, 2009 | Retrospective analysis of medical records | Sex: 65.2% females<br>Age: 58% in 15–24 years<br>Methods: 89.6% poisoning<br>Organophosphates: about two-thirds<br>Most common season: May to July<br>Time: last quarter of the day |
| Chataut et al., 2012 | Retrospective study of poisoning cases | Age: 40% were 25-34 years of age,<br>Sex: 58.7% females<br>Intentional poisoning: 97%<br>Reasons: financial (20.5%), domestic troubles (17.8%), unsuccessful love affairs (16.4%), marital disharmony (13.7%), domestic violence (10.9%) |
| Risal et al., 2013 | Admitted poisoning cases | Intentional poisoning: 90%<br>Causes: depression (50%), family dispute (19%), marital disharmony (17%) |
| Ghimire et al., 2014 | Admitted poisoning cases | Age: 77% below 35 years of age,<br>Female-male ratio: 1.35:1<br>Common poison: organophosphorus (72.5%)<br>Causes: interpersonal conflict (72%), psychiatric disorders (37%)<br>Most prevalent psychiatric disorders: adjustment disorder (13.5%), mood disorder (11%) |
| Karki & Risal, 2014 | Admitted poisoning cases | Common cause: suicide attempts<br>Time: evening hours<br>Common poison: organophosphorus |
| Shakya, 2014 | Suicide attempters | Sex: 70% females<br>Method: poisoning<br>Mental disorder: 75% had at least one ICD-10 mental disorder<br>Most common stressor: interpersonal conflict |

healthcare. The governments spend less than 1% of its total healthcare budget in mental health (33). Although there are no accurate data on the prevalence of mental disorders in Nepal, a study has indicated to the prevalence to be as high

Table 3. Mental health care and policies

| Reference | Study design/study population | Study result |
|---|---|---|
| Benson & Shakya 2008 | Review | The barriers to mental health care include limited mental health resources, workforce, stigma, and mental health literacy |
| Jha et al., 2009 | Short communication | The barriers to mental health services include the absence of a mental health section within the Department of Health Service, insufficient budget, and a shortage of trained manpower |
| Pradhan et al., 2011 | Review | Nepal has a shortage of systematic, reliable, and nationally representative data<br>This lack is due to the poor quality of the registration systems, miscategorization of cases, and under-reporting of suicides by the police<br>The under-reporting may be intentional due to the stigmatization and illegality of suicide in Nepal |
| Robkin, 2012 | | Cultural stressors negatively impact mental health in women<br>Suicide intervention in Nepal should address cultural stressors such as domestic violence, alcoholism, and women's access to income and education |
| Upadhaya, 2013 | Policy Review | Access to basic mental health services, development of manpower, protection of human rights of mentally ill, promotion of mentally healthy life styles are major aspects of national mental health policy |
| Luitel et al., 2015 | Systematic analysis | A mental health policy has existed since 1997<br>The policy has not yet been implemented<br>The Mental Health Act which ensures the human rights of people with mental illness was drafted in 2006, but its endorsement by the government is also pending.<br>The budget for mental health is minimal<br>Mental health services are concentrated in large cities |
| Simkhada et al., 2015 | Editorial | There is a need to prioritize mental health issues and services in Nepal |
| Cousins, 2016 | World report | No mental health act exists, and the National Mental Health Policy is not fully operational |
| Hagaman et al., 2016 | Network analysis | Though some indicators are included in the health management and information system (HMIS), the HMIS does not systematically report suicide cases Implementation of national suicide prevention strategies will not be possible without reliable statistics and standardized reporting practices |
| Marahatta et al, 2017 | | A specific long-term national strategy for suicide prevention is lacking |

as 37.5% in rural communities (34). More than 80% of psychiatric inpatient beds in the country are in capital city, Kathmandu (32). The majority rural population has extremely restricted access to specialist mental health facilities. Despite high rates of mental health disorders, there is only one specialized hospital in capital city (35-37).

Including both governmental and non-government hospitals, bed population ratio was 1.5 beds per 100,000 population.

Health workers at primary health care (PHC) level are also supposed to provide mental health services. Few psychotropic medications were made available in the primary health care centers at the Health Post. However, training on mental health has been initiated in some districts. Although integration of the services is mentioned in the policy, mental health services at PHC level has not been effective due to lack of training/refresher training, lack of standardized training manuals, no clear referral system, no screening tools and guidelines and limited drugs (8, 9, 30).

Regarding human resources, the number of mental health specialists is limited; and on the same time most of them were concentrated in urban areas. In addition, previous finding shows that, even trained PHC workers also were not providing effective services due to lack of supportive supervision and lacks of drugs. Female community health volunteers do not get any training regarding mental health. Mental health services are provided by traditional and faith healers at the community level, however there are outside formal system and no systematic data are available for such services. There is need to prioritize mental-health- issues and services in Nepal (9, 38).

Mental illness is one of the most prevalent reasons for suicide and suicide attempts. However, evidence shows that access to mental health care services is limited due to the lack of a mental health budget, stigma, limited trained human resources, unplanned growth of private medical institutions, and a lack of mental health literacy among the general population. One of the challenges is the lack of a standardized mental health training manual for PHC workers, in addition to the lack of supervision and referral systems (5, 8 ,9, 30, 37) (Table 3).

The most important barrier to suicide prevention is that Nepal has a shortage of systematic, reliable, and nationally representative data. Due to the poor quality of the registration systems, suicide cases may be miscategorized, which may lead to the under-reporting of suicide data. The data may also be intentionally under-reported due to suicide being stigmatized and illegal in Nepal. The implementation and evaluation of national suicide prevention strategies will not be possible without reliable statistics and standardized reporting practices (11, 39). Nepal should also focus on affordable and accessible mental health care services for the entire population. As well, a services-specific long-term national strategy for suicide prevention is also necessary, which addresses causes including cultural stressors such as domestic violence, alcoholism; the common modes of suicide attempts; and early access to treatment (40-42) (Table 3).

## Ⅳ. DISCUSSION

Even though there is a severe data gap, existing evidence indicates that the suicide rate in Nepal is relatively high, ranging from 8.6 to 24.9/100,000, which is more than double that of the global age-standardized suicide rate of 11.4/100,000(1, 8, 12). A prospective study shows that suicide rates ranged from 21.55 to 24.23 per 100,000 population in India, neighboring country of Nepal (43). The estimated rates of fatal and non-fatal suicide were 3.29 and 9.86 per 100,000 person years observed, respectively in rural part of Bangladesh (44). The above findings also indicate there might be under-estimation of this rate in Nepal.

Lack of reliable data has hindered developing strategies, reaching targets, and treating suicide as a serious concern for the public health agenda. Legal codes criminalizing suicide, poor death recoding system, and lack of coordination between police authority and health system have impaired documentation, reporting, and care provision. Suicide prevention has been a neglected and less prioritized issue in Nepal (4, 5, 39, 41).

The most common method of suicide in Nepal is hanging, followed by poisoning. These two methods of suicide account for more than 90% of suicide cases in Nepal (15-16, 18). This finding is consistent with the studies from Bangladesh and India. This suggests that prohibiting

access to these means of suicide may help to prevent death by suicide. The most common cause of completed suicide is hanging, however, the most common cause of deliberate self-harm is poisoning. This gap also indicates that the probability of dying from hanging is higher than that by poisoning. Similarly, the most common method of suicide was hanging (36.9%), followed by poisoning (34.7%) in the west coastal region of India (45). Suicide is a major public health problem in Nepal, affecting the most economically productive population. As it is difficult to save the lives of persons once they have determined a means to commit suicide, measures have to be implemented to identify and protect the vulnerable persons (18).

Deliberate self-harm is most common among young people and women. The most common method of deliberate self-harm is poisoning, mostly organophosphorus poisoning (20-24, 26, 27). Strict rules must be followed regarding the sale of psychotropic medicines and pesticides (22). Pesticide self-poisoning accounts for about one-third of the world's suicides. The evidence suggests that many of these deaths might be prevented if the use of the pesticides most toxic to humans was restricted and the agents were stored properly (46). Attempted suicide is illegal in Nepal and people who attempt suicide are subject to imprisonment, fines or both; therefore, suicide figures likely underestimate the true incidence (47). Suicidal ideation in the last 12 months was present in nearly one-tenth of the study population. The factors associated with suicidal ideation included primarily dissatisfaction with academic performance, being in clinical semesters, having a history of drug abuse, and feeling neglected by parents among medical students (48).

Mental health services by specialists are provided zonal level health facilities and above only. Mental health services at PHC level are not functioning well due to lack of training, drugs and standardized training guideline. There are 18 outpatient mental health facilities available in Nepal, none of which are reserved for children and adolescents (9, 32).

The HMIS does not systematically collect or report self-harm or suicide data. It is the most important barrier to address suicide; unless the health system generates reliable data on suicide and suicide attempts, it is difficult to draw the attention of planners, policymakers, and leaders to direct resources. One of the reasons for under-reporting is “medical-legal”- the concept that death by suicide belongs to the police and not medical personnel. It is not legal for medical personnel to report the cause of death as suicide; rather, they simply identify the mechanisms of death, such as cardiac failure, asphyxiation etc. However, it is possible to report suicide data systematically because all suicide must legally undergo a post-mortem examination at a government health facility and the HMIS includes ICD codes.

Thus, Nepal needs collaborative reporting and accountability between the law and health sectors (39). There is little emphasis on mental health, but it is not too late (41). Training of primary health care workers on the early detection and referral for mental illness such as depression are essential. A review study reported that about half (45%) of the suicide victims had contact with primary care providers within one month of suicide. This study also showed that older adults had higher rates of contact with primary care providers within one month of suicide younger adults. This observation suggests that primary health care can be used for suicide prevention at the community level (49).

Considering the lack of data on prevalence and health seeking behavior on mental health, a pilot survey for the National Mental Health Survey, Nepal (2018) is going on and will be completed in the December 2018. Its’ objective is to assess the prevalence of mental disorders and help seeking behavior among people with mental disorders in Nepal”. The survey was planned to fulfill the gap of lack of national-level data on the prevalence of mental disorder and unmet need for services. So that mental health need of Nepalese population could be advocated and addressed (50).

At present, mental health receives insignificant attention from the government to the general public. There is an urgent need to prioritize mental health problems and services in Nepal.

## Ⅴ. CONCLUSIONS

There is a severe lack of research and data on suicide in Nepal, which is one of the first obstacles to address suicide. Although there is possibility, there is no systematic method for collecting, recording, and reporting of suicide attempts and cases in Nepal. In this study, most studies were institution-based, using data from postmortem reports of suicide cases or cases of deliberate self-harm that were admitted to the hospital for emergency treatment. The most common method of suicide was hanging, followed by poisoning; both methods account for more than 90% of suicides. Women and younger individuals are most affected by suicide and suicide attempts. The most common method of deliberate self-harm was poisoning. Misreporting and under-reporting of suicides obscure the true urgency of the situation and can lead to misdirected efforts. As mentioned by nation mental health policy, there is an urgent need to focus on accessible mental health care through the PHC, and a specific long-term national strategy is required for suicide prevention, which addresses the causes, access to modes of suicide attempts, and early access to treatment.

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〈국문초록〉

**연구목적** : 네팔과 같은 개발도상국가에서도 자살문제는 상당한 국가적 재난과제이다. 이 연구는 네팔의 자살 시도 현황과 자살 방법 및 이유 등에 대한 현황을 살펴보고 및 자살 예방 정책을 파악하는데 있다.

**연구방법** : 게재된 논문 및 보고서를 내용분석 방법에 의해 분석하였다.

**연구결과** : 네팔의 자살률은 인구 10만 명당 8.6~24.9명으로 세계 표준화 자살률인 10만 명당 11.4명보다 두 배 이상 높다. 그러나 네팔은 자살에 관한 신뢰할 수 있는 국가 데이터가 상당히 부족한 상태이다. 자살 시도 및 자살 사례가 과소보고 되는 주요 이유는 자살 사례의 오분류, 법적 및 보건부문 간의 협력 부족, 낙인, 인식 부족, 법적 조항 및 미흡한 사망 등록 시스템 등 때문이다. 대부분의 연구는 자살 사례에 대한 부검 보고서 또는 고의적인 자해에 대한 기관 보고 자료를 분석하였다. 그 결과, 목을 매달거나 약물중독으로 인한 사망은 자살의 90% 이상을 차지했으며, 살충제 약물 중독이 자살의 가장 큰 원인으로 나타났다. 여성과 청소년, 특히 20세에서 35세 사이의 자살 사망 및 자살 시도 사례가 더 빈번하게 보고되었다. 정신 건강 정책은 전 국민을 위한 기본적인 정신 건강 서비스 접근성 보장, 정신 건강에 대한 필요한 인력 개발, 정신 건강 인식 제고를 위해 1997년에 채택되었다. 그러나 그 시행은 효과적이지 못하다. 정신건강법은 2006년에 기안 되었으나 아직 정부의 승인을 기다리고 있다.

**결론** : 네팔에서의 자살 사망 및 자살 시도 등의 문제는 많았지만 이에 비해 자살 예방에 대한 관심과 우선순위는 낮은 것으로 나타났다. 네팔은 정신건강 정책과 정신건강 서비스의 일부 조항은 존재하지만 구체적인 자살 예방 대책은 부족한 것으로 평가되었다.

**핵심어 :** ***자살, 자살 시도, 예방 정책, 네팔***