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# COVID-19 prevention strategies during the return to activities in a Speech Therapy Teaching Clinic

## Estratégias de prevenção da COVID-19 no retorno das atividades em Clínica Escola de Fonoaudiologia

## ABSTRACT

**Purpose:** Describe the preventive strategies used during the COVID-19 pandemic in the return of academic and health care activities in a Speech Therapy Teaching Clinic at a Brazilian public university. **Methods:** This is a descriptive study based on documentary research. The strategies were based on official recommendations from national and international institutions and/or organizations to combat COVID-19 published between March and June 2020. The strategic plan included an analysis of the clinic's infrastructure, material and human resources, and user profile. The results are presented descriptively. **Results:** Actions based on the health recommendations to face the COVID-19 pandemic published until then considered adaptations to the infrastructure, care for the environment, and planning and implementation of a new health care routine and a biosafety protocol. The technical-scientific support provided by professionals in the field of biosafety was essential to assess local risks and establish preventive measures. **Conclusion:** A detailed description of strategies is a guiding instrument for the return to activities in the safest manner. To be effective, strategies to combat infections of any nature should be formulated considering the particularities of each health care environment. The new routines should contemplate the local socioeconomic reality and fulfill the academic and social objectives of the Speech Therapy Teaching Clinic, but they should be revised by the management team periodically or as the local health situation evolves.

## RESUMO

Objetivo: Descrever as estratégias utilizadas durante o período da pandemia de COVID-19 para o retorno das atividades acadêmicas e assistenciais em saúde da Clínica Escola de Fonoaudiologia de uma universidade pública brasileira. Método: Estudo descritivo, baseado em pesquisa documental. Para embasar as estratégias, foram utilizadas recomendações oficiais de instituições ou organizações nacionais ou internacionais no combate da COVID-19 publicadas entre os meses de março e junho de 2020. O plano estratégico proposto partiu da análise do servico considerando as dimensões: infraestrutura, recursos materiais, recursos humanos e perfil dos usuários. Os resultados foram apresentados de forma descritiva. Resultados: Foram planejadas ações referentes a adaptações na infraestrutura, cuidados com o ambiente, planejamento e implementação da nova rotina de atendimento e protocolo de biossegurança, fundamentadas nas recomendações sanitárias para enfrentamento da situação sanitária publicadas até o momento. O apoio técnico-científico de profissionais do campo da biossegurança foi fundamental na avaliação dos riscos locais e no estabelecimento de medidas de prevenção. Conclusão: A descrição detalhada serve como instrumento norteador para o retorno das atividades com o máximo de segurança possível. Para que sejam eficazes, as estratégias de combate a infecções de qualquer natureza devem levar em consideração, no momento de sua formulação, as particularidades que cada ambiente de assistência à saúde possui. As novas rotinas devem contemplar a realidade socioeconômica local e permitir o cumprimento dos objetivos acadêmicos e sociais da Clínica Escola, mas devem ser revistas em períodos preestabelecidos pelos gestores ou de acordo com a evolução da situação sanitária local.

Study conducted at Universidade Federal Fluminense - UFF - Nova Friburgo (RJ), Brasil.

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## INTRODUCTION

On March 11, 2020, due to the large worldwide number of infections caused by the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), the World Health Organization (WHO) declared the coronavirus disease 2019 (COVID-19) a pandemic<sup>(1)</sup>. The disease is transmitted through contact with secretions from infected people, such as droplets of saliva, coughing and sneezing, or through contact with contaminated objects and surfaces<sup>(2,3)</sup>. From those infected with the COVID-19 virus, approximately 80% will be asymptomatic or experience mild to moderate symptoms. People aged >60 years or those with underlying clinical conditions may need hospital care for breathing difficulties, and 1/4 of these individuals may require ventilatory support to treat respiratory failure<sup>(1-3)</sup>. In addition to the respiratory system, COVID-19 can also affect the vascular, nervous and immune systems. The most common symptoms include fever, dry cough, and breathing difficulties, which can manifest between two and 14 days after contact with the virus<sup>(2)</sup>.

The seriousness of this situation requires prioritizing infection prevention measures, reducing disease transmission, and providing COVID-19 patients with adequate treatment<sup>(1,2,4)</sup>. In addition, other diseases and health conditions continue to demand treatment, often continued, and represent the greatest burden on health systems<sup>(4)</sup>.

The Pan American Health Organization (PAHO) and the WHO have been supporting different countries, including Brazil, by providing the governments with tools that assist in making decisions about non-pharmacological, mental health promotion and social distancing measures based on indicators of epidemic scenarios<sup>(3)</sup>. The guidelines of national and international institutions recommend the general behaviors to be adopted during health emergencies; however, specific actions should be planned and implemented by the managers of each health unit respecting their social, cultural and financial characteristics<sup>(3,4)</sup>.

Speech Therapy Teaching Clinics are spaces for academic training of speech-language pathology (SLP) professionals that provide their users with speech-language health care related to the prevention, assessment and treatment of communication disorders. Due to the COVID-19 pandemic, these clinics had to suspend their activities after the publication of ordinance no. 343 of the Brazilian Ministry of Education on March 17, 2020<sup>(5)</sup>. On March 19, 2020, the Federal Speech-language Pathology and Audiology Council (CFFa) recommended the suspension of outpatient speech therapy services and elective procedures and exams through its recommendation no. 19<sup>(6)</sup>.

In many countries, impacts on the health of socially vulnerable populations are likely to occur as a result of the suspension of public assistance services, as pointed out in a recent PAHO/WHO document on rehabilitation services<sup>(4)</sup>.

Return to the activities should occur gradually and using systematic prevention and long-term control strategies that guarantee the safety of the population and quality and biosafety standards in different health care practices<sup>(7)</sup>. In this context, this study aimed to describe the prevention strategies used during the COVID-19 pandemic in the return to academic and health care activities in a Speech Therapy Teaching Clinic at a Brazilian public university.

## **METHODS**

We performed a descriptive study based on documentary research in a Speech Therapy Teaching Clinic of a Brazilian public university that has been providing specialized speechlanguage assistance to the population of the city where it is located, as well as to the populations of the municipalities that belong to its health microregion for six years.

At the time of this study, the Clinic had eight rooms for therapeutic care, two rooms for audiological assessment, and two rooms for the supervision and guidance of SLP undergraduate students. This Clinic provides free services, individually or in group, in all speech therapy clinical areas. The teaching activities are directed to mandatory and non-mandatory curricular internships and practical classes of compulsory or optional disciplines of the SLP undergraduate course. University research and extension activities are also developed in the space.

The actions were planned with assistance of the local Biosafety Commission of the Institution and their preparation considered the Clinic's infrastructure and the economic reality of Brazilian public universities. The strategies were defined in two axes: (i) organization of the Clinic's spaces and (ii) new biosafety procedures and adaptations to the health care and teaching routines.

To support the process of preparing the strategic action plan for the service in question, documentary searches were conducted on the official websites of national and international health institutions and/or organizations and professional bodies. Official documents and scientific articles and books with recommendations on precautionary and preventive measures to combat COVID-19 were included in this study. The search period was oriented according to the progress of the pandemic and occurred between March and August 2020.

The results are presented descriptively in tables that summarize the main recommendations and the proposed strategic plan to be implemented in the analyzed service.

## RESULTS

The search retrieved 19 documents: four (21%) scientific articles/books and 15 (79%) official documents from national and international institutions and/or organizations. Chart 1 shows a synthesis of the documents identified during the study period.

Considering the set of recommendations identified in the documentary research and the reality of the service, the management team of the Speech Therapy Teaching Clinic aimed to develop a strategic action plan that would ensure continuity of the mandatory activities for the training of SLP undergraduate students (internships and practices), and the health assistance to the community as safely as possible. To this end, the following measures were adopted: changes in the organization of the Clinic's infrastructure, adaptations to its health care routine, and implementation of a biosafety protocol, considering the specificities of COVID-19. These measures comprised the strategic action plan for the service, as shown in Chart 2.

	Chart 1.	. Main	recommendations	applicable to	the operation	of health care	services in the	COVID-19 pandemic
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Source / Date	Type of publication / Title	Svnthesis
World Health Organization (WHO) <sup>(8)</sup> / March 2020	WHO guide / Guía para la elaboración a nivel local: Formulaciones recomendadas por la OMS para la desinfección de las manos	It provides guidance to pharmacists on the preparation of formulations and a summary of basic technical information on hand hygiene in health care
Brazilian Ministry of Education <sup>(5)</sup> / March 2020	Ordinance no. 343 of 17 March 2020	It provides for the substitution of face-to-face classes with online classes during the COVID-19 pandemic
Federal Speech-language Pathology and Audiology Council (CFFa) <sup>(6)</sup> / March 2020	Recommendation / <i>Recomendação CFFa</i> nº 19, de 19 de março de 2020	It provides for care with the disease caused by the novel SARS-CoV-2, COVID-19, declared a pandemic by the WHO, in the activities or care performed by speech therapists
Pan American Health Organization (PAHO) <sup>(9)</sup> / April 2020	Interim guidance / Orientação sobre o uso de máscaras no contexto da COVID-19	It provides guidance on the use of masks in the community during home care and health services in regions with reported cases of COVID-19
PAHO <sup>(10)</sup> / April 2020	Recommendation / Care for health workers exposed to the new coronavirus (COVID-19) in health facilities	It presents guidelines for the care of health professionals exposed to COVID-19 in health institutions and for the management of occupational exposure to the virus
Chin et al. <sup>(11)</sup> / April 2020	Scientific journal publication / Stability of SARS-CoV-2 in different environmental conditions	It reports on the stability of SARS-Cov-2 under different environmental conditions
van Doremalen et al. <sup>(12)</sup> / April 2020	Scientific journal publication / Aerosol and Surface Stability of SARS-CoV-2 as compared with SARS-CoV-1	It analyzes the stability of SARS-CoV-1 and SARS-CoV-2 in aerosols and surfaces and their rate of infection decay
WHO <sup>(13)</sup> / May 2020	Interim guidance / Cleaning and disinfection of environmental surfaces in the context of COVID-19	It presents guidelines for reducing any role that objects and materials may play in the transmission of COVID-19 in health and other care services
PAHO <sup>(14)</sup> / May 2020	Checklist / Lista de verificación para la gestión de los trabajadores de salud durante la respuesta a la COVID-19	It complements the actions and interventions related to the management of human health resources described in the document: <i>Marco de referencia de la red integrada de</i> <i>servicios de salud a la respuesta de COVID-19</i>
National Health Surveillance Agency (ANVISA) <sup>(15)</sup> / May 2020	Technical note / Orientações para serviços de saúde: medidas de prevenção e controle que devem ser adotadas durante a assistência aos casos suspeitos ou confirmados de infecção pelo Novo Coronavírus (SARS-CoV-2)	It addresses guidelines for health services on the prevention and control measures that should be adopted when assisting suspected or confirmed cases of infection with the novel SARS-CoV-2, according to the evidence available until 08 May 2020
Institute for Risk and Disaster Reduction of Pernambuco (IRRD) <sup>(2)</sup> / June 2020	Guidance / Recomendações para profissionais de saúde	It provides recommendations on biosafety and clinical management during care for suspected or confirmed cases of COVID-19
Brazilian Academy of Audiology <sup>(16)</sup> / June 2020	Technical note / Recomendações para o retorno da prática em Audiologia	It presents recommendations for speech therapists on using personal protective equipment (PPE), ensuring a safe work environment, and conducting audiological assessment during a pandemic period
PAHO <sup>(3)</sup> / June 2020	Official website / Folha informativa – COVID-19 (doença causada pelo novo Coronavírus)	It provides information to the general population and health professionals on the disease caused by the novel SARS- CoV-2
PAHO <sup>(4)</sup> / June 2020	Report / Rapid Assessment of service delivery for NDCs during the COVID-19 pandemic in the Americas	It presents a brief account of the impact that the COVID-19 pandemic had on services providing assistance to people with chronic noncommunicable diseases in the Americas during May 2020, when the region was considered the epicenter of the pandemic
Gallasch et al. <sup>(17)</sup> / 2020	Scientific journal publication / Prevention related to the occupational exposure of health professional workers in the COVID-19 scenario	It describes the main recommendations on contagion prevention actions related to occupational exposure of health professionals working to combat COVID-19 available until March 2020
Zhang <sup>(7)</sup> / 2020	E-book / Manual de Prevenção e Controle da COVID-19 segundo o Doutor Wenhong Zhang	It presents methods of prevention and control of infections caused by the novel SARS-CoV-2
Quadri et al.(18)/ 2020	Scientific journal publication / Deploying Medical Students to Combat Misinformation During the COVID-19 Pandemic	It reports on a strategy for the engagement of medical students in the sharing of knowledge about COVID-19 to the general population to contribute to the formation and assistance of the population's health and needs
Brazilian Ministry of Health <sup>(1)</sup> / 2020	Official website with information on COVID-19	It provides information and recommendations to the general population and specific guidance for health professionals

#### Chart 2. Strategic action plan for the return to activities in the health care service studied

Axes of action	Strategies
	- Installation of a locker room for teachers and students: space for changing clothes, gowning, and putting PPE on and off;
Adaptations to	- Installation of a sink in the external area of the clinic intended exclusively for hand hygiene before entering the clinic's premises;
	- Adaptation of a space intended exclusively for cleaning materials and equipment: area for cleaning and disinfecting therapeutic materials and equipment (games, toys, specula, ear tips, etc.) and PPE (face shield, safety glasses, etc.)
	- General care: cleaning must be performed at the end of each work shift, from the least to the most contaminated environment, from top to bottom, and from inside to outside;
	- Care of the waiting room and reception: delimitation of spaces that guarantee safe social distancing and cleaning after the work shift;
	- Care of the service rooms: removal of carpets, decorative objects or those of occasional use, to facilitate the cleaning of tables, chairs, floors, and other spaces;
Care with the environment	- Immediate cleaning after each consultation and three hours after end of service to ensure hygiene after the aerosols have settled;
	- Cleaning of the common environment of the Clinic at the end of each work shift (morning and afternoon);
	- Installation of bactericidal disinfectant mat at the clinic entrance door;
	- Acquisition of ultraviolet disinfection equipment for use inside the acoustic booth and in materials that cannot undergo the usual disinfection process, e.g., cardboard games;
	- Adaptation of the waiting room: spacing of 1.5 meters between chairs.
	- Reduction in the number of visits so that the correct disinfection of the service environments can be ensured;
Planning and	-Reduction of the number of students aiming to avoid crowding: only students who are in priority academic activities, such as mandatory internships, should remain in the clinic;
service routine	- Scheduling of appointments: 30 min interval between each appointment, considering all outpatient practices in operation in the work shift (single schedule);
	- Therapeutic kitchen activities: limited to only one person in the environment.
	<ul> <li>Wearing masks is mandatory for everyone during the entire stay in the Clinic. The use of fabric masks is permitted. During speech therapy, the use of surgical masks or N95/Pff2 respirators is mandatory depending on the procedure;</li> </ul>
	<ul> <li>Hand hygiene: all regulars of the Clinic are instructed to wash their hands before entering the clinical environment and whenever they are dirty. For students and teachers, this instruction is added for before and after attending the user. Disinfection with 70% alcoholic solution should be performed after contact with objects and materials possibly contaminated and whenever deemed necessary;</li> </ul>
Planning and implementation of a	- Changing clothes: all students, teachers, and staff should change clothes and shoes when they arrive at the Clinic. Surgical gowns are recommended for teachers and students;
biosafety protocol	- Gowning and use of PPE: students and teachers must wear caps, masks or respirators, disposable aprons, gloves, and face shields. The use of PPE must be in accordance with the speech therapy procedure and guided by the supervising professor;
	- Collective precaution: biosafety training, information posters, and reminders posted in the different spaces of the Clinic;
	- Production of the biosafety protocol booklet and training of students, staff, and teachers, with emphasis on the necessary conduct during the COVID-19 pandemic;
	- Implementation of a health management protocol for students, teachers, and staff at the Clinic.

#### DISCUSSION

The COVID-19 pandemic has been a major concern for public health authorities worldwide, and initially caused the disruption of many health and education services in the affected countries<sup>(1-3)</sup>. According to the PAHO, to cope with the COVID-19 pandemic, countries and their health institutions should be able to respond with enough human resources and skills appropriate to the needs of their populations<sup>(14)</sup>.

The literature highlights that the only way to slow the spread of the novel SARS-CoV-2 is to control the source of infection, interrupt the route of transmission, and protect susceptible people<sup>(7)</sup>. However, the participation of each citizen is indispensable and, to ensure participation, it is essential that the different spheres of government present a solid social assistance policy that guarantees active cooperation and personal protection<sup>(7)</sup>.

In Brazil, according to the National Health Surveillance Agency (ANVISA), organizational policies and practices should be structured in such a way as to minimize the exposure of health professionals, both in pre-hospital settings and other health units<sup>(15)</sup>. Some speech therapy practices expose professionals to a high risk of contamination through air and contact; therefore, efforts by management teams to review and adapt their internal guidelines and protocols should be valued<sup>(3,4,17)</sup>.

Support and collaboration between the different levels of organization in health units are essential<sup>(17)</sup>. Biosafety and Hospital Infection Control Commissions can assist the management teams of the different health services, including those of speech

therapy. The training of all professionals involved in health care, as well as the guarantee of PPE supply are essential to achieve satisfactory responses to control the spread of COVID-19 infection<sup>(17)</sup>. It is noteworthy that, as COVID-19 has been recently discovered, training programs and protocols should be frequently updated, which is a technical responsibility of health managers, researchers and professionals<sup>(17)</sup>.

Health service managers should develop an action plan that includes adjustments in the assistance flow (conducts and procedures) and health control of their users and professionals<sup>(14,17)</sup>. In the case of educational institutions that host health courses and services, other concerns, in addition to assistance, should be addressed. Keeping students away from the clinical routine needed for their training hinders their education and creates gaps in their knowledge. Some researchers have pointed out that the distancing caused by the suspension of practical health activities can generate blockages in the students' knowledge, including of the pathogen responsible for their withdrawal<sup>(18)</sup>.

The PAHO emphasizes that, to guarantee the safety of health workers it is necessary, among other recommendations, to ensure satisfactory training through a viable training plan; move professionals away from risk groups; guarantee preventive measures; provide information, instructions and training; acquire and distribute an adequate number of PPE; implement protocols and systems to manage and monitor cases; ensure that employees know how to identify and report all symptoms<sup>(14)</sup>.

Aiming to assist with decision-making, the Brazilian Society of Speech Therapy (SBFa) and the Federal Speech-language Pathology and Audiology Council (CFFa) jointly issued a document that guides the return to teaching activities and that, among other recommendations, includes care with biosafety as one of the needs in this resumption<sup>(19)</sup>. In parallel, the CFFa published the second edition of its Biosafety Manual, which guides professionals on the risks and procedures necessary for the safety of patients, environments, and professionals. These actions seek to assist professionals with the continuity of their activities, guarantee speech therapy assistance in other health conditions, and strengthen the fight against the pandemic<sup>(20)</sup>.

The National Health Council (CNS), through recommendation no. 048 of 01 July 2020, instructs the Brazilian Ministry of Education to observe technical opinion no. 162/2020 regarding internships and practices in the health field during the COVID-19 pandemic. This opinion points out that the interrelational skills fundamental to health professionals, which are provided and maintained in direct contact with the patients (users), cannot be achieved with the use of information and communication technologies (ICT) and, therefore, should proceed in person based on active and responsible cooperation. Thus, the CNS calls on federal, state and municipal higher education institutions to safely mobilize all their cognitive and operational resources in strengthening the Brazilian Unified Health System (SUS)<sup>(21)</sup>.

Normally, during health care, the safety of users and patients is ensured by applying standard precautions. During the COVID-19 pandemic, health services need to adjust their protocols through administrative, environmental, assistance or engineering measures. These measures should be adopted even before the patients' arrival and after they leave the service<sup>(17)</sup>,

as foreseen in the action plan proposed for the Speech Therapy Teaching Clinic in question (Chart 2).

Measures such as rescheduling elective procedures and conducting interviews and prior guidance on signs and symptoms can reduce the transmission of pathogens in the health care environment<sup>(17)</sup>. Upon arrival at the Clinic, other preventive measures should be adopted, such as requirement for the continued use of masks by users and companions, guidance on hand washing, and maintenance of social distancing<sup>(9)</sup>.

Different institutions and authors have recommended that health professionals wear surgical masks or respirators during care<sup>(2,4,7,9,10)</sup>. The PAHO has strongly encouraged public health authorities to advise the community on the use of fabric masks, even by healthy people and in open environments<sup>(9)</sup>. Although there is no scientific evidence regarding the effectiveness and efficiency of fabric masks to date, partnerships have been established so that research on the topic can be conducted. The PAHO points out that the use of masks alone, as a source control, is not sufficient to reduce the COVID-19 transmissibility; other measures such as hand washing, social distancing, and respiratory etiquette should be adopted<sup>(9,15,17)</sup>.

The use of other PPE such as caps, waterproof aprons, and eye protectors (safety glasses or face shields) should be evaluated according to the need arising from the type of speech therapy procedure performed. The Brazilian Academy of Audiology (ABA) advises, by means of a technical note, that if contact with the patient is very close, a disposable apron should be used, and recommends that a type of eye cover should always be used during consultations<sup>(16)</sup>.

Hand hygiene can be performed by washing with liquid soap or applying 70% alcoholic solution<sup>(15,17)</sup>. According to ANVISA, hands should be washed when they are contaminated, visibly soiled, before and after contact with patients, immediately after removing gloves, immediately after contact with body secretions, blood or contaminated objects, and between procedures<sup>(15)</sup>. Cleaning with 70% alcoholic solution is recommended by the WHO because it is accessible, well tolerated, cost effective, and for its fast and broad spectrum microbicidal activity, with minimal risk of resistance to antimicrobial agents<sup>(8)</sup>. Cleaning with alcohol 70% should be performed before and after contact with the patient, before putting on gloves or performing procedures, after contact with possibly contaminated objects, and after removing gloves. Training and visual alerts regarding the need and the appropriate technique can reinforce the conduct and ensure greater safety<sup>(8,15)</sup>.

Care with assistance environments deserves to be highlighted at this time. All furniture (tables, chairs, shelves, etc.), objects (pens, games, papers, etc.), equipment (computers, tablets, cell phones, etc.), and structure (walls, switches, handles, sinks, doors, etc.) need be cleaned to prevent further transmission<sup>(13)</sup>.

SARS-CoV-2, as the other coronaviruses, has a fragile external lipid envelope, which makes it susceptible to disinfectants. A study that evaluated virus persistence on different surfaces found that the COVID-19 virus remained intact for up to one day on fabric and wood, two days on glass, four days on stainless steel and plastic, and up to seven days on the outer layer of a mask<sup>(11)</sup>. Another study reported that the virus maintains its

integrity for 4 h on copper, 24 h on cardboard, and up to 72 h on plastic and stainless steel<sup>(12)</sup>. The results of these studies should be interpreted with caution since they were conducted under laboratory conditions and in the absence of cleaning and disinfection practices<sup>(13)</sup>.

During the disinfection process, it is important to note that before any environment cleaning procedure, previous cleaning with water and soap (or neutral detergent) should be performed, accompanied by some mechanical action, such as rubbing or brushing. In this way, dirt, debris, and organic matter such as secretions and blood are removed or reduced. Organic matter can prevent the direct contact of the substance with the surface and inactivate the germicidal properties or the mode of action of various disinfectants<sup>(13)</sup>. Disinfectant substances should always be properly prepared and used according to the manufacturer's recommendation<sup>(13,16)</sup>. Preparations that are too weak or too strong can reduce the effectiveness of the product or damage the surface, respectively. Training the professionals responsible for cleaning the environments is essential for the effectiveness of the action. Visual alerts are useful to remind and guide professionals about their technical actions<sup>(13)</sup>.

### CONCLUSION

Careful planning of adaptations to infrastructure and service routines allows the return to health care activities even in times of global health emergency. A detailed protocol is a facilitating tool for the return to activities with the greatest safety possible.

However, to be effective, strategies to combat infections of any nature should be formulated considering the particularities of each health care environment. The new routines should contemplate the local socioeconomic reality and fulfill the academic and social objectives of the Speech Therapy Teaching Clinic, but they should be revised by the management team periodically or as the local health situation evolves.

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#### Author contributions

KV: study design, collection, analysis and interpretation of data, and writing of the manuscript; BPBA: study design, analysis and interpretation of data, and critical review of the manuscript; SSB: study design, analysis and interpretation of data, and critical and textual review of the manuscript