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***Corresponding author**

Dr. Sangita Maharjan
Head; Department of Roga Nidana Evum
Vikriti Vigyan
Ayurveda Campus & Teaching Hospital
Institute of Medicine, Tribhuvan
University, Kirtipur, Kathmandu, Nepal
Email: sangitamaharjan015@gmail.com

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Ayurveda Practitioners' Adaptation of Variation in Service Approaches During COVID-19 Pandemic in Kathmandu, Nepal

Sangita Maharjan^{1*} and Gajendra Adhikari²

¹Head; Department of Roga Nidana Evum Vikriti Vigyan, Ayurveda Campus & Teaching Hospital, Institute of Medicine, Tribhuvan University, Kirtipur, Kathmandu, Nepal

²Lab officer, Department of Roga Nidana Evum Vikriti Vigyan, Ayurveda Campus & Teaching Hospital, Institute of Medicine, Tribhuvan University Kirtipur, Kathmandu, Nepal.

ABSTRACT

Background: COVID-19 declared global pandemic created various impact on different aspects of life, medical fraternity and economy worldwide. With its ever changing viral features, COVID-19 then had become a real hard time challenge to the world medical fraternity in finding out the appropriate measures to control it. The world adopted various measures to control its spread, preventive measures against COVID-19 proved to be an effective measure to content it. Health care systems were challenged as they were potential hub for contracting COVID-19 and at the same time overwhelmed by COVID-19 patients. Health practitioners had to follow safety guidelines in order to prevent the spread, protect themselves and at the same time provide the health service to the people. The objective of the study was to identify various methodological variations adopted by Ayurveda practitioners to provide Ayurveda services during the COVID-19 pandemic.

Materials and Methods: The research method adopted was quantitative, descriptive cross-sectional study. A well- developed online questionnaire was formed and circulated through Whatsapp, messengers and email among Ayurveda practitioners of Ayurveda Campus Teaching Hospital, Nardevi Ayurveda Hospital and National Ayurveda Research and Training Center (NARTC) Kirtipur.

Results and Discussion: Implementation of safety protocols, adoption of sanitization methods and procedural modification in consultation and OPD based services were practiced by Ayurveda practitioners during COVID-19 in order to deliver Ayurveda Health Service.

Conclusion: The continuity of OPD based services were maintained considering safety protocols, sterilization methods and modifications in delivering consultations and OPD procedures.

Key words: Ayurveda, COVID-19, Service modification, health services

INTRODUCTION

COVID-19 is now an established and ongoing health issue which no longer constitutes a public health emergency of international concern as stated by WHO recently, but the year 2019-2022, the world was hard hit by COVID-19 pandemic. In December 2019 the first case of COVID-19 was identified and in January 2020, scientist became aware that COVID-19 was transmittable. Slowly the cases of COVID-19 began to rise globally claiming human mortality. Then in March 2020, WHO declared it a global pandemic. The countries began to restrict travel. Until the discovery of effective vaccines; lockdown, isolation and social distancing proved to be the best measures to content the spread of COVID-19. The COVID-19 pandemic had detrimental effect on health, health care system, social, global economy.

Health care system was challenged. On one side, the preventive measures proved to be effective to content the viral spread and reduce the number of infected cases but locally imposed curfews, transportation closure and stay at home orders significantly reduced the utilization of health care systems. Less urgent services were either cancelled or postponed. People avoided health centers and hospitals for fear of becoming infected.

On the other side, the rising cases of COVID -19 overwhelmed hospitals. Health service areas being the potential hub for transmission of corona virus required to have adopted procedural modification in existing service delivery method to provide service to health care seekers.

The direct reference of COVID-19 is not found in Ayurveda, but the description of epidemics can be related to *Janapadodhwansa* (Epidemics). Ayurveda advocates preventive and curative measures to deal with any disease including infectious disease. Preventive measures includes following *dincharya* (daily regime), *ritucharya* (seasonal regime), regular *sodhana* (bio purifications) and intake of *rasayana* (rejuvenatives) to enhance *vyadhikshmatwa* (immune system). It is also stated that a physician should collect and prepare the herbs before the rise of epidemics.¹

Ayurveda Teaching Hospital, Kirtipur; Nardevi Ayurveda Hospital, National Ayurveda Research and Training Center, Kirtipur (NARTC) are the three main Ayurveda service providers of Kathmandu besides private setups. On pre-COVID phase, these centers had been providing their outpatient department (OPD) and in patient department (IPD) services. The common services provided by these three centers include regular OPD service with consultation and OPD based procedures of respective specialties. *Kaya –Chikitsa* (General Medicine), *Shalya* (Surgery), *Shalakya* (Ophthalmology and ENT), *Striroga Prasuti* and *Bala Roga* (Gynecological and Obstetrics, Pediatrics), *Swasthavritta* (Social and Preventive Medicine) and *Pancakarma* (Detoxification procedures) are the regular OPDs providing the service. Except for emergency health condition, these centers provide Ayurveda services to wide range of health ailments of different age group. The OPD based procedures include *Purva karma* (Pre-procedures) of *Pancakarma* which include different *Snehana* (Oleation) and *Swedana* (Sudation) procedures. The *Shalya* OPD provide *Kshara sutra* dressing on OPD basis and *Kshara sutra* operation on IPD admission. The various therapeutic procedures of eyes, nose and ears are provided through *Shalakya* OPD. *Yoni Prakshalana*, *Yoni Pichu* and *Uttara basti* are procedures provided by *Stri Prasuti* OPD. The *Pradhana karma* (5 major detoxification procedures) of *Pancakarma*, *Kshara sutra* operation and management of various disease through *Pancakarma* are done under IPD services. Majority of these therapeutic procedures require close monitoring and close contact with the patients. Social distancing as preventive measure for COVID-19 has made it difficult for these procedures to be conducted.

Among the three centers National Ayurveda Research and Training center, Kirtipur was one of the government authorized isolation

and care center for COVID-19 cases. Later, Nardevi Ayurveda Hospital was also permitted to manage mild to moderate cases of COVID-19 positive cases. Despite, limitation in managing COVID-19 emergencies, Ayurveda fraternity had taken initiative in bringing a Protocol for COVID-19 management. The guidelines developed by Ministry of Health and Population, Ayurveda and alternative medicine department advocates the preventive and curative management of COVID- 19 in categorical manner. The efforts made by NARTC team in managing COVID-19 with Ayurveda medicine created positive impact on general people regarding Ayurveda medicine in COVID-19. As a result, visible flow of service seekers was evident in Ayurveda centers and shops seeking for immune boosting Ayurveda measures to combat COVID-19. Though, less in number there were people visiting Ayurveda Centers for regular COVID as well as post COVID management.

Social distancing, making changes in working shifts, isolation, donning personal protective equipment (PPEs), following hand sanitization, prescribing medications for longer durations were some of the methods adopted by health care providers during COVID-19 to deliver health services. OPD and IPD based services provided by Ayurveda centers required close contact with patient. Thus, the research aimed to study variation in service delivery method adopted by Ayurveda practitioners in providing Ayurveda services during the period of COVID-19 pandemic.

MATERIALS AND METHODS

The study was carried out in Ayurveda Campus and Teaching Hospital Kirtipur, NARTC, Kirtipur and Nardevi Ayurveda Hospital, Kathmandu. These three are the main responsible organizations delivering Ayurveda services in Kathmandu. This was a descriptive, cross sectional study. The sampling method adopted was non probability purposive sampling.

A questionnaire was developed which assessed methodological variation adopted by practitioners under three major headings, viz implementation of safety protocols, sanitization methods adopted and procedural modification. Panel discussion was conducted to validate the questionnaire. The questionnaire was pre-tested among few practitioners from other Ayurveda centers before conducting the survey. The questionnaire was then circulated through online media like whatsapp, viber, and messenger among Ayurveda Practitioners of Ayurveda Campus Teaching Hospital, Nardevi Ayurveda Hospital, Nardevi and NARTC, Kirtipur. The participants were briefed about the study, aims and objectives and voluntarily asked for participation in the study. The data analysis was done using descriptive statistics.

The ethical approval was taken from Institute of Medicine, Teaching Hospital, Maharajgunj for the study. The research was funded by Research Directorate, Rector's office, Tribhuvan University, Kirtipur, Kathmandu, Nepal. The study was conducted during second wave of COVID-19 pandemic Jan- June 2021 in Nepal. The duration of the study was six months.

RESULTS

The total number of participants were 16 from all three study area. All the three Ayurveda centers were functional and providing OPD services during COVID-19 pandemic. The OPD services ranged from partial to full functioning whereas all the three centers had suspended their regular IPD services. The NARTC served as a government recognized COVID isolation center since first wave and Nardevi Hospital provided service to COVID patient during second wave. Consultation as well as OPD based procedures were provided by 69% of the running OPD whereas 25% provided only consultation as an OPD service. The laboratory services were functional, providing service only to most needed cases during phase of strict lockdown. The dispensary services within the hospital premise were open during entire phase of pandemic, as there were no restriction for opening dispensary. Among health care seekers 48% were non COVID cases, whereas 30% were post COVID cases and 21% were COVID positive cases.

The variation in service approach adopted by practitioners were studied under three major headings, viz implementation of safety protocols, sanitization methods adopted and procedural modification for non COVID and post COVID cases.

Safety Protocols: The safety protocols followed were studied under screening of patient before entering OPD, method of screening of patient, use of safety tools such as mask, gloves, face shields, PPEs.

It was found that the screening of patient before entering OPD were not done regularly (50%), strictly done (44%) and not done at all (6%). However, when the screening was done, temperature assessment with thermal gun (50%) and symptomatic assessment of COVID-19(50%) was carried out.

Among the various safety tools used, all the participants used mask. Gloves was used by 88%, Face shield was used by 69% and PPE gowns were used by 25%. All the three centers provided mask and gloves to the practitioners. Most of the practitioners used commonly available surgical mask (63%), while 3 layer surgical mask and N-95 mask were used by 25% and 12% respectively.

It was found that all the participant practitioners (100%) used mask continuously through duty hours. Gloves were used by practitioners mostly only when needed (75%), while 12% used throughout duty hours and 12% did not use it at all. For the use of face shields by practitioners, 69% used it only when needed, whereas 19% did not use it at all and 12% used it continuously throughout duty hours. PPE gowns as safety tool were not used by majority of practitioners (63%), while 37% used it when needed as shown in fig 1.

Sanitization Materials and Methods: The sanitization methods used were studied mainly under hand sanitization and sterilization procedure. Among the sanitization methods, mostly hand sanitizer (54%) were used while hand washing with soap and water were

practiced by 46%. Sterilization after each patient were followed strictly by 37%, most of the time it was irregular (50%).

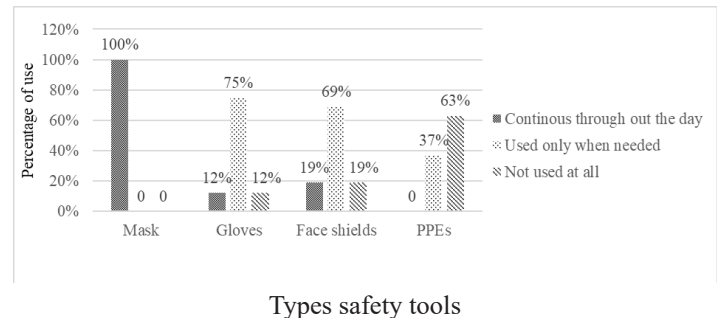


Fig 1: Different safety tools used by Ayurveda Practitioners

Procedural modification: The procedural modification were studied under the modification adopted in consultation and OPD based procedures.

The procedural modification adopted in consultation were studied with regulation of flow of patient, maintenance of social distance, number of people in room, duration, method of patient report evaluation, physical examination, follow up policy, medicine prescription policy and provision of online consultation.

There was no regulation of patient flow regarding number per shift. As a safety measure, physical distance of two meters between Consultant and patient were maintained strictly by 81%. Along with a consultant and patient in 69% of OPD an interneer was present, in 19% of cases only consultant and patient were allowed in OPD. Majority of the practitioners (63%) spent less than 20 minutes with patient, while in 37% cases the time duration spent were more than 20 minutes. Evaluation of various reports brought by patient were evaluated using gloves by 52% of practitioners, while 35% of practitioners did not touch the reports brought by patient and 13% of practitioners allowed patient to read out their reports instead of touching.

Most of the practitioners carried out physical examination only when needed as part of routine consultation following safety measures, 19% assessed only through questions without touching, 13% carried out regularly using safety measures while 12 % of practitioners did not carry out in any patient.

Duration for follow up were prolonged by 88% of practitioners, while 12 % maintained it similar to pre-COVID phase. To reduce the frequency of visits, 81% of practitioners prescribed the medications for longer duration while 19% maintained it as similar to pre COVID phase.

Online consultation was practiced by 19% of practitioners while majority (81%) did not have provision of online consultation.

Procedural Modification: The procedural modification adopted by *Pancakarma*, *Shalya*, *Shalakya* and *StriPrasuti* OPD were evaluated. Variation in providing OPD based procedures were studied under following parameters: completely suspended,

carried out with safety protocols, postponed till situation becomes favorable, managed with oral medications, and managed with home based procedures.

Pancakarma procedures were completely suspended by 35% and carried out with safety protocols by 15%. In 20% it was postponed till situation become favorable, while 25% managed with oral medication and 5% managed with home based procedures.

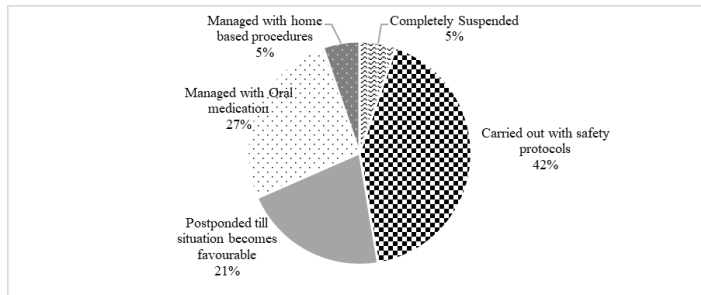


Fig 2: Modification in Shalya OPD procedures

Shalya OPD procedures were carried out with safety protocols by 42%, 27% managed with oral medication, 21% postponed till situation became favorable as shown in figure 2.

Shalakya OPD procedures were completely suspended by 32%, postponed till situation becomes favorable by 26%, managed with oral medication by 21% and managed with home based procedures by 11%.

Striprasuti OPD procedures were postponed till situation become favorable by 33%, 27% carried out with safety protocols, 20% managed with oral medication and 20% completely suspended.

DISCUSSION

During the phase of COVID-19 Ayurveda centers received COVID positive, Non COVID as well as Post COVID cases. COVID positive cases were treated in isolation centers. Due to the nature of COVID virus and claiming mortality regular services was interrupted. Along with contemporary health system, Ayurveda health centers also needed to adopt modification in service delivery method in order to continue Ayurveda health service. Screening of patients, sanitizations, adopting safety protocols were few modifications adopted by health care workers to content the spread and protect oneself from contracting COVID-19.

The study suggested that as a safety protocol patients were screened symptomatically for COVID-19. The safety tools used by practitioners were mask, face shields, gloves and PPE gowns. The use of mask during the entire period of the duty was commonly followed by practitioners.

As a precautionary method screening desks for COVID-19 were put in the entrance of public places like health care centers, departmental stores, banks, etc. These screening desks screened the people entering the area through symptoms assessment

through quick questioning and through the temperature assessment using thermal gun. Fever or chills, cough, shortness of breath, fatigue, body aches, headaches, loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, diarrhea are the commonly reported symptoms of COVID 19.² Temperature above 104 0 F, respiratory symptoms like shortness of breath, sore throat, congestion or runny nose were taken into consideration for screening.

WHO indicates surgical mask, non - surgical masks, gloves, goggles, face shields, gowns and N-95 masks as personal safety tools for health care workers. Traditionally, these personal protective instruments were used only when performing medical procedures but now due to pandemic these safety tools have become necessity of each health worker. A prospective cohort study on effectiveness of personal protective equipment in preventing severe acute respiratory syndrome coronavirus-2 infection among healthcare workers who worked in close contact with patient with SARSCoV-2 infection concluded that appropriate PPE is sufficient to prevent infection among health care workers.³

Wearing mask in public is essential to prevent spread of COVID-19. Various studies show 70 to 99% effectiveness of different kinds of mask in preventing the spread of COVID-19. A study on effectiveness of mask concluded that correctly wearing masks of all kinds, despite their different designs, functions and effectiveness, will to a large degree reduce the overall risks of COVID-19 infection and enhance general protection from coronavirus.⁴ The mask should be worn throughout the duty shifts and within the working area by health workers.⁵ As the transmission of COVID-19 occurs through air droplets, use of gloves and face shields protect the practitioners from direct contact with patient's body and aerosols from patient, thus reducing the chances of contracting the corona virus.

In this study hand sanitizers was mostly practiced compared to hand washing with soap and water. Disinfection of the surface in contact to patient were practiced irregularly.

Sanitization methods practiced included use of sanitizer or hand wash with soap and water. Centers for Disease Control and Prevention (CDC) advocates that the best way to prevent the spread of infections and decrease the risk of getting sick is by washing hands with plain soap and water. Washing hands often with soap and water for at least 20 seconds is essential, especially after going to the bathroom; before eating; and after coughing, sneezing, or blowing one's nose. If soap and water are not available, CDC recommends use an alcohol-based hand sanitizer that contains at least 60% alcohol.⁶ Decoction of *Neem* leaves, *Tulsi* leaves, *Ghrதாகumari* (Aloe leaves), *Titepati* (Artemisia leaves) and dry *Lasun* (Garlic) mixed with 1 gm of *Phitakiri* (Potash Alum) powder in each 100 ml of decoction can be used as sanitizer, body cleansing and floor cleaners or natural disinfectant.⁷

Sterilization process after each patient included brief cleaning of surface area that came in contact with patient with disinfectant. A

review of the survival of human corona viruses on surface found large variability, ranging from 2 hours to 9 days. The contaminated surface could cause infection when touching eyes, nose or mouth without cleaning hands. Methanol, chlorine spray and fumigation were different methods of disinfectants used. Sodium hypochlorite, detergent, disinfectant solutions can be used for sterilization.⁸ Irregularity in sterilization after each patient may be due to lack of manpower as minimizing the manpower was also one of the way to avoid the spread of COVID-19.

Ayurveda health centers and practitioners adopted procedural modification for consultation and OPD based procedures.

Minimization of crowd is one of the safety protocols. As the flow of patient was already decreased during the pandemic, there was no need of regulation of patient flow in OPDs. Physical distance of 2 meters was maintained strictly by most of the practitioners to reduce the possible chances of contracting coronavirus. Evidence suggests that the virus spreads mainly between people who are in close contact with each other, typically within 1 meter (short-range). A person can be infected when aerosols or droplets containing the virus are inhaled or come directly into contact with the eyes, nose, or mouth as the aerosols remain suspended in the air or travel farther than 1 meter (long-range).⁹

It was found that to reduce the possible crowding in OPDs, only consultant and patient were allowed. In centers as Ayurveda campus teaching hospital and in Nardevi Ayurveda Hospital, interneers were present in addition. Consultation time was limited to < 20 minutes for each patient to reduce exposure time. The risk of contracting COVID -19 is high when people are in close contact within 6 feet for 15 minutes or more.¹⁰ The reports brought by patient were evaluated using gloves. Most of the practitioners carried out physical examination only when needed as part of routine consultation following safety measures. Both of these measures reduced the chance of contracting COVID-19.

The medications prescribed for longer duration and follow up was prolonged. A report by CDC on maintaining essential health service during COVID-19 in low resource, Non-US settings proposed various modifications of service delivery to maintain essential non COVID-19 services.¹¹ Modification in service access included determining which essential health thirty seven service to continue, screening of patient for COVID-19, ensuring hand hygiene, appropriate use of PPEs, regular cleaning and disinfection. Modification of clinic space included maintaining distance of 2 meters, and managing waiting area. Modification in service delivery included minimizing patient contact with health care workers, lengthen time between appointments, use of telemedicine, and prolong dispensing of medications for stable patient.

The practice of online consultation was found to be minimum. Despite accelerating digitalization during COVID-19, telemedicine

had few barriers and challenges Poor internet connection and lack of universal access to technology were among the technical barriers. Patient and healthcare personality both had to be technology friendly. Physical examination and certain procedures were impossible to perform via telemedicine.¹²

Pancakarma and *Shalaky* OPD procedures were suspended, while *Shalya* OPD services were carried out with safety protocols. *Striprasuti* OPD service were postponed until situation becomes favorable. The OPD based procedures were also managed with home base procedures, or either with oral medications depending upon the condition.

The study was limited to three Ayurveda health centers, further the study can be conducted in both government and non-government Ayurveda centers across Nepal.

CONCLUSION

The study concludes that during the time of COVID-19 pandemic, Ayurveda practitioners continued to provide OPD services and few of OPD based procedures to non-COVID health seekers by adapting safety protocols, sanitization methods, modifying its service delivery method.

CONFLICT OF INTEREST: Nil

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