

## Library Operation during COVID-19 Pandemic

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**Abstract:** A library is considered as the 'heart' of an educational institution and it is the centre of learning for primary to higher education system. Due to the COVID-19 pandemic, the library operation has been restrained due to safety issues of the users and library staffs. A questionnaire survey was carried out using Google Form virtual platform from the top administrators of the libraries spread over India. Around 138 responses were received during the survey. The survey data were collected in Google spreadsheet and stored in MS Excel platform for further analysis.

The normal precaution measures such as social distancing, using sanitizer and face mask etc. need to be followed during library operation. The use of face shield, head cover, PPE kit etc. may be provided for the front desk and security personnel. The return books should be sanitized through isolation, UVC box technique, and home delivery system may be used during the pandemic.

The vast virtual resources and online classes etc. should be explored and may be channelized to the users through libraries. The remote access of library and other resources login password, remoteXs service, IP authentication etc. may be allowed to users for reducing frequent visit to the library. The virtual resources can also be created at the library by the faculty members of the university for their students and users. Online examination and evaluation may be promoted by the libraries during the pandemic situation. The library floor design may be revised to maintain space between the users using mobile reading table with acrylic separation bars, acrylic sneeze guards, desk separators, front desk barriers, cough screens etc. in the library.

**Keywords:** COVID-19 pandemic, Library operation, UVC box, RemoteXS, Library floor spacing

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### 1. Introduction

Library has been playing an important role in shaping our society since long time. The importance of library is unquestionable for students, teachers, researchers, leaders and common man. Modern libraries are crossing the boundaries of old book stalk and bound volumes to unrestricted access of information from various sources and in many formats. They are expanding their services providing material accessible by electronic means, and by providing the assistance of librarians for remote access of very large amounts of information with a variety of digital resources. During this COVID-19 pandemic it is very hard to open the libraries. However it is required to provide information services to the users. Therefore, we need to know how we can continue library services during this pandemic. Again, if authority takes decision to open the library, then what should be the precautionary measures during this pandemic? However, the library operation is very

important for creating smooth teaching-learning environment in the educational institution.

The terms digital library and virtual library are used to refer to the vast collections of e-resources to which people gain access remotely (Ogunsola, 2011). Even in some educational institutions, librarians have assumed responsibility of computer and internet service along with library resource collection and circulation (Ogunsola, 2011). The academic libraries assumed the responsibility to provide access to the relevant resources and study materials for the teachers and students, from which teaching and learning could develop (IGNOU, 2020). Digital libraries, as new generation information entities, allow stakeholders to access digital information resources in virtual form from anywhere at any time (Mukhopadhyay, 2007; Liu, 2007). Electronic library or digital library is the gift of modern technology which enriched the field of library and information science and the accessories we use in these libraries are CD-ROM, DVD, pendrive, external hard discs, multimedia computers etc. and now the Internet (Jainamma and Paul, 2000). Selective Dissemination of Information (SDI) services, in which, librarians select new and relevant information fulfilling the future demand of the users forward it to them before they even request for it (Ferguson and Hebels, 2003).

It was found that the new respiratory diseases caused by a novel virus, which is generally known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2); or 2019 novel Coronavirus (COVID-19). This COVID-19 infection spread throughout the world, leading to the World Health Organisation declaring it a global pandemic on March 11 2020. In an effort to restrict the spread of this disease, many governments across the world enforced 'lockdowns' of varying degrees. The lockdown came into force at midnight on 24th March 2020 which was enforced for 21 days (Mishra et al., 2020) initially and later extended step-by-step. In India, the government put in place a total lockdown since March 2020 and now we are in unlock phase in between. The role of university librarians in this emergency included raising awareness through public health education, providing support to medical staff, researchers and providing ongoing, traditional services to regular library patrons in Pakistan. The regular feature also includes providing links to useful resources (Ali & Gatiti, 2020).

There is still big question of, how to reopen a library with no guidelines or best practices to work from? However, despite the many challenges, library workers are eager to reconnect with their patrons. Some are starting with no-contact services. Others have set time limits for customers to enter buildings and use computers. All are figuring out ways to balance a deep commitment to serving their communities along with keeping staff and patrons healthy (Freudenberger, 2020). Some libraries are already attempting to reopen their physical locations to the public, at least to some limited extent. Others, in harder hit areas or with local governments more focused on stopping the spread of Coronavirus, are still months away. But all are considering how to reconfigure their space, as well as their service, to best shield staff and patron health. There is still many gray areas where we need to plan and improve (Markovic and Zettler, 2020; Samanta, 2020). With the unlocking to carry out, library will be open soon, and we have to think about its

operations, safety measures allowing knowledge access and sharing. The library staffs and management people and experts can guide to take various measures during opening of libraries for public.

The purpose of this research work is to analyze the threat of pandemic to library operation, status of post pandemic re-opening of libraries and what measures we should be taking to prevent re-infection and spread of viral diseases like COVID-19 ensuring safety of users and library staff. The objective of the study also explores the steps to disinfect and isolate the books and circulation materials.

Looking at the current pandemic situation around India and world safety measures for opening and using the library resources get the utmost important. The study will include the suggestions of the experienced person and experts involved in the LIS domain to prepare a road map for library operations. The study also explores the means to tap the available virtual resources and guides the users to get them easily. It includes the potential of virtual teaching learning process and assist the users to prepare, store, distribute and update them.

## **2. Methodology**

### **2.1. Techniques used**

In this study, we have used mainly two methods namely survey research method and desk research method. In survey method, we have designed a questionnaire. The questionnaire is the main instrument for collecting data in survey type research work. Basically, it is a set of standardized questions, often called *items*, which follow a fixed scheme in order to collect individual data about one or more specific topics (Hassine, Amyot, 2016) for selected group of respondents. In the present study, we have used online mode to send questionnaires and collect data. The survey in online mode supports quick analysis of responses, systematic comparison of data and fast dissemination of results in to the group (Quirk, 2008). Later the data collected through this questionnaire is analyzed and interpreted. In desk research method we have collected information and data from the published literature on the topic and based on these data a conclusion is made.

A questionnaire survey was carried out using Google Form virtual platform from the top administrators of the libraries spread over India. Around 138 responses were received during the questionnaire survey. The survey data were collected in Google spreadsheet and stored in MS Excel platform for further analysis.

### **2.2. Selection of platforms**

Generally, questionnaire survey carried out offline mode, by meeting the respondents' one to one basis and collecting as much as information for the research works. Sometimes the survey collectors guide the respondents, how to attend specific enquires and support in give free and fair responses. The survey collector also takes note of the surrounding situation and basic information to be incorporated during the research work later. Here, the surveyors have to physically travel certain distance to meet the respondents belong to certain profession, resident to certain area using specific languages etc. So, the surveyor needs to prepare himself/ herself for the consequences.

However, with modern technology and fast society, people have little time to meet each other and discuss the issues. So, virtual platform is gaining popularity for carrying out questionnaire surveys in recent times. Various software platforms are such as Google etc. available to prepare the questionnaire and forward to the respondents. Even commercial surveyors are also available to carry out various surveys related works. During the Pandemic, there was restriction on movement of people. Only the essential travel was encouraged to keep oneself distant from the COVID 19 infection. The survey of library operation during COVID-19 pandemic was essentially carried out using virtual platform of Google form. Depending on number of respondents targeted, free service of Google form was used for the survey work.

### **2.3. Selection of respondents**

The survey is concerned about the operation of library, creation and distribution of library resources during the restricted movement of pandemic. So, the stakeholders of the study could include the library staff, administrators and library users etc. As users are staying away from the libraries during the lockdown and most of the libraries are closed partially or fully. So, getting suitable users and taking their feedback is nearly impossible for virtual surveys. As little planning was done before the pandemic situation arrived for conducting the research work. So, one of the major stakeholder, the users are not included in the survey work. Additionally, most of the users look for a situation which is suitable for them only, which may be out of reach for the libraries to maintain. Also, sometimes, the users also not sure about their specific requirements, and prefer to stay away from the source itself. Somehow, the survey did not include the common users for this research work.

The various operations of library were generally decided by the middle higher group of staffs of library, to carry out particular steps for improvement. They coordinated the requirements of the users with the decision making authority and followed up the measures proposed by the authority. They also have firsthand experience of library operations, its scope and drawbacks. The lower library staff executes the proposed steps with little control over decision making. So, the middle to higher management groups of the library were selected to be approached for the survey work through the Google virtual platform. The libraries of various universities and education institutions and public libraries were targeted for the survey work. Their corresponding emails were collected through various means, such as official websites, contact information directory, personal phone calls to the helpdesk of particular institution, webinar platforms etc.

### **2.4. Selection of questionstowards designing questionnaire for survey**

The questionnaire is very important to carry out the research work and find guidance on the hypothesis of opening the library during the pandemic. So, for our knowledge, who should enquire about the status of the library operation during the pandemic so far. The status of library could be fully operational, only e-resources circulated or fully closed during the lockdown period.

### ***Safety measures for general library operations***

We also like to get suggestion on various precautionary measures may be carried out to operate library during this pandemic situation. As we know, few precautions need to adhere ensuring safety of the users as well as the library staff. As per general guidelines of WHO, the researcher coined few options for the respondents such as maintaining social distancing, wearing mask and frequent use of sanitizer, disinfect service area time to time, thermal scanner during entry of users and staff, installation of sanitizer tunnel etc.

More important issue of library operation is to ensure the safety of library management staffs, general operation staffs, maintenance staff and others. This issue has been included in the survey questionnaire for making foolproof guidelines for safety of the staffs. Along with the above issues, we should follow the WHO guidelines for office operations. Precaution measures such as face shield along with face mask for the library staffs. Along with these PPE kit may be recommend for front desk personnel and securities as they are more prone to COVID-19 infections. Full sleeve dress, gloves and goggles can be made compulsory for the library staff as it can be obtained at affordable prices ensuring better safety.

Handling the returned material in a library is a major issue during the COVID-19 crisis, the material may come in contact with many people. Additionally, the material may be on demand for re-circulation in short time. The safety of the library staff and the next user need to be ensured through suitable precautionary measures. The researchers proposed some of the measures such as sanitization of material during receive at the circulation desk, quarantine of the material for elongated time period, disinfect the material by using ultra violet light based UVC box for quick sanitization. Quarantining the material for a period will automatically disinfect the material before it goes for recirculation. This will reduce the cost of disinfection, though the material may go out of stock for some time. The use of modern technology such as UVC box for quick sanitization may be used, which is still in development stage. As claimed, the UVC box sanitizes 360 degree coverage killing 99.99% germs with and operation time of 30 seconds. Small systems can clean up to six books per batch with a time span of 30 seconds. Even the UVC can be used for killing germs from mobile phones (Joy, 2020). There may be some side effects on material lifespan and safety for library staff involved in using the system. The UVC box may raise financial burden on the libraries. We also asked for suggestion to enhance the safety during return of the library materials from the users.

Library floor architectural design need to be revised for safe library operations under the threat of COVID-19 pandemic. We have to reduce congestion and give more space between different library infrastructures such as book stalk, reading table, front desk, attendance system etc to have suitable space between the users, staffs and staff-user during library operations. Some of the facilities may be restricted or closed for the time being. As reading table is an important requirement for the users to accesses the materials, ample space may be maintained between two tables with mobility option, acrylic barriers may be used to separate two users. Reading room service offering group activity may halt in the library. We look for suggestion from the respondents on the

measurers such as mobile reading table, floor decals with arrow floor clings, health shield pass through windows etc.

The status of different basic library operation may be revisited keeping safety issues on the tables. The operations like circulation of frequently used material such as news papers, magazines, leaflets etc. may be discontinued or covered glass shield or touchless operation somehow introduces. The operations may go to virtual mode for ease of access by the users. Normal circulation service may be user operated or automatic mode for safe operations. This may include, reference service, open access of stalks, access of rare books and old manuscripts etc. for special attention during pandemic situations. Time of operation may be allocated based on the services and user types. Libraries may introduce time schedule for different discipline in academic library, and for different age groups of users in public libraries to reduce rushes. Evening operation of libraries may be curtailed as their chances of power failure, transportation and weather issues.

Now a day, we are depending on home delivery of essential as well as non essential goods to reduce frequent visit to the shops and markets. This system may be followed in library by arranging a method for home delivery of books by hiring staff as per the requirements, which will also enhance the visibility of library and its operation. Even timely return of the books may be ensured by adding pick up servicer for books and journals and materials. This service may be operational for two or three days of a week to handle the load of book distribution. Suggestions are sort from the respondents to see their support for this proposal.

### ***Electronic resources and techniques to access these through library***

Now a day, the new reality is to access electronic resources for better teaching and learning process. The tremendous growth of virtual and digital resources raises new hope for getting the relevant material at ease. The users have options to access various resources at same time and select the best as per their requirement. Libraries can play very important role to mediate between the supply and demand of the resources. The resources sometimes are so huge that, the user is confused to select the best, and also authentication of resources is required. Additionally, important and updated resources may not allow free access to the users. Libraries can guide the user in all the above circumstances in professional manners.

As the libraries are currently doing by subscribe the resources and letting the users access them from it. Libraries have also specialized access system for the users to avail the virtual resources. During this pandemic, there is restriction on movement and library staffs scare to go for person to person contact of the users. So, providing virtual resources to the users could be the best option available to enhance the user bases by the libraries. The faculty members, research scholars student can save lot of time by getting their required resources through library access systems, do their learning or research activities without frequent interruptions. The open sources resources and restricted resources could be made accessible by the libraries for its users situated in the remote locations.

Currently, libraries provide login and passwords for accessing its online resources, which works only through intranet system, where the user should be present within the vicinity

of the library. However, with pandemic around the corner, the access boundaries should be enhanced to reach, all the users, for say the teachers and students of a University etc. irrespective of their remote location. Various existing systems and new systems with better resource safety features need to be explored to subside the impact of pandemic of teaching- learning and research activities. Some of the proposed systems include IP authentication- where IP address of the user will be recorded and it will be the single access point for a particular user; user id and password system- where specialized id and password provided to the users; or cloud based RemoteXs system- allows bulk volume data retrieval etc. user id and password, though looks suitable system to follow, however may be shared by the users to unauthorized users leading to misuse of resources as well as manipulation of resources.

RemoteXS – a cloud based secured access service is operational from anywhere, anytime to the NLS community. RemoteXS brings all the scattered eResources of the institution, under one umbrella consisting of e-Databases, e-Journals, e-Books and other e-Content (RemoteXS, 2020). RemoteXs has an ability to provide secured access to scattered eResources of the institution, bringing them under one umbrella, along with subscribed eJournals, eBooks and all other eContent, that too anytime ...from anywhere. The cost-effective cloud-based service model has enabled progressive libraries in creating their own Digital Library Portal with facilities to reach their target audiences in efficient manner. The university such as National Law School of Indian University, Indian Institute of Technology, Gandhinagar etc. have already used the RemoteXs system for remote access of resources through the libraries and other institutions (IIT, 2020).

Training and virtual orientation session may be required to be conducted by the libraries to educate the users about new resources, their sources and techniques to access them with ease. With pandemic, regular webinar could be hosted for homogenous users, about the new systems and techniques and their drawback for professional assessment of resources.

### **3. Data analysis and interpretation**

#### **3.1. Data collected through questionnaire**

As the survey was carried online, the major respondents are below 40 years group, showing your groups are more active in online works. However, there is nearly 30% respondents belong to age 40 and above group. Nearly 30% of the respondents are represented by female group of respondents. It may be due to the less no. of female respondents communicated for the survey work in online mode (Fig. 1). Most of the library had stopped their normal operation during the countrywide lockdown against the spread of pandemic. E-resource circulation found to be very popular during the pandemic assisting in knowledge sharing. It is inspiring to found some of the libraries mostly community libraries were fully operational during the lockdown. As we understand and the responses received, precautions need to be taken during reopening of library operation. The concerned of the respondents are clearly visible for their support for maintaining social distancing and use of mask and sanitizer (Fig. 2).

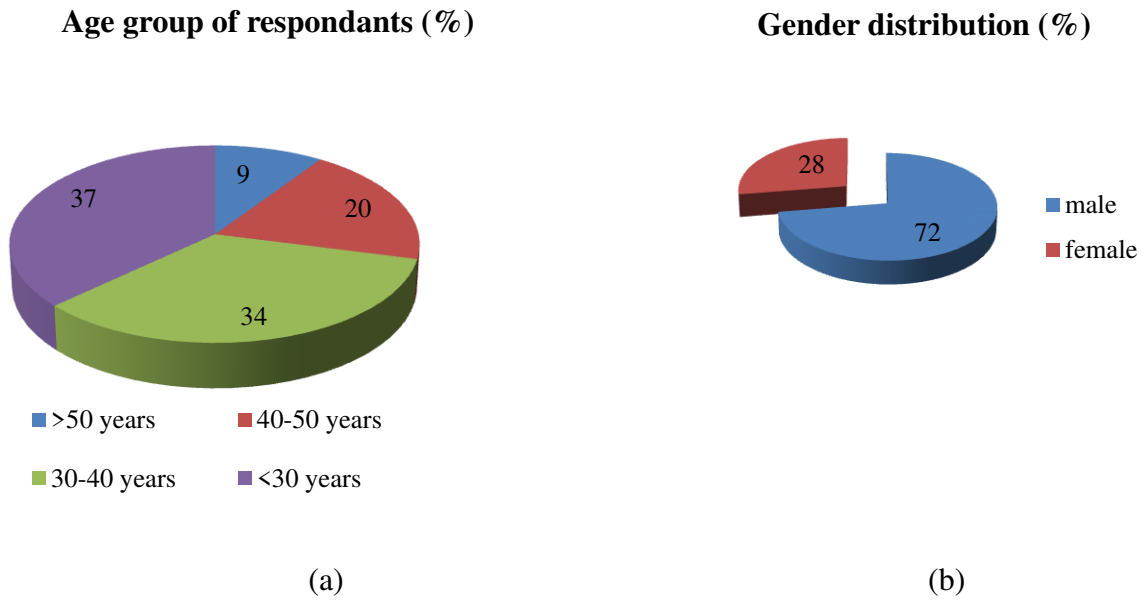


Figure 1: Respondents' composition; a) age distribution, b) gender distribution

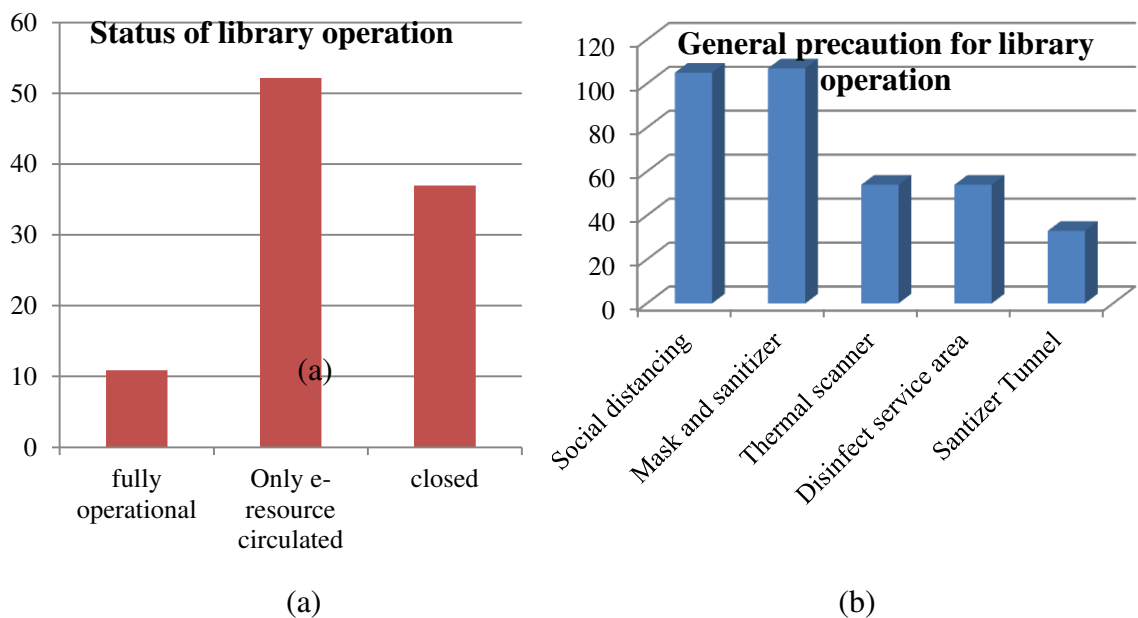


Figure 2: Status and precaution for library operation during pandemic; a) Status of operation, b) General precaution measures

Interestingly, they are not scared of fear as, low response was received for other precautions like the use of thermal scanner, sanitizer tunnel etc. This shows optimum precaution measures may be sufficient to operate the libraries during the pandemic.



Quarantine of the materials and sanitization of materials approach receive positive response from the respondents. However, sanitization of paper materials may be a tough call for the libraries. Specific quarantine duration before reuse could be a cheaper solution for all the libraries (Fig. 3). As we can see, webinar and online meetings and use of online learning platform were hugely supported by staffs of the libraries spreading over different regions of India. However, other options also get positive support of nearly fifty responses, showed preparedness of library staff for providing assistance in online activities (Fig. 4).

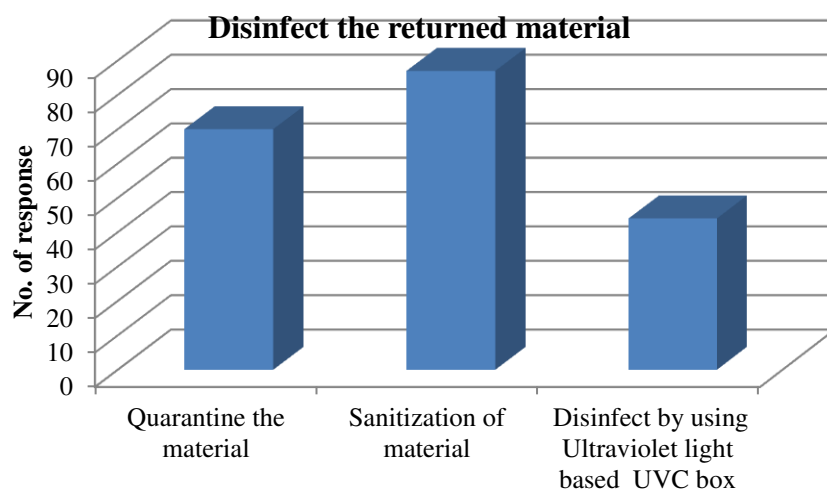


Figure 3: Procedure for disinfection of returned material

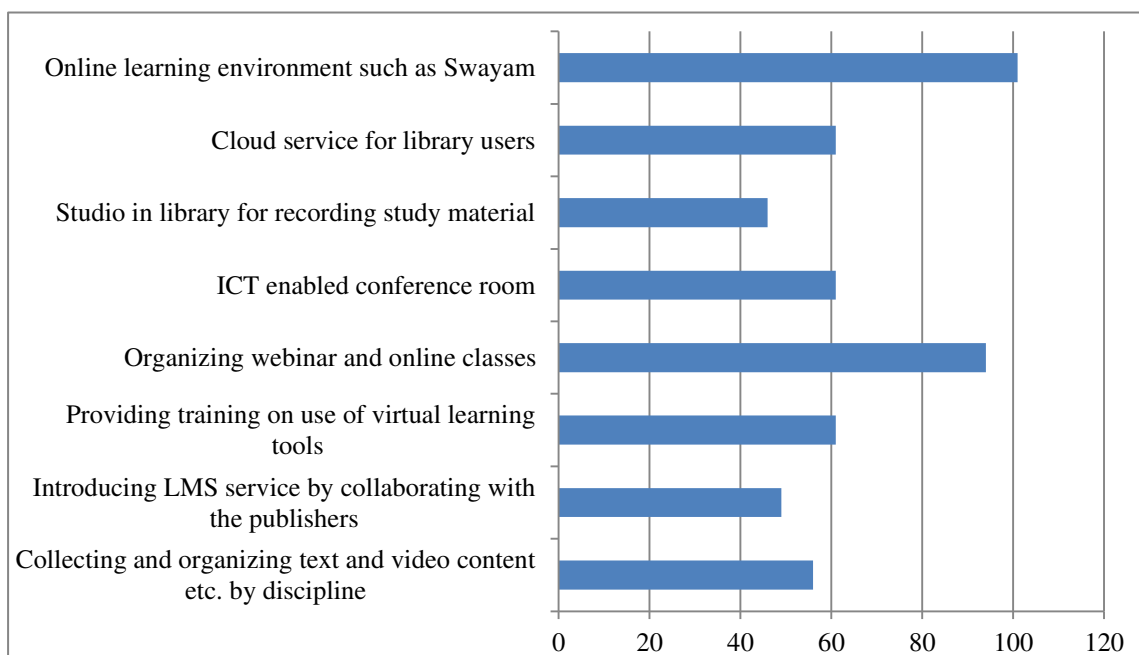


Figure 4: Library support for online activities by the University

Supplying user ID and password for the users from remote access of library resources are recommended by the respondents. However, specific measure may be required against the misuse of the materials and illegal distribution of sensitive resources (Fig. 5). Respondents agreed to follow the guidelines given by WHO and other organization for safe operation of library activities. Respondents found confused on status of some of the basic service to continue or restrict during reopening of the library operations. However, they oppose the continuation of magazines and reading room service for the time being (Fig. 6).

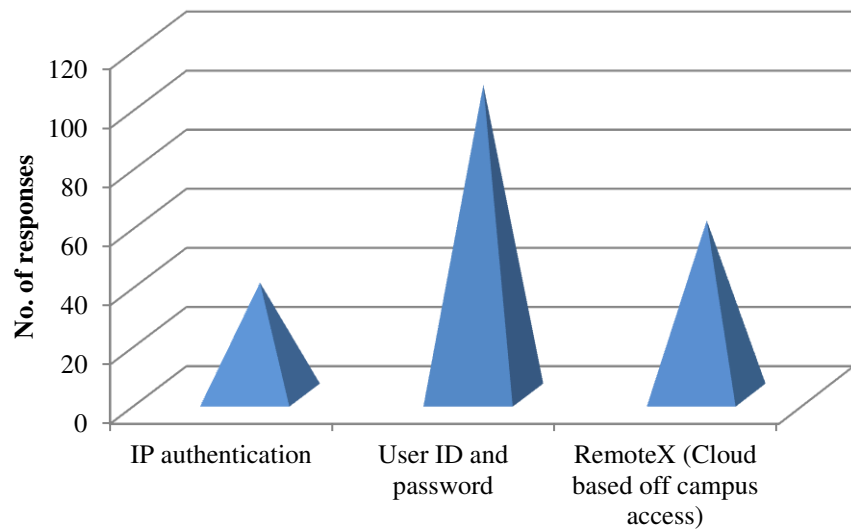


Figure 5: Recommended remote access system

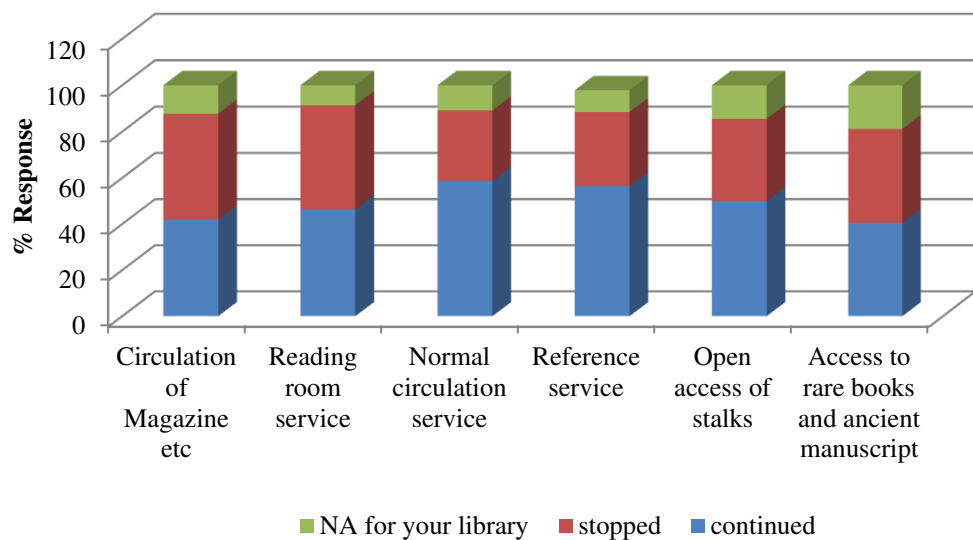


Figure 6: Status of specific service provided by libraries

Floor management is very important component to regulate the library service under the pandemic situation. Among the floor management mobile reading tables separated by

acrylic barrier is hugely supported by the respondents to keep the library users safe and healthy (Fig. 7).

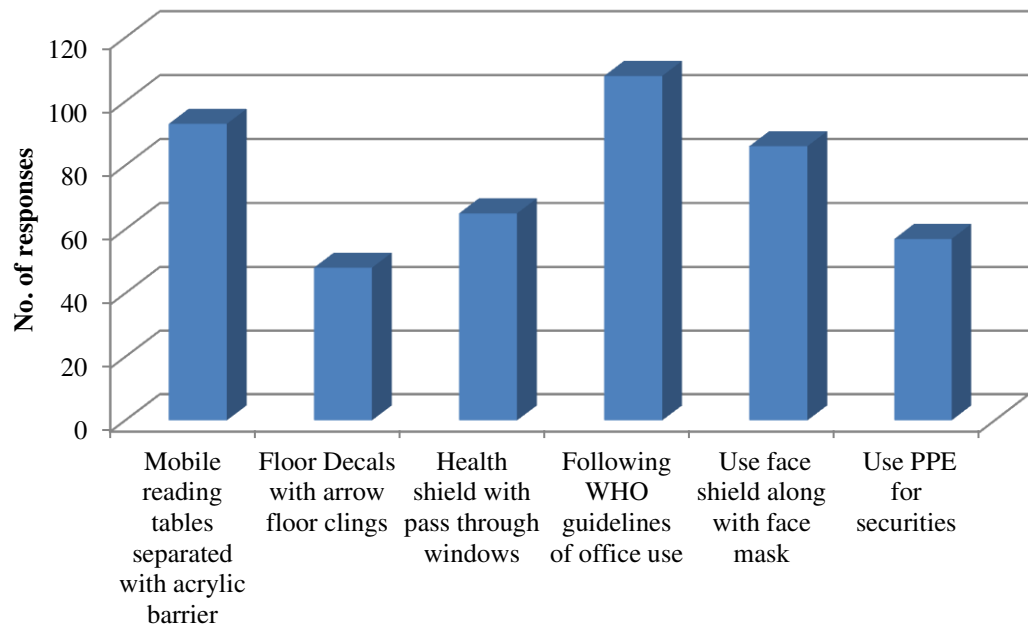


Figure 7: Structural safety measures for library operation

### 3.2. Discussions

Educational institution and libraries need to be opened with unlocking of various services in different countries. In India, the libraries will be opened slowly. But, various precaution measures need to be taken in accordance with WHO guidelines, Government of India guidelines and as per UGC directives etc. keeping safety issues of the library staffs and users. However, the opinions of the library administrators, staffs and personnel carry sound importance in preparing library operation guidelines based on their long experience in library operations and their involvement in the day-today activities. The research work attempted to reach these experienced persons and collected their suggestions and expectations for library operation during pandemic situation.

Safety of library staff is the utmost important to maintain the library service once it started operation. As per the current guidelines, if a single staff shows symptoms of COVID-19 infection as a precautionary measure, the library service will be halted and the users will be deprived of the library resources. The staffs, administrators, and users should follow the basic precaution such as use of mask, sanitizers and social distancing etc. during carrying out operations in the library. The use of face shield, head cap, hand gloved etc. should be provided to the front desk staffs and security personnel. The issues of disinfection of circulation materials are also very important to keep the rare materials safe and break the chain of infection during recirculation of library resources. The intermediate isolation of library resources before recirculation, use of modern technologies such as UVC box also gets sound support from the respondents.

Floor spacing and management is very important to maintain social distancing and keeping the virus at bay. The measures such as mobile round tables with acrylic

separating bar, arrow marks etc needs special attention for safe library operation. The advance options such as home delivery of books and circulation of e-news papers for circulation etc. get thumb up response from the respondents, showed the forward thinking of the library staffs to cope of with the new situation created due to pandemic all around. The online access of virtual materials monitored through libraries may be introduced to reduce number of visit to the library. The remote access of library and other resources login password, remoteXs service, IP authentication etc. may be allowed to users for reducing frequent visit to the library.

#### 4. Conclusion

Libraries are going to reopen sooner or later following the safety precautions and health guidelines. Specific measures need to take for safety and health issues during general operations of libraries. Frequent disinfection of floor, working area, library resources is required followed by safety attires for the library staffs. The users should use mask and sanitizer with thermal scanners to check the transmission of the infection. Taping the virtual resources under the scanner of library may be provided to the users through remoteXS service or login-password systems.

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