

Original Research

Physical activity promotion in community pharmacies: pharmacists' attitudes and behaviours

Rúben VIEGAS , Cristina A. GODINHO , Sónia ROMANO 

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Abstract

Background: Health systems and their professionals play a key role in the promotion and maintenance of behaviours contributing to increased physical activity levels. Pharmacists are well placed within communities, making them an accessible source to provide brief advice to people on how to be more physically active.

Objective: This study aimed to characterize physical activity promotion actions taking place in the Portuguese community pharmacies, as well as the major facilitators and barriers faced by pharmacists in their daily practice.

Methods: A cross-sectional study based on an online questionnaire targeting community pharmacists was developed based on COM-B model and the Theoretical Domains Framework (TDF) and distributed by email to 94% of the Portuguese pharmacies.

Results: In total, 396 complete responses from community pharmacists were obtained. Three out of four participants reported to promote physical activity in their daily routine, of which 87.7% reported doing it in only a few attendances. The majority (92.3%) mentioned to provide information orally, with walking being the activity most promoted (99.4%). More active and younger pharmacists were more likely to promote physical activity. Nearly all pharmacists (98.7%) believed it was important or very important to practice regular physical activity for the health, but only 41.4% of the respondents were able to correctly identify the WHO general recommendations for physical activity. The lack of coordination with other healthcare professionals ($M=3.35$; $SD=1.11$), lack of interest by customers ($M=3.25$; $SD=1.09$) and lack of time ($M=3.06$; $SD=1.10$) were the main barriers to physical activity promotion, all scoring above the scale mid-point (i.e., 3).

Conclusions: Physical activity promotion in the Portuguese community pharmacies is still not present as daily activity. Younger pharmacists seem to be a generation that better understand this need and could easily integrate this practice in their daily routine. Possibilities for including pharmacies and pharmacists as promoters of physical activity in the primary health care sector in the future are discussed in the light of these findings.

Keywords

Exercise; Pharmacies; Pharmacists; Community Pharmacy Services; Health Promotion; Walking; Attitude; Surveys and Questionnaires; Cross-Sectional Studies; Portugal

INTRODUCTION

Physical activity has many benefits for health. It has a very important role in body composition, allowing better insulin sensitivity, immune response, and psychological well-being.¹ For twenty-six different chronic diseases, there is strong evidence that physical activity can improve patient's health when integrated in the treatment plans.² It is now recognized that even some activity is better than none and even low levels of activity can lead to health benefits.³

Although the benefits are clear, the latest data from the Eurobarometer shows that the levels of physical inactivity are still very high and there is still much to do regarding physical activity promotion. In Portugal, 68% of individuals never exercise or play sports and 64% never engage in other physical activities such as cycling, dancing, or gardening.⁴

The healthcare sector is of extreme importance for the promotion of physical activity, as underscored in point 3.2 of the Global Action Plan for Physical Activity 2018-2030.⁵ Healthcare professionals are a recognized and trusted

source of information and can assume an active role in supporting the behaviour change process of their patients.⁶ In addition to that, healthcare professionals interact with a large number of people on a daily basis, especially the elderly, under-privileged or disadvantaged people, and those with poor health.^{7,8}

Pharmacies and pharmacists are one of the most available and widespread healthcare resources to the patient, with the provision of different health services and the integration with community-based partners.^{9,10} Pharmacists are trained health professionals with a strong educational background that can convey messages related to lifestyle choices, including general advice and support for the practice of physical activity.¹¹ Another important role is the signposting of local opportunities, such as walking groups or local initiatives for other activities.¹² Physical activity promotion in community pharmacies is an important part of most educational activities related to lifestyle changes and health-promoting services that are not often represented in these studies.¹³ Examples of interventions to improve physical activity in this setting can be found, although they are not common and often explore only a specific condition or sample.¹⁴ Similar studies conducted on the same topic can be found, but focusing on other healthcare professionals.^{15,16}

Theories of behaviour change can support the identification of the main drivers and challenges faced by pharmacists in this regard. One integrative and comprehensive model of

Rúben VIEGAS. Faculty of Human Kinetics, University of Lisbon. Lisbon (Portugal). rubenviegas23@gmail.com

Cristina A. GODINHO. Católica Research Centre for Psychological, Family and Social Wellbeing, Catholic University of Portugal. Lisbon (Portugal). godinhocrisina@gmail.com

Sónia ROMANO. Centre for Health Evaluation & Research (CEFAR), National Association of Pharmacies (ANF). Lisbon (Portugal). Sonia.Romano@anf.pt



behaviour is the COM-B model, which links three main components as sources of behaviour: Capability (defined as the individual's psychological and physical capacity to engage in a specific action, including having the necessary knowledge and skills), Opportunity (defined as all the contextual factors – physical and social - that make the behaviour possible or prompt it), and Motivation (defined as all processes that energize and direct behaviour, including habits, emotional responses, as well as analytical decision-making).¹⁷

This study aimed to characterize the physical activity promotion actions conducted in the Portuguese community pharmacies and to identify the main barriers and facilitators that influence the promotion of physical activity by pharmacists in their daily routine, based on the COM-B model. This will be an important first step to reveal what can be done to better promote physical activity in the pharmacy context in the future.

METHODS

A convenience sample of 2,745 community pharmacists was invited to participate in this cross-sectional study, representing 94% of the national coverage.

A link to a survey, developed through QUALTRICS® platform, was sent via email by the Centre for Health Evaluations and Research (CEFAR) from the National Pharmacies Association (ANF), to the directors of the pharmacies affiliated to this group, who were asked to share it with all certified pharmacists working in community pharmacies.

The responses were collected from the 29th of November 2018 to the 20th of December 2018. Participants were informed about the study objectives and asked to provide their informed consent prior to filling in the online survey. The study protocol was reviewed by the Ethical Commission of the Faculty of Human Kinetics and was approved with the number 18/2018, complying with the national ethical requirements and legal procedures.

The online survey that was used to assess and characterize physical activity promotion in the Portuguese community pharmacies followed a similar structure to previous surveys directed at the medical doctor's community and included four blocks: (1) professional and sociodemographic characteristics, including questions on pharmacists' gender, age, years of professional experience, pharmacy geographical location and the profile of the average customer; (2) physical activity promotion actions, including the frequency, the type of promoted physical activity (e.g., interrupting sedentary behaviour, active transportation), as well as the types of promotion actions (e.g., provision of verbal or written information, referral to community services, etc.), the resources and services in the community used for referral and the specific activities promoted by the pharmacists; (3) pharmacists' physical activity levels, including questions to assess the frequency and duration of weekly moderate-to-vigorous physical activity and the number of hours per day spent in sedentary behaviours, based on the IPAQ questionnaire; (4) facilitators and barriers regarding physical activity promotion in the pharmacy context. This last block was developed by

applying the COM-B model and the Theoretical Domains Framework to the Portuguese context of community pharmacies and physical activity promotion.^{16,19} It included questions on attitudes and knowledge related to physical activity, and a set of other 15 barriers and facilitators mapping onto the different domains of the COM-B: four in Capacity, five in Opportunity and six in Motivation, which respondents rated on a scale ranging from 1 (not likely to be a barrier) to 5 (frequently a barrier).

Data analysis was performed using the SPSS version 20. Only completed questionnaires were analysed. A dropout analysis was conducted to verify whether any differences in gender and age existed between those who completed the questionnaire and those who did not. Descriptive statistics were used to characterize the different aspects of physical activity promotion. Some continuous variables were previously recoded into categorical variables, to allow specific group comparisons in relation to age (i.e., <35 years; 35-45 years; >45 years), years of experience (i.e., <10 years, 10-20 years, >20 years) and physical activity level (i.e., <150 mins/ week; 150 mins/week or more). To inspect bivariate associations between study variables, either chi-square tests (when the dependent variable was categorical), t-tests or ANOVA (when dependent variables were metric) were used to determine if there were any significant differences between groups. To examine whether potential barriers for physical activity promotion differed statistically from the scale mid-point (3), both in the sense of not being a barrier at all or being frequently a barrier, one sample t-tests were performed. A p-value of <0.05 was considered statistically significant. The adequate level of physical activity was defined as doing 150 min/week or more.²⁰

RESULTS

The survey had 537 opens in total, from which 396 (73.7%) were fully completed and, therefore, considered in the analyses (dropout rate of 26.3%). There was no significant difference in the dropout rate in relation to gender (chi-square(1)=0.48, p=0.49) and age (t(88.42)=0.57, p=0.56). The majority (81.1%) were female, with an average age of 39.8 years (SD=9.7) and an average time of experience working in community pharmacy of 14.3 years (SD=9.0). Regarding training, 84.8% reported not having any pre or postgraduate training in the area. Only 37.6% of the pharmacists were compliant with the recommendation of 150 minutes per week of moderate physical activity (Table 1).

Three out of four respondent pharmacists reported that they promote physical activity in their daily routine. From those, 87.7% mentioned doing it in approximately half of the attendances or in only a few. More active (>150 min of PA/week; chi-square(1)=19.07, p<0.001) and less experienced pharmacists (<10 years of experience; chi-square(2)=10.04, p<0.01) were more likely to promote physical activity in their professional practice, while older pharmacists (>45 years; chi-square(2)=8.87, p=.01) tended to do it less than younger pharmacists. Regarding the specific physical activity promotion activities, the majority (92.3%) mentioned to provide verbal information, contrasting to providing written information (19.0%) or



Characteristic; mean (SD)	N (%)
Age; 39.8 (9.7)	
<35	144 (36.4)
35-45	141 (35.6)
>45	111 (28.0)
Gender	
Male	75 (18.9)
Female	321 (81.1)
Years of experience; 14.3 (9.0)	
0-10	138 (34.8)
10-20	146 (36.9)
> 20	112 (28.3)
Training in PA	
Yes, pre-graduation	47 (11.9)
Yes, post-graduation	13 (3.3)
No	336 (84.8)
Region	
North	127 (27.2)
Centre	124 (26.6)
Lisbon	159 (34.0)
Alentejo	20 (4.3)
Algarve	26 (5.6)
Azores	2 (0.4)
Madeira	9 (1.9)
PA practice by pharmacists	
< 150 min / week	149 (37.6)
150 min / week or more	247 (62.4)
Sedentary behaviour (hours of sitting time per day) 3.6 (2.2)	396
Self-rated knowledge on PA	
Very low	5 (1.3)
Low	41 (10.4)
Medium	254 (64.1)
High	83 (21.0)
Very high	13 (3.3)
Importance of PA promotion in pharmacies	
Not important	0 (0)
Lowly important	3 (0.8)
Neither a lot nor a little important	17 (4.3)
Important	172 (13.4)
Very important	204 (51.5)

referring clients to specific activities, such as walking groups (23.5%).

Walking was the most promoted activity, with 99.4% of pharmacists reporting to promote it, followed by swimming, hydro-gymnastics, or aquatic activities (64.5%). Table 2 summarizes the physical activity promotion initiatives.

More than a half of the pharmacists (58.4%) reported that they were never or rarely approached with questions regarding physical activity by their clients. Regarding future possibilities in this area, 73.5% agreed that a specialized service with a professional from the physical exercise area in the pharmacies would be important or very important. Women were more likely to emphasize the importance of this service than men ($t(103.16) = -2.91, p < 0.01$). Overall, nearly all pharmacists (98.7%) believed it is important or very important to practice regular physical activity for the health and 94.9% believed it is important or very important to promote it in the pharmacies.

Only 24.3% of the pharmacists reported having high or very high levels of knowledge about physical activity. The ones that considered they had more knowledge were individuals

PA promotion initiatives	N (%)
Promotes PA for clients	
Yes	310 (78.3)
No	86 (21.7)
Frequency of PA promotion	
Never	1 (0.3)
In a few attendances	191 (61.6)
In nearly half of attendances	81 (26.1)
In most attendances	37 (11.9)
In all attendances	0 (0)
Area of PA promotion	
Sedentary behavior	156 (39.4)
Active transportation	93 (23.5)
Physical exercise/ sports	242 (61.1)
None of the above	1 (0.3)
Types of physical activity promotion (N=310)	
Evaluation of the performed physical activity	38 (12.3)
Written information (ex. Leaflets)	59 (19.0)
Verbal information (ex. Suggestions of activities to perform)	286 (92.3)
Selling sports supplements	72 (23.2)
Measuring biometric parameters that relate to physical activity	82 (26.5)
Referral to community resources to practice more physical activity	89 (28.7)
Promotion of activities (ex. Walking groups)	73 (23.5)
Sports nutrition consultation	51 (16.5)
Resources/Services in the community used for referral (N=89)	
Gyms	60 (67.4)
Walking groups	49 (55.1)
Activities promoted by the local authorities	45 (50.6)
Activities promoted by schools	14 (15.7)
Activities promoted by senior universities/ daycare centers	30 (33.7)
Activities promoted by the pharmacy itself	19 (21.3)
Types of physical activity advised more frequently (N=310)	
Walking	308 (99.4)
Running	26 (8.4)
Swimming / Hydro gymnastics / Aquatic activities	200 (64.5)
Gym classes (Fitness classes, Bodybuilding, etc)	51 (16.5)
Modalities (Football, Martial Arts, Athletics, etc)	12 (3.9)
Gymnastics classes	29 (9.4)
Dance activities	39 (12.6)
Activities like Yoga, Pilates or stretching	89 (28.8)

with previous training in physical activity ($F(1, 403) = 19.87, p < 0.001$) and the ones that were more active ($F(1, 394) = 18.81, p < 0.001$). Men also reported to have more knowledge in this area ($M = 3.28, SD = 0.77$) than women ($M = 3.11, SD = 0.68$), but this difference was only marginally significant ($t(425) = 1.89, p = 0.06$). In the same vein, only 41.4% were able to correctly identify the WHO general recommendations for physical activity.

More active individuals (>150 min of PA/week) were more confident to promote physical activity for people with metabolic disease ($t(390) = 2.03, p = 0.04$). Less experienced ($F(2, 393) = 3.52, p = 0.03$) and younger ($F(2, 393) = 5.93, p = 0.01$) pharmacists showed more confidence to promote it to the adult population and younger pharmacists were also more confident in promoting it to children as well ($F(2, 390) = 3.99, p = 0.02$).

The lack of coordination with other healthcare professionals ($M = 3.35; SD = 1.11$), lack of interest by

customers (M=3.25; SD=1.09) and lack of time (M=3.06; SD=1.10) were the main barriers, all scoring above the scale mid-point (i.e., 3), although only the first two were significantly different. Not being part of the role of the pharmacist (M=1.82; SD=1.04) and lack of interest in promoting it (M=1.58; SD=0.83) were rated as less likely to be a barrier (Table 3).

Regarding the specific barriers, more active individuals (>150 min of PA/week) rated "lack of technical knowledge in the area" (t(391)=3.66, p=0.01), "afraid of the health risks" (t(389)=0.19, p<0.001) and "not knowing opportunities for referral in the community" (t(390)=3.90, p=0.01) as less important barriers, when compared to less active individuals. Individuals with previous training in physical activity rated "lack of technical knowledge in the area" less as a barrier than non-trained individuals (t(391)=0.60, p=0.03). Younger pharmacists found "lack of time" (F(2, 391)=3.64, p=0.03) and "lack of interest by clients" (F(2, 390)=28.91, p<0.001) as more important barriers compared to older pharmacists. Less experienced pharmacists also found "not knowing opportunities for referral in the community" (F(2, 390)=5.37, p=0.01) and "forgetfulness" (F(2, 389)=4.31, p=0.01) as bigger barriers than more experienced pharmacists.

DISCUSSION

The promotion of physical activity remains a critical factor for population's health and well-being, and pharmacies and their professionals can play a very important role in this regard. This research provides a characterization of the current practices of pharmacists in relation to physical activity promotion in the context of Portuguese community pharmacies. Moreover, it describes some of the factors that may be related to it, such as one's own physical activity levels, knowledge, attitudes and perceived barriers.

The most frequently referred means of promoting physical activity in the pharmacy was verbal counselling. This is not surprising, as it has a better fit with the current practice of pharmacists, which relies on consecutive short contact periods of time with the customer. Moreover, this type of counselling is also the most frequent when looking at studies on medical doctors promotion of physical activity.²¹

Adding simple tools such as the "Ask-Assess-Advise" or digital tools that have developed for the primary healthcare context can take few minutes and improve the promotion of physical activity.^{22,23} However, adequate training should be provided to professionals before the provision of these forms of brief counselling.

Similar results including low written information levels were found in the medical community.²¹ The increase of written information could be a simple way to increase literacy about the recommendations, benefits and simple ways to integrate more physical activity in the daily life, especially among the elderly.

The promotion of walking was reported by 99.4% of the pharmacists. This may indicate that the accessibility of walking and the low risk of the activity is an important feature for the pharmacists. The organisation of walking groups can be a very important contribution for the increase of the community's physical activity levels.²⁴ This is already a common practice in some pharmacies, that already organize walking groups as public health initiatives, some of which have the pharmacy as the meeting point.²⁵ According to the Eurobarometer, the elderly also indicate walking as their preferred activity, which supports the positive acceptance of these initiatives.⁴

Some actions like selling sports supplements or consultations on sports nutrition have been considered by pharmacists as actions for the promotion of physical activity. In fact, nutrition is a close ally to physical activity and advice on nutrition and food supplements are also part of the scope of the pharmacists, potentially bringing important results in health to the pharmacy users.²⁶ Nevertheless, this may also reveal some misunderstanding on what physical activity promotion in the scope of public health is, what it includes and how to promote it. Although a good synergy of both areas is beneficial, healthcare professionals should be able to distinguish them in order to maximize the promotion of each.²⁷ Also, it is important to ensure that commercial interests do not overlap with the patient's health at any point, for pharmacists to be able to fulfil this role of public health promoters.²⁸

Even though pharmacists are capable of interpreting

Table 3. Descriptive statistics regarding barriers for physical activity promotion and t-test results against scale mid-point

Barrier	n	Mean (SD)	t	df	p-value
Capacity					
Not knowing opportunities of referral in the community	404	2.98 (1.10)	-0.36	403	0.710
Lack of technical knowledge in the area	405	2.82 (1.05)	-3.47	404	0.001
Forgetting	403	2.78 (1.11)	-3.98	402	<0.001
Not knowing exactly what to do/what to say counselling about physical activity	401	2.46 (1.10)	-9.88	400	<0.001
Opportunity					
Lack of coordination with other health professionals	405	3.35 (1.11)	6.32	404	<0.001
Lack of immediate interest of costumers	404	3.25 (1.09)	4.64	403	<0.001
Lack of time to promote physical activity	405	3.06 (1.03)	1.13	404	0.260
Lack of a proper space for this promotion	405	2.86 (1.24)	-2.21	404	0.030
Not usual this kind of counselling	405	2.66 (1.05)	-6.58	404	<0.001
Motivation					
Afraid of the health risks	403	2.75 (1.04)	-4.77	402	<.001
Lack of relevance during the counselling	403	2.80 (0.95)	-4.20	402	<.001
The costumers of this pharmacy have so many other problems that practicing more physical activity does not represent a priority	404	2.31 (1.01)	-13.73	403	<.001
There are no incentives for the promotion of physical activity in the pharmacies	405	2.66 (1.17)	-5.76	404	<.001
I don't have great interest in the promotion of physical activity	401	1.58 (0.83)	-34.23	400	<.001
Promotion of physical activity is not part of the role of the pharmacist	402	1.82 (1.04)	-22.83	401	<.001

parameters related to physical activity, the measurement of these parameters, such as weight or waist circumference could serve as an indicator for referral to the community structures that can support those patients, but this is still not common in light of our results.²⁹ Regarding the inclusion of a specialized professional in the area as a differentiated service, most pharmacists also agreed it could be important. Exercise physiologists are suited allied health professionals that could also have dedicated consultations in the pharmacy setting to help prescribe physical activity to patients, something that is outside of the scope of the pharmacists.³⁰ Community pharmacists should be aware of opportunities in their local settings to refer individuals to other facilities for the assessment, follow-up and maintenance of behaviors linked to more physical activity.

Almost all pharmacists agreed that physical activity promotion is important or very important for the health of the population, especially the younger ones, and that it should be done in the pharmacies. This is a strong indicator that pharmacists are motivated to promote physical activity, which is consistent with results of other studies showing they are keen on expanding the scope of services they offer.³¹ Our results showed that younger pharmacists tend to report higher levels of physical activity practice and are also more active regarding its' promotion. This may be due to younger generations having a broader perspective about healthcare and considering the need to be more active as an asset for health.³² However, to materialize it, there is a marked need to transform and scale up the health professional's education and training.³³

An investment in the capacitation of the pharmacists to promote physical activity could be envisioned, particularly when considering that almost 85% never had training in the area and that trained professionals tend to promote more and better physical activity.¹⁵ Only 41% of pharmacists were able to correctly identify the WHO guidelines on physical activity. Although this number is similar to those presented in studies focusing on other healthcare professionals, it certainly needs to be improved.³⁴ Moreover, sports pharmacy includes topics that are not often covered during the pharmacists' studies or professional development, such as doping, sports supplements, injury prevention and management and physical activity promotion and advice.³⁵ The pre-graduate education needs to be planned together with universities and national students' associations, so that more time can be allocated to this topic. As other studies revealed, students are aware of the need to acquire skills on the topic but there is a need to increase these subjects' relevance in the curricula.^{16,36} The post-graduate initiatives allowing the pharmacists to be up to date in terms of their role in physical activity promotion currently lie on the efforts of professional organizations such as National Pharmacy Associations and the Pharmaceutical Societies.

Considering the evidence that more active health professionals tend to promote more physical activity it is important to highlight that only around one third of our sample was compliant with the WHO recommendations for weekly minutes of physical activity.³⁷ These results were similar to those from other studies showing low levels of physical activity among healthcare professionals.³⁸ Hence,

promoting physical activity among pharmacists would also be an important goal. In contrast, the time they spend sitting on each day (i.e., less than 4 hours, on average), is below the cut-off time where sedentary behaviour represents a health risk.³⁹ As they normally work standing and walking around, low levels of sedentary behaviour are inherent to the professional activity of the pharmacists.

The most important barriers for physical activity promotion, in the view of pharmacists, lie in the opportunity domain, that encompasses both the social (e.g., social influences) and physical context (e.g., physical resources).¹⁷ This is in line with the most common barriers cited by other healthcare professionals, and points to the need of changing the setting of the pharmacy to a place where trained pharmacists can be found, with appropriate information and resources to fulfil the different needs of their customers in relation to physical activity.^{16,21} In fact, pharmacists mentioned that only few of their customers pose questions regarding physical activity, which may be linked to the low level of interest in physical activity and to the fact that the setting of the pharmacy is not currently seen as a place where physical activity can be discussed.⁴⁰ Hence, to transform the pharmacy setting into a place where physical activity is consistently promoted, a change in the mindset of customers but also of the pharmacy staff is needed.⁴¹ Also, it is important to highlight that more trained pharmacists are less afraid of the health risks, have more technical knowledge and know more opportunities of referral in the community.

There were some limitations in this study. Although the survey was sent to nearly all community pharmacies in Portugal, the response rate was low, increasing the risk of selection bias and lack of representativeness of the sample. Moreover, not all of those who started replying finished the questionnaire (26.3% dropout rate). Although the dropout rate was lower than in other similar studies, it is still possible that pharmacists responding were the ones that were already more interested in the topic.^{16,42} Hence, it is also possible that there could be an overestimation of the amount of exercise practiced due to the interest demonstrated on this topic.⁴³ Besides, although the study was targeted at community pharmacists, with this information being explicit when the study was disseminated by the technical directors of the pharmacies, there is nonetheless the possibility that other staff (such as pharmacy technicians) could have filled the survey as they might have had access to it. Despite these limitations, the widespread dissemination of the survey allowed to reach a fairly geographically diversified sample. Given the novelty of this topic, it also provides descriptive data that can support future investments in the pharmaceutical sector for physical activity promotion.

CONCLUSIONS

Although pharmacists already acknowledge its' relevance, physical activity promotion in the Portuguese community pharmacies is not yet part of the daily routine. Enhancing opportunities for physical activity promotion, such as brief counselling (including the provision of oral or written information), pharmacists' training, and strengthening the multidisciplinary work and its links with other structures of

support in the community, are important avenues for establishing the pharmacies as a place for the promotion of physical activity, where one can get reliable advice. Given the proximity and accessibility of community pharmacies for many people, this could be an important investment for increasing and sustaining the levels of physical activity of the population.

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CONFLICT OF INTEREST

No conflict of interest to declare.

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AUTHOR ROLES (CRediT)

Conceptualization: RV, CAG.

Data curation: RV, CAG, SR.

Formal analysis: RV, CAG.

Investigation: RV.

Methodology: RV, CAG.

Project administration: RV.

Resources: SR.

Validation: CAG.

Visualization: RV, CAG, SR.

Writing – original draft: RV.

Writing – review & editing: RV, CAG, SR.

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