Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Journal of Adolescent Health 67 (2020) 135–137

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Letter to the editor

Risk and Protective Factors for Adolescent and Young Adult Mental Health Within the Context of COVID-19: A Perspective From Nepal

To the Editors:

On December 31, 2019, the World Health Organization (WHO) was alerted about a cluster of pneumonia cases of unknown etiology in Wuhan, China [1]. By January 12, 2020, China had shared the genetic sequence of a novel coronavirus [2], later named severe acute coronavirus syndrome 2 (SARS-CoV-2), the etiological agent of Coronavirus Disease 2019 (COVID-19) [3]. Until today, the virus has spread to more than 200 countries, causing over 1.5 million cases and over 100,000 deaths [4]. COVID-19 was declared first a Public Health Emergency of International Concern (PHEIC) [5] and later a pandemic disease [6] by the WHO.

While recent published evidence describes the physical health impacts of COVID-19, there is paucity of research [7] regarding COVID-19–related mental health outcomes. Previously, quarantine measures had led to post-traumatic stress symptoms, confusion, and anger [8]. Although it is likely that COVID-19–related mental health impacts will only be manifested in the future, we can act today to prevent exposed adolescents and young adults (i.e., youths) from carrying mental health complications for decades after COVID-19. In the following paragraphs, we will explore the unique mental health risk and protective factors of Nepalese youths, who have been in complete lockdown since March 23 [9].

Risk Factors

The following are some COVID-19–related mental health risk factors in Nepalese youths: (1) deficient youth mental health services funding; (2) social media use; (3) a suddenly-imposed lockdown; (4) lack of understanding of lockdown restrictions; (5) sudden work/student life changes; (6) abrupt postponement of the Secondary Education Examination (SSE); and (7) exposure to devastating earthquakes in 2015.

In Nepal, there is insufficient funding of youth mental health services [10]. Underfunded mental health services may lead to increased negative mental health outcomes.

Access to Internet and social media has increased in recent years in Nepal. Social media use has been correlated with negative mental health outcomes such as stress and depression [11]. In addition, social media may become a source of health-related information during crises [12]. Youths might not have the capacity to handle the frequency or to analyze the accuracy [7] of information shared via social media. Recency [12] and sender (i.e., echo chambers [13]) of information may play an unbalanced role in assessing credibility, which may lead to misinformation and related stress/anxiety.

The implementation of a lockdown mandate with only a few hours of notice in Nepal left people unprepared for a long-term restriction on mobility. In addition, the social distancing and isolation that accompanies long-term lockdowns might be a risk factor for anxiety, mood disorders, and addictive and thought disorders [14].

Working youths cannot continue their work, either because their places of employment are closed or because they lack resources (i.e., computers) at home. For students, engagement in schools, in colleges, and with peers, which is a protective factor against adverse mental health outcomes [15], was suddenly interrupted.

Previous and multiple experiences of Nepali “lockdowns” (i.e., strikes or *bandha* and curfews) may have created a false expectation of “life-as-usual” activities during evenings. Conflicting information is associated with higher stress [7]. Misplaced expectations (arguably a type of conflicting information) may lead to anxiety and/or depression if and when authorities enforce the COVID-19 lockdown more strictly.

Table 1
Risk and protective factors for negative COVID-19–related mental health outcomes among adolescents and youths in Nepal by levels of action or interaction within the SEM

SEM level	Risk factors	Protective factors
Individual	1. Lack of understanding of lockdown restrictions 2. Exposure to 2015 earthquakes	1. Personal coping strategies 2. History of resiliency in previous stressful situations
Relationship	1. Social media	1. Family structure
Community	1. Work/sudent life changes	1. Free psychological help
Societal	1. Funding of MHS for A/Y 2. Sudden lockdown 3. Abrupt SSE postponement	1. Cultural use of facemasks 2. Repurposing of school campuses

A/Y = adolescents and youths; MHS = mental health services; SEM = socio-ecological model; SSE = secondary education examination.

https://doi.org/10.1016/j.jadohealth.2020.04.006

Risk factors	2015 Earthquakes; Underfunding of MSH for A/Y	COVID-19 outbreak first reported (China, Dec 31); Characteristics of social media use	First national news coverage (Jan 16, KP); Characteristics of social media use	Characteristics of social media use	Sudden lockdown; Abrupt SSE postponement; Work/student life changes; Lack of understanding of restrictions	Characteristics of social media use; Work/student life changes;
Date	**Previous**	**December 2019**	**January 2020**	**February 2020**	**March 2020**	**April 2020**
Protective factors	Idiosyncratic coping mechanisms; History of resilience; Family structure	Family structure; Use of facemasks	Family structure; Use of facemasks	Free psychological help; Family structure; Use of facemasks	Free psychological help; Family structure; Use of facemasks; Repurposing of school campuses	Free psychological help; Family structure; Use of facemasks; Repurposing of school campuses

Figure 1. Chronological order of events related to risk and protective factors for COVID-19–related negative mental health outcomes among adolescents and youths in Nepal. A/Y = adolescents and youths; MHS = mental health services; SSE = secondary education examination.

The SEE, a national examination that is commonly associated with stress/anxiety [16], was also postponed just hours before the scheduled time [17]. This abrupt cancellation and lack of information about SEE's future course left everyone involved in confusion and stress.

Nepalese youths experienced negative post-2015-earthquake mental health outcomes, including post-traumatic stress disorder [18]. A new emergency/crisis scenario may exacerbate those negative outcomes or generate new ones. Post-traumatic stress symptoms have been reported in Wuhan in the middle of the COVID-19 outbreak [19] in addition to adverse COVID-19 mental health outcomes associated with vicarious exposures [20].

Protective Factors

Mental health protective factors in Nepal may include the following: (1) cultural acceptance of facemasks; (2) family structure; (3) school space repurposing; and (4) availability of free counseling.

Facemasks are a common sight in Nepalese urban centers due to air pollution [21]. In the wake of COVID-19, traditional tailors (*suchikar*) have been sewing and gifting cloth masks. Altogether, these habits/measures may facilitate the implementation of CDC facemasks recommendations [22].

Joint and extended families are common in Nepal, which provide youths with a support system. As a result, youths are reconnecting with their family values and cultural identity. Increased support from friends and family have been reported in the context of COVID-19 [23].

School campuses are being used as potential quarantine and food collection sites, instilling a sense of social responsibility and community support that may negate adverse mental health outcomes [24]. Finally, trained counselors and psychologists are offering suggestions and psychological first aid (mostly free) via the Internet.

Conclusions

COVID-19 pandemic challenges are likely to lead to negative mental health outcomes among youths, especially in Nepal. Table 1 offers an analysis of risk/protective factors by levels of the socio-ecological model, whereas Figure 1 maps the chronological order on which risk/protective factors occurred (Figure 1).

Vinita Sharma, Ph.D., M.P.H.
College of Public Health
The University of Iowa
Iowa City, Iowa

Miguel Reina Ortiz, M.D., Ph.D., C.P.H.
College of Public Health
University of South Florida
Tampa, Florida

Nandita Sharma, Ph.D.
Central Department of Psychology
Tribhuvan University
Kirtipur, Kathmandu, Nepal

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