

## Adversities in the daily work of a pre-hospital mobile emergency care service

*Adversidades no cotidiano de trabalho de um serviço de atendimento pré-hospitalar móvel de urgência*

*Adversidades en el cotidiano de trabajo de un servicio de atención prehospitalaria móvil de emergencia*

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### ABSTRACT

**Objective:** to identify adverse situations in the daily work of professionals in a mobile emergency pre-hospital care service. **Method:** qualitative study, based on Michel de Certeau's daily theoretical framework, carried out between July and October 2020, through interviews with 32 professionals from the Mobile Emergency Care Service (SAMU) in Belo Horizonte, Minas Gerais. Data processing was carried out by thematic analysis and organized using the MAXQDA® software. **Results:** the adverse situations were bad weather; violence's situations; pressure exerted by drug dealers, family members, passers-by; unpreparedness of professionals and assistance in inhospitable, difficult to access, unpredictable places, which can trigger possible incidents during assistance to users. **Conclusions:** the identification of adverse situations should be part of the routine before and during the assistences, and the implementation of preventive measures reduces the risk of incidents for the patient. **Descriptors:** Emergencies; Emergency Medical Services. Prehospital Care; Health Personnel.

### RESUMO

**Objetivo:** identificar situações adversas no cotidiano de trabalho de profissionais de um serviço de atendimento pré-hospitalar móvel de urgência. **Método:** estudo qualitativo, fundamentado no referencial teórico de cotidiano de Michel de Certeau, realizado entre julho e outubro de 2020, por meio de entrevistas com 32 profissionais do Serviço de Atendimento Móvel de Urgência (SAMU) de Belo Horizonte, Minas Gerais. O tratamento dos dados foi realizado por análise temática e organizado utilizando-se o *software* MAXQDA®. **Resultados:** as situações adversas foram intempéries climáticas; situações de violência; pressão exercida por traficantes, familiares, transeuntes; despreparo dos profissionais e atendimentos em locais inhóspitos, de difícil acesso, imprevisíveis, que podem desencadear possíveis incidentes durante os atendimentos aos usuários. **Conclusão:** a identificação das situações adversas deve fazer parte da rotina antes e durante os atendimentos, e a implementação de medidas preventivas reduz os riscos de incidentes ao paciente.

**Descritores:** Emergências; Serviços Médicos de Emergência; Assistência Pré-Hospitalar; Pessoal de Saúde.

### RESUMEN

**Objetivo:** identificar situaciones adversas en el cotidiano del trabajo de los profesionales de un servicio de atención prehospitalaria móvil de emergencia. **Método:** estudio cualitativo, basado en el marco teórico de cotidiano de Michel de Certeau, realizado entre julio y octubre de 2020, a través de entrevistas con 32 profesionales del Servicio Móvil de Atención de Emergencia (SAMU) en Belo Horizonte, Minas Gerais. El tratamiento de los datos se realizó por análisis temático y se organizó utilizando el *software* MAXQDA®. **Resultados:** las situaciones adversas fueron intemperies climáticas, situaciones de violencia; presión ejercida por narcotraficantes, familiares, transeúntes; falta de preparación de los profesionales y atención en lugares inhóspitos, de difícil acceso, impredecibles, que pueden desencadenar posibles incidentes durante la atención a los usuarios. **Conclusiones:** la identificación de situaciones adversas debe formar parte de la rutina antes y durante las consultas, y la implementación de medidas preventivas le reduce el riesgo de incidentes al paciente.

**Descritores:** Urgencias Médicas; Servicios Médicos de Urgencia; Atención Prehospitalaria; Personal de Salud.

## INTRODUCTION

Mobile Pre-Hospital Care (MPHC) is a dynamic and complex service, with unpredictable challenges and situations faced by the professionals while providing care to the users<sup>1</sup>. It provides care in various ways to victims of traumas due to accidents, sudden illness, violence and, other events in, oftentimes inhospitable places, which requires greater responsibility from the professionals due to complex situations which inevitably influence immediate decision-making<sup>2</sup>.

MPHC is also called Mobile urgency Care Service (*Serviço de Atendimento Móvel de Urgência*, SAMU), the name known to the population<sup>3</sup>. Implemented in 2004 in Brazil, it gradually expanded to the entire national territory<sup>4</sup>. It is considered a fundamental component of the National Policy for Urgency Care (*Política Nacional de Atenção às Urgências*, PNAU)<sup>5</sup>. Currently, MPHC is present in 3,837 Brazilian municipalities (67.3%) and serves 85.78% of the population<sup>6</sup>.

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The SAMU has operation norms for the entire country, although there are unpredictable situations in the routine of the service calls. For Certeau, routine is "(...) whatever is given to us every day (or what whatever our duty is), exerts pressure on us day after day and oppresses us, as there is certain oppression of the present [...]. What interests the historian about the routine is the invisible... Not so invisible after all"<sup>7</sup>.

Strategies and tactics are articulated in everyday life. The strategies are strength and power relations, represented by laws, protocols and norms. Tactics do not have a place of their own and depend on time, taking advantage of the occasions as gain possibilities<sup>8</sup>. Thus, the professionals adopt tactics to cope with adverse situations, with new and creative ways of doing within strategic controls.

Everyday work at SAMU has specificities as for the dynamics and complexity of the care services, in addition to the need for rapid decision-making in situations where care is time-dependent, which demands creativity from the professionals to circumvent unpredictable events<sup>9</sup>. In turn, unpredictability consists in whatever cannot be foreseen and generated something new, regarding the aspect of powers, changes and other possibilities<sup>10</sup>. Adversity corresponds to a set of life events and circumstance that can threaten teamwork development<sup>11</sup>.

SAMU professionals often experience unexpected situations and provide assistance in unknown, unhealthy, unsafe and difficult-to-access places<sup>12</sup>. In addition to that, they face tripled pressure in their work: in the first place, due to the need for a quick, agile and effective answer in victim stabilization and transportation to the hospital; secondly, due to the pressure exerted by society during service calls on public streets and homes since, oftentimes, pedestrians try to give their opinion, record and interfere with the care provided; and, in the third place, the possibility of accidents on the way and violence from the population. Such factors can contribute to incidents in the work routine of the MPH work teams<sup>13</sup>.

In recent decades, from 1991 to 2018, a scope review, which included studies carried out in several countries, showed incidents with the occurrence of adverse events, especially in hospital institutions<sup>14,15</sup>. In mobile pre-hospital services, incidents with damage are less documented than in hospitals<sup>16</sup>. This reality has become a challenge for health services, particularly in mobile pre-hospital care, due to the peculiarity of care, as such situations can become imperceptible to professionals and trigger incidents for the patient.

This study is justified by the fact that, after searching about this topic in the scientific production databases, no studies were found that answered the research question identified. It is believed that the results of this study will contribute to decision-making by professionals, coordinators and managers about important aspects for the detection, prevention, management and risk reduction in the everyday work of the SAMU teams, from identifying adverse situations and potential risks in the assistance provided to users by different professionals.

This acknowledgment allows planning and organizing actions in order to prevent and/or reduce incidents by identifying diverse situations, as well as facing them, in addition to enabling scientific production on the topic.

Thus, the objective was to identify adverse situations in the work routine of the professionals working in the SAMU from Belo Horizonte, Minas Gerais.

## METHOD

This is a qualitative study grounded on the theoretical framework everyday life by Michel de Certeau<sup>7</sup>, carried out in SAMU from the Belo Horizonte, Minas Gerais, Brazil, considered one of the pioneer cities in implementing this system in the country. This is the result of the PhD thesis entitled "Risk potential in the work routine of the Mobile Urgency Care Service (SAMU)".

Certeau's theoretical framework<sup>7</sup> was used to discuss situations experienced at the care loci and the use of strategies and tactics in the professionals' real work. The study was developed according to the criteria recommended in the *Consolidated Criteria for Reporting Qualitative Studies (COREQ)*<sup>17</sup>.

In order to conduct the interviews, previous contacts were made with the SAMU director, as well as with the Permanent Education Center (*Núcleo de Educação Permanente, NEP*) and Nursing Coordination Offices.

The following criteria were considered for inclusion of the target population in the study: being part of the SAMU teams, such as the professionals who manned the ambulances (physicians, nurses, nursing technicians and rescuer drivers) and performing the function at their workplace for a period of over six months. It is believed that this is the minimum time required for the professionals to acquire specific training by the Permanent Education Center (NEP) and practical experience to work in the SAME, due to the complexity and singularity inherent to work. Two coordinators were also included, one from the NEP and another from the Nursing Coordination Office, both considered key

informants. The exclusion criterion corresponded to being distanced from work duties due to various reasons during the data collection period.

The participants were chosen based on an intentional sample of the “snowball” type, considering the difficulty recruiting participants that were distributed in all 26 SAMU bases of the municipality, due to the type 2 coronavirus disease pandemic (SARS-CoV-2), the COVID-19. The “snowball” technique allows reaching less accessible population groups and seek better understanding on a given topic<sup>18</sup>. It consists in choosing the initial participants, called “seeds”, who indicate other eventual participants, called “seeds' children”, and so on, until the saturation point is reached<sup>19</sup>.

Initially, a pilot test was carried out with three professionals that did not take part in the sample, in order to verify understanding of the script and the possibilities of achieving the objectives. The script proved to be adequate. To ease contact with the first participant, the so-called seed, information was sought via telephone from the Nursing coordinator, the NEP and the SAMU director to identify the professional with the longest experience time in pre-hospital care based on the number of experiences. The interview was initiated by a nurse that had been indicated by the aforementioned coordinators and director. After agreeing to the interview, this nurse indicated new participants.

Data collection took place from July to October 2020, by means of an interview with a semi-structured script, with items related to the participants' characterization and to questions on the topic under study.

Initially, the participants received diverse information through a messaging app about the study objectives and an access link to the virtual platform for the interview and verbally declared acceptance through the Free and Informed Consent Form (FICF). The interviews were carried out by the lead researcher through a virtual platform, at a day and time chosen by the participants because of the social distancing recommendations related to the COVID-19 pandemic.

A total of 32 professionals participated in the study. The number of participants was defined by means of data saturation, when no new information was added<sup>20</sup>. Lasting a mean of 30 minutes, the interviews were recorded and transcribed in full. The transcripts were organized by means of a code, reading and coding system, resorting to the MAXQDA® software, version 20.2. The data were submitted to the thematic-categorical content analysis technique<sup>21</sup>.

To preserve anonymity and confidentiality, the participants were assigned a numerical identification by means of the initial letter corresponding to the professional category and the sequential number of the interviews (N: Nurse, Ph: Physician, NT: Nursing technician, and D: Driver), making up the following codes: N1, Ph2, NT3, D4. Refusals were received from 07 (seven) professionals who alleged unavailability, although they did indicate colleagues, thus maintaining the rigor inherent to the “snowball” technique.

Two categories emerged, namely: “Adverse situations in Mobile Pre-Hospital Care” and “Situations of violence experienced in the MPHIC work routine”. This last category was created because it stood out, in addition to being comprised by questions that were “almost” unsurpassed with the available resources and risks. According to Bardin<sup>21</sup>, the categories should emerge from the participants' testimonies as a large cluster considering the pertinence, homogeneity, objectivity, fidelity, productivity and mutual exclusion criteria.

The current study followed the recommendations set forth in Resolution No. 466/12 of the National Health Council (*Conselho Nacional de Saúde, CNS/MS*). The project was approved by the Ethics Committees of the institutions involved.

## RESULTS

The study participants were 32 professionals aged between 30 and 65 years old, 21 (65.6%) of them female. The majority belonged to age group from 31 to 40 years old (43.7%). Regarding the training area, 13 were nurses (40.6%), and there were nine physicians (25%), six nursing technicians (21.8%) and four ambulance drivers (12.5%). Among the participants, 14 had some specialization (46.8%), 17 had a training time between 11 and 15 years (34.3%), 18 had worked in the SAMU between one and 10 years (56.2%), and two had done so for more than 20 years (6.2%). As for employment contracts, 19 were statutory (59.8%), 13 were hired (40.6%), and 26 had more than one job (77.1%).

### Category 1: Adverse situations in the pre-hospital care routine

The participants reported the unpredictability of the occurrences since, normally, the teams were referred for service calls without prior knowledge of the places and diagnosis of the victims.

The interviewees pointed out limitations and difficulties during the SAMU service calls. They encountered severely-injured patients, elevators with not enough space for the stretcher, narrow staircases, steep ground and low luminosity, in addition to providing care on public streets.

The work performed by SAMU professionals has its own dynamics permeated by singularities in the different care *loci*. Therefore, the work routine is changeable, variable and inconstant, and it includes situations that require willingness from the professionals to face risks and use available resources.

Thus, the professionals reported tactics to overcome adversities at the care scene, protect themselves and also protect the families in the face of situations for which they were prepared, using codes.

From the interviewees' testimonies, it was observed that the SAMU professionals' work routine, full of unpredictable events, demanded reinventions and tricks from the team to overcome the hostile situations they came across, aiming at fast, coordinated and efficient care. Figure 1 presents the topics and testimonies contributed by the participants.

Topics	Testimonies
Unpredictability	<p><i>Everything is possible, you're always attentive to situations that may occur, from operational risks to the very course of action, they're inexhaustible because it's a multifaceted environment. (Ph09)</i></p> <p><i>When a case drops in, we never know what will happen [...] but we never know for sure what we'll find when we arrive at the site. (N24)</i></p> <p><i>You provide care to a traumatized patient, unconscious and with no family member around. You can't get information and have to work blind based on the patient's clinical condition. He's got altered conscience, movement, pupils, heart frequency, and pulmonary auscultation. You approach the patient in an incomplete way and put them at risk. (Ph10)</i></p> <p><i>The other day we responded to a heart arrest call at a construction site. I realized that the lights from the other houses were on and that those at the victim's house were off. I asked the guy who called the SAMU why there was no light and he said that there has been a power surge. Then, I went in with a flashlight, watching the place, and saw a wire under the victim. Actually, it hadn't been a heart arrest but an electric shock, and if I had laid a hand on the victim, I'd have become a victim myself. (D14)</i></p>
Limitations	<p><i>The building's elevator that can't fit the patient is a problem. We've already put the patient tied up to the board, put a sheet on the feet so he didn't slip, and carried the board standing up in the elevator. (N12)</i></p> <p><i>Sometimes you have to carry out procedures in places that aren't suitable regarding luminosity and safety. (N05)</i></p> <p><i>There are obese patients that live in a tiny room and taking them out is really hard. There were already cases in which we had to call in the firefighters because the patient didn't fit on the stretcher. (N08)</i></p> <p><i>I once had to leave the "favela" in a hurry with a shot patient because there had been a slaughter and three were to die but only two died, and the guy came back to kill the third. We carried the man on the shoulders and ran out with him to the ambulance through the alleys because the ambulance wouldn't come in. (N01)</i></p>
Tactics	<p><i>The other day I went to check a death case and, when I was going to print, the ECG tape had run out, the ambulance was far away and we were in the apartment, I said to the physician: "we ran out of tape". We're used to leaving the tape with the family, but in that case, slyly, we showed the screen and said: "The heart stopped". (N05)</i></p> <p><i>In our work there are unexpected situations, even in the talk between the physician and me about the procedure to be done or not. We use some codes so that we understand each other (...) Things like that, not standard at all. (N12)</i></p>

**FIGURE 1:** Topics and testimonies contributed by the participants about adverse situations in the pre-hospital care routine. Belo Horizonte, MG, Brazil, 2020.

## Category 2: Situations of violence experienced in the SAMU work routine

According to the data collected (Figure 2), the SAMU professionals were constantly exposed to risks at the care scene, such as the presence of people with fire arms, threatening their physical integrity, along with pain and fear.

Topics	Testimonies
Risk at the care scene	<i>We're exposed to any type of situation (...) There were already cases in which we were providing care to a patient shot by a firearm and people approaching us and finishing with the person. (N02)</i> <i>As for psychotic outbreaks, you arrive and the delusional patient grabs you. (T22)</i>
Physical aggression	<i>Getting to the occurrence site, with a firearm victim, and people throwing stones at us. (D08)</i> <i>She woke up and threw a chair at us. I got punched on the ribs. (N12)</i> <i>Physical aggression, I've already had many episodes (...) I've already been kept hostage in the ambulance because the patient was "high" and grabbed me inside it. (NT22)</i>

**FIGURE 2:** Topics and testimonies contributed by the participants about Situations of violence in the SAMU work routine. Belo Horizonte, MG, Brazil, 2020.

The SAMU teams faced difficulties, mainly when serving in communities and having to deal with a diverse clientele, including users in mental distress, offenders and addicts to chemical substances, in addition to the family members that could become aggressive against the professionals.

In relation to violence at the workplace, the MPHIC teams faced difficulties since, when solicited to an event, they were unaware of the place and situation in which they would be entering, frequently encountering hidden risks in houses, commercial facilities and communities, which rendered them vulnerable to many types of violence.

## DISCUSSION

Normally, routine is invisible and would go unnoticed, but there are interesting events that deserve to be studied. In everyday life there are the "arts of doing" and it is the place for freedom and creativity, where social practices are articulated. It is what is given each day, it is always moving and, many times, subvert the routines. As the ways of doing are creative, the invention of everyday life is singular and is constituted of disruptions. Men who practice these actions do not master the unpredictable routine; consequently, they need to be creative, astute and dynamic<sup>8</sup>.

The diverse situations in the work routine of the SAMU teams were characterized by unpredictability, multiple and diversified care contexts, celerity and aggressions when faced with the unexpected, in addition to exposing the professionals to conditions that were not always favorable for the assistance to be provided to the users. A study revealed that MPHIC professionals were exposed to occupational, chemical, physical, biological and ergonomic risks, especially in unexpected situations, which characterized a large part of the emergency service calls<sup>22</sup>. The acknowledgment regarding control and evaluation of those risks must be performed every day by the team and institution, aiming at prevention towards the users, as well as periodic training opportunities for the professionals and use of protective measures such as Personal Protective Equipment during the service calls.

The work of these professionals has its own dynamic, permeated by singularities concerning different service *loci* and the circumstances that differentiate it from other health services, in addition to the victims that oftentimes present a variety of symptoms, critical and unstable conditions, and life risk<sup>23</sup>. According to the *Emergency Nurses Association*, agile and rapid decision-making, determining the priorities and correct intervention, is directly related to the efficacy and quality of the care provided by the MPHIC professionals<sup>24</sup>.

The work routine of the SAMU professionals is based on norms and routines, which correspond to what is predefined, static and instituted by the protocols that guide the performance of actions, which is equivalent to the prescribed work or strategies, as defined by Certeau<sup>7</sup>. On the other hand, real work reflects the daily routine of these professionals, as it happens dynamically and unpredictably and, many times, transcends what is established<sup>25</sup>. In unexpected situations, the professionals extrapolated what was prescribed in protocols so they could manage to provide assistance to the users in not-so-favorable situations. Therefore, from the Certeauian perspective, prescribed work corresponds to strategies while actual work corresponds to tactics.

Before the challenges and complexity of the care scenes, the professionals smartly adopted ephemeral and silent tactics, and, thus, created new ways of doing during the service calls, trying to save lives and/or reduce sequels. Thus, the MPHIC dynamic care routine demands technical skill from the professionals, as well as scientific knowledge, aptitudes, resilience, improvisation and physical preparedness to act safely in a context marked by unpredictability<sup>26</sup>. These competencies are essential for facing borderline life situations and marked by intense pressure since, in many cases, it is necessary that the professionals remain at the care site, not always safe, until stabilization of the victim.

It is important to note that, through tactics, the SAMU professionals created a way of doing adapted to the scene and intentions of the subjects that experienced the routine, allowing for a resignification of the everyday

practices, which included new ways of acting when faced with reality<sup>8</sup>. Tactics were used in a subtle and visible way, but they were invisible at times, granting professionals autonomy to reinvent their actions when faced with non-planned situations.

In an adverse situation like a heart arrest, the use of non-verbal language and codes shared by the SAMU team members became a tool used during the service calls in which the situations demanded discretion and celerity, without harming the patient's family, which was already concerned with the situation of their loved one. In this sense, a code (tactic) optimized and leveraged the care service calls by means of non-verbal language that, in many unpleasant situations, was the only alternative for to be able to control a given situation<sup>27</sup>.

Violence is a public health problem and the professionals that deal with this kind of exposure every day need to be trained to solve these situations in the work environment<sup>28</sup>. The professionals reported physical violence events suffered by the team when providing care, and many of these aggression events and threats were perpetrated by drunk patients, in mental distress, addicted to chemical substances and drug dealers, who tend to show aggressive behaviors. There is also lack of knowledge concerning the approach of the pre-hospital mobile care service in psychiatric cases, noting the importance of permanent education as a support strategy for a more effective, safe and quality approach.

A research study revealed physical and verbal aggressions suffered by MPHC professionals in the city of Rio de Janeiro. It is noted that, in addition to being exposed to different violent situations, when providing care in highly dangerous places, the professionals needed to call the police to intervene in some cases<sup>29</sup>.

Cases of occupational violence against MPHC professionals are also a reality in the Czech Republic, with the most part of the aggressions coming from patients themselves. Violent situations occurred both in the ambulance and on the streets, mostly perpetrated by male individuals and triggered by unfavorable socioeconomic contexts, drunk and drug-addicted users and stress, among other reasons<sup>30</sup>.

In a study carried out on violence against emergency service professionals in 13 countries, high occupational risk rates were identified, with emphasis on physical violence (65%) and with some of these assaults (10%) involving use of firearms<sup>31</sup>.

Thus, it is understood that the service should ensure the safety of the MPHC professionals during the service calls, becoming necessary to articulate the territory Intersectoral Health Care network, involving health, social, safety and other devices that can protect professionals and users alike.

In health services, the strategies presume the existence of behavioral prescriptive rules, so that the expected care occurs and adapted to the context. Therefore, faced with inherent risk, the professionals should use strategies to prevent and/or reduce potential risks by applying protocols, manuals, checklists and updated training that serve as safety organizational barriers, in order to avoid the occurrence of errors that result in incidents<sup>32</sup>.

However, before the adversities that arose in the work routine, they needed to make use of tactics, that is, tricks that infiltrate into social heterogeneity, dodge, insinuate and oppose, although not trying to dominate or win. These tactics are operated "blow by blow", "move by move" and do not try to face strategies, but come up to meet the needs that were not solved by means of strategies, as they hide behind the appearance of conformity. Sometimes, the recurrent adoptions of a given tactic can lead a man to represent it, and the tactic itself can be incorporated as a service strategy<sup>8,33</sup>.

### Study limitations

The fact that this study was carried out in a single service represents a limitation, as it can hinder generalization of the adverse situations to which the professionals are vulnerable due to the particularity of each context. In addition to that, it is necessary to emphasize the impossibility of performing observations due to the social distancing imposed by the COVID-19 pandemic, at the research time. However, the results presented can serve as a basis for new research studies on other SAMU unities, in order to identify the dimension of this problem, especially in pre-hospital services where there are gaps on the subject matter.

## CONCLUSION

The results show routine work that underwent different nuances in the face of adverse situations, in which the professionals created new ways of providing care. In this perspective, the professionals that manned the ambulances became the main protagonists of the care provided in the sense of attributing new meanings to everyday life, creating their own ways of doing in a subtle and specific way in the face of unexpected situations, that is, the reality that is not written in manuals.

The study identified adverse situations for the users in diverse care situations and contexts, resulting from the type of training of the team members, unpredictability in the service calls, exposure to risks, physical aggression to the professionals, and difficult-to-access houses. Identifying these adverse events should be part of the routine both before and during the service calls. In addition to that, implementing preventive measures reduces the risk of incidents for the patients.

Strategies must be deployed concerning the implementation of protocols on patient safety; identification of adverse situations in the care routine; offering practical training to beginning professionals for them to acquire experience in how to perform procedures such as prevention of risks in patient care; and provision of monthly training, addressing topics with the most notifications and/or suggestions by the team itself. Finally, it is observed that the adverse situations experienced in the SAMU teams' everyday work represent a major challenge.

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Conceptualization, M.S.S. and M.A.; methodology, M.S.S. and M.A.; software, M.S.S.; validation, M.S.S.; formal analysis, L.M.S.S. and M.A.; investigation M.S.S. and M.A.; reourcers, M.S.S. and M.A.; data curation, M.S.S. and M.A.; manuscript writing, M.S.S., D.M.S., I.C.M.C., P.F.E.V.V. and M.A.; writing—review and editing, L.M.S.S., D.M.S. and M.A.; visualization, M.S.S., D.M.S., I.C.M.C. and P.F.E.V.V.; supervision M.A.; project administration, M.S.S. and M.A. All authors have read and agreed to the published version of the manuscript. All authors have read and agreed to the published version of the manuscript.