

Health Promoting Lifestyle during Covid-19 Pandemic among Residents of Gandaki Province, Nepal

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ABSTRACT

Background

Lifestyle is an important factor to individual's health and quality of life. Although, the emergence of Corona virus disease 2019 (COVID-19) has forced billions of people to change their lifestyle overnight.

Objective

To identify health promoting lifestyle during COVID-19 pandemic among the residents of Gandaki Province, Nepal.

Method

Descriptive cross sectional web based study was conducted among 386 respondents from Gandaki Province. Adults from 18 years and above, who could fill the form online were included using purposive and snowball sampling technique. Data were collected using Health Promoting Lifestyle Profile II (HPLP II) scale and analysed using descriptive (frequency, percentage, median) and inferential statistics (Mann Whitney U test and Kruskal Wallis test).

Result

Only 18.7% of the respondents had an excellent health promoting lifestyle followed by good health promoting lifestyle among 60.4%. Highest median score was observed in spiritual 27(10-36), and interpersonal relationship subscale 27(9-36). Whereas, the lowest was observed in physical activity 21(8-32) followed by stress management 24(10-32). Statistically significant difference was observed in age and perception of own health status with spirituality; gender, chronic illness and perception of own health status with interpersonal subscale and age, gender, marital status, occupation and perception of own health status with physical subscale.

Conclusion

The study concludes the need of health education and awareness to promote healthy lifestyle behaviours with a particular emphasis on indoor physical activities and stress management skills with specific consideration to female and elderly.

KEY WORDS

Adult, COVID-19, Health promoting lifestyle/behaviour, Nepal

INTRODUCTION

Better health is essential to human happiness and well-being.¹ However, the emergence of COVID-19 pandemic has posed enormous health, economic, environmental and social challenges to the entire human population. In the absence of effective drugs and vaccines till now, social distancing and preventive measures are the only alternatives to control its spread.² Although lockdown helps in breaking the chain, it has led to several issues affecting psychological and physical health of an individual.³

This pandemic crisis has resulted in digital-education, smart working, limitation of outdoors and in-gym physical activities, modification in eating, sleeping habit and sedentary lifestyle, that may threaten our health in long term.⁴ A study in India reported increased consumption of carbohydrate by 21% and fat by 13% with decrease sleep among 27% during Covid-19 lockdown.⁵ Weight gain was reported among 48.6% and 3.3% smokers decided to quit smoking in Italy.⁴ In addition to this, lockdown was associated with high-risk drinking in England.⁶ Yet it is very important to focus on personal health and healthy lifestyle choices.⁷ As adoption of healthy lifestyle not only help to prevent, fight and recover from infections but also reduces the risks of chronic diseases and healthcare cost in future.^{8,9}

Though the governments around the world struggle to use various prevention strategies ranging from imposing lockdown to scaling up testing, health promotion can be one of the effective way to support health and well-being in current situation.¹⁰ But very less emphasis has been placed on this aspect. Therefore, the study aims to identify health promoting lifestyle during COVID-19 pandemic among residents of Gandaki Province.

METHODS

Descriptive cross sectional web based study was conducted among the residents of Gandaki Province from 20th July to 30th August, 2020. Four districts; Kaski, Tanahun, Syanja and Parbat were randomly selected (lottery method). A sample size of 386 was determined by assuming 50% prevalence of good health promoting lifestyle using Cochran's formula, and the number of sample from each district were determined proportionately; 0.049% of the total population was taken from each district.^{11,12} Adults with age 18 years and above, who could fill the form online and those who voluntarily agreed to participate in the study were selected using purposive and snowball sampling technique.

Online self-administered structured questionnaire was used for data collection. The tool included two parts. Part I included questions related to socio-demographic characteristics developed by the researchers through literature search. Part II consisted of standard HPLP II developed by Walker et al.¹³ The instrument is freely accessible and a revision of the Health Promoting Lifestyle

Profile (HPLP). It consists of 52 items with 4 point likert scale {Never (N) = 1, sometimes (S) = 2, often (O) = 3 and routinely (R) = 4} and further categorized into six subscales: Health Responsibility, Physical Activity, Nutrition, Spiritual Growth, Interpersonal Relations and Stress Management. The total score ranges from 52 to 208, whereby the healthy lifestyle behaviour increases as the score increases. Further it is categorized as; Excellent (172-208), Good (132-171), General (92-131) and Poor (52-91) based on previous literature.¹⁴

For the use of the tool in Nepalese context, first forward translation (English to Nepali) then backward translation (Nepali to English) was done to retain same meaning. Regarding reliability of the tool, Cronbach alpha was found to be 0.907 in a previous study conducted in Pokhara.¹⁴ The tool was developed in google form and data were collected by sending the link to the respondents who were connected with the researchers through social media and asking them to forward the link who met inclusion criteria. However health workers were excluded by creating an automated setting.

The data were collected after obtaining ethical approval from Institutional Review Board of Manipal Teaching Hospital, Phulbari, Pokhara. Informed consent was taken from each respondent by describing the study title and objectives of the study in initial page of google form and creating an automated setting, whereby further questions were accessible only after voluntary approval of the respondents. The average time taken to complete the form was 15-20 minutes. Confidentiality and anonymity of the data were maintained.

The collected data were edited and coded in the google sheet and then imported to IBM SPSS Software Version 20 for analysis. Descriptive statistics such as frequency, percentage, mean, median and standard deviation were used. Mann Whitney U test and Kruskal Wallis test were used to find out the differences in age, gender, marital status, occupation, chronic illness and perception of own health status with health promoting lifestyle score. The level of significance was considered at p value < 0.05.

RESULTS

The findings of the study demonstrated that majority 330(85.5%) of the respondents belong to the age group 18-39 years with the mean age 28.94±10.4 years. More than half of them were female 206(53.4%), from Kaski district 203(52.6%) and 208(53.9%) were living without spouse. In regard to occupation, 165(42.7%) were students and 204(52.8%) had educational qualification of bachelor and above. Majority 350(90.7%) had no any chronic illness and only 249(64.5%) perceived to have good health status (table 1).

Table 1. Socio-demographic Characteristics of Respondents (n=386)

Characteristics	Categories	Number	Percentage
Age (in years)	18-39	330	85.5
	40-59	45	11.7
	60 and above	11	2.8
Mean age ± S.D	28.94±10.49	Range: 18-70	
Gender	Female	206	53.4
	Male	180	46.6
District	Kaski	203	52.6
	Tanahun	98	25.4
	Syanja	65	16.8
	Parbat	20	5.2
Marital status	Without spouse	208	53.9
	With spouse	178	46.1
Educational status	Higher secondary and below	182	47.2
	Bachelor and above	204	52.8
Occupation	Student	165	42.7
	Service	93	24.1
	Business	52	13.5
	Housewife	38	9.8
	Others	38	9.9
Chronic illness	No	350	90.7
	Yes	36	9.3
Perception of own health status	Good	249	64.5
	Average	133	34.5
	Poor	4	1.0

This study found that the health promoting lifestyle was good among 233(60.4%) and poor among 4(1.0%) of the respondents (table 2). The HPLP II Score ranged between 62-208 and the median value was 148. In subscale analysis, highest median score was observed in spiritual growth and interpersonal relation subscale; 27(10-36), 27(9-36) respectively. While lowest was observed in physical activity 21(8-32) (table 3).

Table 2. Level of Health Promoting Lifestyle among Residents of Gandaki Province (n=386)

Health Promoting Lifestyle Level (Score)	Number	Percentage
Excellent (172- 208)	72	18.7
Good (132-171)	233	60.4
General (92-131)	77	19.9
Poor (52-91)	4	1.0

Table 4 shows the differences in the socio-demographic characteristics according to the obtained subscale score, whereby statistically significant difference was observed in gender (p=0.01), chronic illness (p=0.002) and perception of own health status (p<0.01) with the interpersonal relation;

Table 3. Median Score of Each Subscale of HPLP II among Residents of Gandaki Province (n=386)

HPLP II Subscales	Median (Range)
Spiritual growth	27 (10-36)
Interpersonal relations	27 (9-36)
Health responsibility	26 (9-36)
Nutrition	24 (11-36)
Stress management	24(10-32)
Physical activity	21(8-32)
Total HPLP II score	148(62-208)

Table 4. Differences in the Selected Socio-Demographic Variables with Subscale Scores of HPLP-II (n=386)

Variables	Categories	No. (%)	Median Scores		
			Inter-personal	Nutrition	Health responsibility
Age in years	18-39	330(85.5)	27	24	26
	40-59	45(11.7)	27	25	26
	60 and above	11(2.8)	24	22	24
	p value		0.16	0.06	0.88
Gender	Female	206(53.4)	27	24	26
	Male	180(46.6)	27	24	26
	p value		0.01*	0.23	0.47
Marital status	Without Spouse	208(53.9)	27	24	26
	With Spouse	178(46.1)	27	24	26
	p value		0.42	0.04*	0.61
Occupation	Student	165(42.7)	27	24	26
	Service	93(24.1)	27	24	26
	Business	52(13.5)	27	24	25.5
	House manager	38(9.8)	29	26.5	25.5
	Others	38(9.8)	25	23.5	26.5
	p value		0.10	0.55	0.84
Chronic illness	No	350(90.7)	27	24	26.5
	Yes	36(9.3)	25	24	26
	p value		0.002*	0.78	0.72
Perception of own health status	Good	249(64.5)	28	24	26
	Average	133(34.5)	26	24	25
	Poor	4(1.0)	22.5	22	25.5
	p value		0.00*	0.02*	0.03*

*Statistically significant

in marital status (p=0.04) and perception of own health status (p=0.02) with nutrition and in perception of own health status (p=0.03) with health responsibility subscale.

Furthermore, statistically significant difference was observed in age (p=0.04), gender (p<0.01), marital status (p=0.03), occupation (p<0.01) and perception of own health status (p<0.01) with physical activity and in age

($p=0.03$) and perception of own health status ($p<0.01$) with spiritual growth. While no statistically significant difference was found in socio-demographic variables with stress management subscale. In regard to total HPLP-II score, statistically significant difference was observed in perception of own health status ($p<0.01$). Those who perceive their health as good were found to have highest median score (table 5). No significant difference was observed in education with HPLP II scale and subscale score.

Table 5. Differences in the Selected Socio-Demographic Variables with Subscale Scores of HPLP-II (n=386)

Variables	Categories	N(%)	Median score			
			Physical activity	Stress Management	Spiritual	HPLP II Scores
Age in years	18-39	330(85.5)	21	24	27	149.5
	40-59	45(11.7)	18	24	26	143.0
	60 and above	11(2.8)	20	22	26	131.0
	p value		0.04*	0.26	0.03*	0.09
Gender	Female	206(53.4)	19	24	27	144.0
	Male	180(46.6)	22	24	27	153.0
	p value		0.00*	0.60	0.53	0.05
Marital status	Without Spouse	208(53.9)	21	24	27	148.0
	With Spouse	178(46.1)	20	24	27	148.0
	p value		0.03*	0.69	0.54	0.78
Occupation	Student	165(42.7)	21	24	27	148.0
	Service	93(24.1)	22	24	27	148.0
	Business	52(13.5)	20	23	27	150.0
	House manager	38(9.8)	16.5	24	26	143.0
	Others	38(9.8)	20	23	26.5	142.0
	p value		0.00*	0.25	0.66	0.63
Chronic illness	No	350(90.7)	21	24	27	148.0
	Yes	36(9.3)	18.5	24	25	143.0
	p value		0.06	0.68	0.08	0.13
Perception of own health status	Good	249(64.5)	22	24	27	151.0
	Average	133(34.5)	19	24	27	143.0
	Poor	4(1.0)	11	20.5	20.5	128.5
	p value		0.00*	0.06	0.00*	0.00*

*Statistically significant

DISCUSSION

Health promoting lifestyle assist individual to prevent disease, promote health, increase longevity and enjoy better quality of life. The present study conducted to find out the health promoting lifestyle during COVID-19 pandemic found that 55.7% perceived to have good health status which is in accordance to a study conducted in Turkey

(55.6%).¹⁵ Majority (90.7%) had no any chronic illness in our study, whereas similar study revealed that only 62% had no chronic illness.¹⁶ This differences can be due to the fact that most of the respondents in our study were young adults, which might be one of the reason for absence of chronic illness in present study.

This study found that the median score obtained from the HPLP II Scale was 148 and the mean score was 149.39, which is slightly higher than the findings of previous studies conducted before pandemic in Nepal, Turkey and Korea (137.6, 137.7 and 135.8 respectively).^{14,15,17} This changes might be due to difference in the context of study conducted as COVID-19 outbreak has led people to focus more on their personal health.¹⁸ However limited researches on similar topic limits the comparability of the findings in current situation. Further, good level of health promoting lifestyle was found among 60.4% which is in accordance to the previous study (61.5%).¹⁹

In subscale analysis, the highest median score was obtained in spiritual growth and interpersonal skills. This finding is in accordance to a study conducted among Saudi adults in present situation, whereby highest mean of 3.09 ± 0.56 with possible range (1-4) was reported.¹⁶ Spiritual practices are often believed to bring peace, healing and fulfilment, which might be one of the reason for spiritual growth during crisis situation.²⁰ Further highest score in interpersonal skills {27(9-36)} can be attributed to onset of global pandemic and the resultant lockdown, that has provided an opportunity for familial bonding.²¹ However highest score of 27(12-36) in this dimension was reported in Iran even before pandemic situation.¹⁵

The lowest score was observed in physical activity followed by stress management in this study. Although these findings are in line with previous studies from Saudi Arabia, India and Germany, it is very alarming.^{16,22,23} Restricted access to outdoor activities, park, fitness centre etc. can be one of the reason for decreased physical activity.²² Yet it is crucial to find ways to be active and reduce sedentary time as physical activity enhances immune function, reduces inflammation, improves chronic conditions and helps in stress management too.²⁴

Further the low score in stress management draws attention in the context whereby total 2218 suicide cases were filed all over Nepal, with an average of 20 killing themselves every day since the enforcement of lockdown.²⁵ Participants' fear of getting infected, social isolation, financial loss along with decrease physical activity might be the reason for low score in this dimension. This implies the need to focus on stress management programme to promote psychosocial wellbeing during this challenging time. This finding is also supported by previous study in India, whereby almost one-fourth participants reported an increase in stress level.²²

The present study found that those who belong to 18-39 years had the highest physical activity score ($p=0.04$). This

might be due to high level of stamina and concern for body image during young adulthood, which is even supported by previous studies carried out before pandemic.^{15,26,27} Further statistically significant difference was observed in age with spiritual growth ($p=0.03$), whereby higher score was found among 18-39 years age group. This finding is surprising and contrast to previous studies from Iran, where higher score was found among 40-64 years age group.¹⁵ Spirituality provides a sense of hope, optimism and also lowers anxiety.²⁰ Additionally leisure time in present situation have allowed people to develop new habits and interest. Which could be one of the reason for increased interest of young adults in spirituality.

In this study, male respondents were found to have highest median score in regard to physical activity ($p < 0.001$), which is consistent with the previous studies.^{15,28,29} This might be possibly due to barriers of family responsibility, parenting demands and gender stereotyping among females.³⁰ Moreover statistically significant differences was found in gender with interpersonal relation ($p=0.01$), which is supported by a previous study in Turkey.¹⁵

Our study found that those who are living without spouse had higher physical activity score ($p=0.03$) which is in line with previous study.¹⁵ But it contradicts with a study from Iran.²⁹ This disparity might be due to difference in socio-cultural pattern. Further statistically significant difference was found in marital status in regard to nutrition ($p=0.04$) which is consistent with the previous study.¹⁵ Moreover, statistically significant difference was found in occupation ($p=0.003$) with regard to physical activity. However difference in this variable was not examined in previous studies.

In regard to chronic illness, statistically significant difference was found in interpersonal relationship subscale. Those who had no any chronic illness obtained higher score that contradicts with the finding of previous study.¹⁵ In this study, interpersonal relationship comprises of maintaining relationship, spending time with close friends, showing love etc. Variation in health and illness behaviour, socio-cultural practices might have resulted in contradictory findings.

This study found statistically significant difference in perception of own health status with total HPLP II and subscale score except in stress management. People who had good perception concerning their health status obtained higher scale and subscale score which is consistent with the findings of previous study among Turkish population.¹⁵

The limitation of the study is that, due to pandemic situation, only those who had internet access and who could fill the online form were included in the study. Further, the information collected was based on self-reporting, so there is possibility of answers to have socially desirable response bias. The findings of the study will be useful for setting priority for intervention regarding health promotion especially in the current situation.

CONCLUSION

The study concludes that only one fifth of the respondents had excellent HPLP II score and the highest subscale score was observed in spiritual and interpersonal relationship skill. While the lowest was observed in physical activity followed by stress management and nutrition subscale. Besides focusing on precautionary measures through mass media, it is equally important to create awareness regarding health promoting lifestyle behaviour to fight this pandemic situation. Therefore, emphasis must be placed on indoor physical activities such as yoga, meditation, deep breathing exercises along with balanced diet to promote physical and psychosocial wellbeing in current situation. Special consideration should be given to female and elderly population.

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REFERENCES

1. The foundation for peripheral neuropathy. Maintaining a Healthy Lifestyle. (cited on 6th June, 2020) Available from <https://www.foundationforpn.org/living-well/lifestyle/>
2. World Health Organization. Health and development. (Cited on 6th June) Available from <https://www.who.int/hdp/en/#:~:text=Better%20health%20is%20central%20to,health%20services%20for%20its%20peopl>.
3. Jadhav VV. Health education: during lockdown. *J Phys Educ.* 2020; 7(2): 143-6. DOI: 10.22271/kheljournal
4. Di Renzo L, Gualtieri P, Pivari F, Soldati L, Attinà A, Cinelli G, et al. Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of Translational Medicine.* 2020 Dec;18(1):1-5.
5. Ghosh A, Arora B, Gupta R, Anoop S, Misra A. Effects of nationwide lockdown during COVID-19 epidemic on lifestyle and other medical issues of patients with type 2 diabetes in north India. *Diabetes Metab Syndr.* 2020 Jun 2;14(5):917-920. doi: 10.1016/j.dsx.2020.05.044. Epub ahead of print. PMID: 32574982; PMCID: PMC7265851.
6. Jackson SE, Garnett C, Shahab L, Oldham M, Brown J. Association of the COVID-19 lockdown with smoking, drinking and attempts to quit in England: an analysis of 2019–20 data. *Addiction.* 2021 May;116(5):1233-44.
7. Cloete S. Behaviour Change: Covid-19 lockdown kicks open the door to a net-zero pathway. *Energypost.eu* 2020 April 14. Available from <https://energypost.eu/behaviour-change-covid-19-lockdown-kicks-open-the-door-to-a-net-zero-pathway/>.

8. Safefood. Available from <https://www.safefood.eu/Healthy-Eating/Food-Diet/Food-and-health.aspx#:~:text=on%20your%20health>.
9. World Health Organization. Healthy at home; healthy diet.
10. Available from <https://www.who.int/campaigns/connecting-the-world-to-combat-coronavirus/healthyathome/healthyathome-healthy-diet>
11. Simkhada P, Mahato P, Tamang P, Van Teijlingen E, Shahi P. The Role of Health Promotion during the COVID-19 Pandemic. *Journal of Health Promotion*. 2020 Nov 20;8:1-4.
12. Panta PP. Biostatistics. Kathmandu, Nepal: Vidyarthi Pustak Bhandar 2012.
13. Wikipedia. Gandaki Pradesh. Available from https://en.wikipedia.org/wiki/Gandaki_Pradesh
14. Walker SN, Sechrist KR, Pender NJ. Health promotion model-instruments to measure health promoting lifestyle: Health-promoting lifestyle profile [HPLP II] (Adult version) 1995.
15. Baral P, Tamrakar N. Health Promoting Lifestyle among Nurses of a Tertiary Level Hospital. *Journal of Karnali Academy of Health Sciences*. 2020 Apr 12;3(1).
16. Aygar H, Zencirci SA, Emiral GO, Alaiye M, Soysal A, Onsuz MF, Isikli B, Metintas S. Assessment of health-promoting lifestyle behaviors of adults living in the semi-rural area. *North. Clin. Istanbul*. 2019;6(1):13.
17. Ashgar RI. Health-promoting behaviour during the COVID-19 pandemic among Saudi Adults: A cross-sectional study. *Journal of Advanced Nursing*. 2021 Apr 24. <https://doi.org/10.1111/jan.14863>
18. Bhandari P, Kim M. Predictors of the health-promoting behaviors of Nepalese migrant workers. *J Nurs Res*. 2016 Sep 1;24(3):232-9.
19. <https://www.businesswire.com/news/home/20200730005304/en/COVID-19-Moves-People-to-Focus-on-Their-Personal-Health> (Cited on 21st August 2020)
20. Baygi F, Jensen OC, Mohammadi-Nasrabadi F, Qorbani M, Mansourian M, Mirkazemi R, et al. Factors affecting health-promoting lifestyle profile in Iranian male seafarers working on tankers. *International maritime health*. 2017;68(1):1-6.
21. <https://blog.loukavar.com/2012/06/21/spirituality-and-difficult-times-in-life/>(Cited on 8thJuly, 2021)
22. Desai S. How the lockdown is cementing relationships and bringing families together. 14th may, 2020 Available from <https://timesofindia.indiatimes.com/life-style/spotlight/how-the-lockdown-is-cementing-relationships-and-bringing-families-together/articleshow/75731732.cms>
23. Chopra S, Ranjan P, Singh V, Kumar S, Arora M, Hasan MS, et al. Impact of COVID-19 on lifestyle-related behaviours-a cross-sectional audit of responses from nine hundred and ninety-five participants from India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*. 2020 Nov 1;14(6):2021-30.
24. Steffen J, Schlichtiger J, Brunner S, Huber BC. Health promoting behaviour of medical versus non-medical students during COVID-19 pandemic: results from the COLA cross-sectional study. *Journal of Translational Medicine*. 2021 Dec;19(1):1-5.
25. World Health Organization. Healthy at home-Physical activity.
26. Available from <https://www.who.int/news-room/campaigns/connecting-the-world-to-combat-coronavirus/healthyathome---physical-activity>
27. Suicide cases on the rise, mental health experts warn of a 'grim situation'. 2020 May 21;7. Available from <https://myrepublica.nagariknetwork.com/news/at-least-20-people-committed-suicide-every-day-during-lockdown/>.
28. Greenthal S. Body image and your young adult. 2019 august 8. Available from <https://www.verywellfamily.com/body-image-and-young-adults-4118371>
29. Pedisic Z, Shrestha N, Loprinzi PD, Mehata S, Mishra SR. Prevalence, patterns, and correlates of physical activity in Nepal: findings from a nationally representative study using the Global Physical Activity Questionnaire (GPAQ). *BMC public health*. 2019 Dec 1;19(1):864.
30. Paudel S, GC KB, Bhandari L, Arjyal A. Health related lifestyle behaviors among undergraduate medical students in Patan Academy of Health Sciences in Nepal. *Journal of Biosciences and Medicines*. 2017 Aug 23;5(9):43-53.
31. Mehri A, Solhi M, Garmaroudi G, Nadrian H, Sigaldehy SS. Health promoting lifestyle and its determinants among university students in Sabzevar, Iran. *International journal of preventive medicine*. 2016;7.
32. Physical activity for women. Better Health Channel. (cited on 20th September, 2020) Available from <https://www.betterhealth.vic.gov.au/health/healthyliving/physical-activity-for-women>