



Knowledge and Practices of the Prescription of Physical and Sports Activities (PSA) by Doctors in Ouagadougou: Inventory

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Abstract

Introduction: The prescription of physical and sports activities (PSA) is discussed by doctors in Burkina Faso. **Objective:** To analyze the medical doctors' knowledge and practices of the prescription of PSA in Ouagadougou city. **Method:** A mixed-method exploratory study, data were collected using an online google forms survey of 135 doctors in 3 health districts in Ouagadougou city, and interviews with 23 doctors to February to June 2023. Quantitative data were processed using Epi-Info software, and qualitative data using the content analysis method. Test significance was set at $p < 0.05$. **Results:** Based on 48 specialists and 87 general practitioners, the results revealed that 97.04% of participants were aware of the importance of PSA for health, 91.11% said they are used to prescribing PSA to their patients. As for the prescription protocol, only 22.22% claimed they mastered it. A significant relationship emerged between seniority and PSA prescription ($p < 0.02$). Qualitative analysis reinforced these results in that the vast majority of interviewees claimed that they knew PSAs and used to prescribe them to their patients without any prescription protocol. **Discussion/Conclusion:** These results reveal that all participants have sufficient information on the importance of PSA for health. However, they do more to raise awareness than to prescribe, because prescription protocols are not applied. It also emerged that seniority was linked to PSA prescription. This could be explained by the fact that PSA as a means of preventing Non-Communicable Diseases (NCD) is a concept that emerged with modernity. In the light of these results, information/training strategies on PSA prescription protocols should be developed.

Keywords

Physicians, PSA, Prescription, Protocol, Prevention

1. Introduction

Physical and Sports Activities (PSA) are defined as any bodily movement produced by the contraction of skeletal muscles and the result of which is a substantial increase in energy expenditure compared to expenditure at rest, including not only exercise and sport but any leisure activity and even work at home (De Matos, Calmeiro, & Da Fonseca, 2009). Indeed, the terms of PSA include all practices whether they are sporting, competitive leisure, extreme or free during which the body is used, put into play and the along with any value (physiological, psychological and social) that the practitioner ascribes to it (Moudache & Hamouche, 2016). It includes all the movements of daily life, those performed during work and leisure time (Caspersen, Powell, & Christenson, 1985).

The benefits of physical activity (PA) on health are now widely demonstrated, both in primary prevention and in the field of curative care (Prévot-Ledrich et al., 2016). Physical activity is a determinant of physical condition and allows the maintenance of autonomy with improved quality of life at all ages of life (HAS, 2018). The question of the therapeutic action of PSA has long been recalled (Queval, 2011). The practice of adapted, individualized and regular physical activity can reduce the risk of developing Non-Communicable Diseases (NCD), facilitate recovery, treat fatigue, improve general well-being and prevent the occurrence of NCD complications (Slade et al., 2016).

However, physical inactivity has been identified as a risk factor for these non-communicable diseases (OMS, 2010). This is how the WHO has formulated recommendations on physical activity and sports. To do this, it invites member states to put in place policies to facilitate access to the practice of PSA (OMS, 2010). Despite this will, the current observation shows that physical inactivity has large proportions in the world. It appears that 23% of adults and 81% of adolescents (aged 11 to 17) do not meet the WHO global recommendations on physical activity for health (OMS, 2010). For example, in Europe, indeed, specifically in France, studies have revealed that only 45% of adults are 43% of 15 - 17-year-old and 11.5% of 11 - 14-year-old reach the levels recommended by the WHO (Prévot-Ledrich et al., 2016).

In Africa, the prevalence of physical inactivity among adults is estimated at 22.1% and reaches a level of 85.4% among school-going adolescents (OMS, 2010).

In Burkina Faso, there are few data on the level of daily physical activity per individual. What is known is that the majority of the population, 97.3%, was exposed to at least one common NCD risk factor (Hien et al., 2019).

In view of these findings on inactivity in general and with regard to the benefits of the practice of PSA on health, the WHO in its declarations recommends that doctors prescribe PSA because physical exercise has been identified as the most effective and the least expensive means having the most consensus in the scientific community in terms of prevention (Poirel, 2017). Moreover, the term "Prescription" refers to an act which consists in prescribing a treatment on a

document (prescription). It is an act by which a sworn health professional orders therapeutic recommendations to a patient (Rivière, 2017). The prescription is available to all acts of care, therapeutic (medicated or not), medical devices, recommendations and care protocols that are addressed to a patient or a group of people (Bazex, Pène, & Rivière, 2012). The prescription of PSA is understood in the sense of a measure concerning an individual carrying a proven pathology or risk factors with the aim of obtaining beneficial effects on his health or reducing his risk of complication (Barth et al., 2018). This prescription is provided by a health professional in charge of the patient according to the objectives to be achieved and the physical and psychological capacities of the individual (Pellegrin, 2014). To do this, PSA prescription support tools have been developed by several countries. These tools provide targeted and safe scientific approaches to the administration of physical activity for the patients with certain NCDs (Bize et al., 2012).

For example, the prescription guidelines for countries such as France take into account the following aspects into account:

- An examination of the patient's medical history and lifestyle;
- A complete examination of the physical condition, respiratory examination and musculoskeletal system;
- A physical fitness assessment;
- An evaluation of the level of cardiovascular risk at the PSA in the patient;
- Identification of cardio-respiratory and musculoskeletal contraindications or limitations to PSA;
- A definition of the patient's PSA needs and expectations;
- A motivational interview centered on the PSA;
- An individualized PSA prescription;
- A medical monitoring program (HAS, 2018).

In the light of what precedes, we can say that the prescription of PSA goes far beyond the framework of medical prescription to take into account parameters such as the physical condition, expectations, motivations and other parameters of the patient. The prescription of PSA cannot therefore be done verbally. Prescribing PSA to sick patients is part of the overall framework for promoting PSA and meets two specific needs (HAS, 2018). First, act upstream by emphasizing the prevention of a sedentary lifestyle; secondly, help improve the health status and quality of life of patients. It is in this sense that in the WHO reports, it is mentioned that the prescription must be the subject of a prerequisite, that is the patient's capacities must firstly be assessed, then determine their preferences in terms of physical and sporting activities and lastly, assess their state of motivation before setting goals (OMS, 2010).

The literature mentions that the written prescription of physical and sports activities associated with drug treatments can guarantee optimal management of patients suffering from chronic diseases compared to that which consists of verbally advising the practice of physical and sporting activities (HAS, 2018). A

written prescription would on average be twice as likely to be converted into action as oral advice (Jattan, 2018). The non-prescription of physical and sporting activities or the non-adoption of the sport-health approach would raise questions about the effectiveness of the practice of PSA on the advice of the attending physician.

The physical activities commonly practiced are: walking, cycling, gentle gymnastics, yoga, stretching and flexibility exercises, massages. There are many studies that describe the effect of PSA practice on NCD. For example, it has been shown that practicing moderate physical activity for 30 minutes five times a week, i.e., 150 minutes/week, can reduce the risk of stroke by 25% (OMS, 2019). Also, it has been reported that regular PSA helps maintain good insulin sensitivity (Scoatariu-Thiébaud, 2016). These authors mention that regular physical exercise lowers HbA1c by 10% to 20% and that endurance efforts promote the maintenance of type I muscle fibers and thereby insulin sensitivity (Scoatariu-Thiébaud, 2016). This is how some authors have designed a theoretical model for the management of type 2 diabetes through PA (Boiche et al., 2019). Regarding obesity, it has been reported that an energy expenditure necessary to maintain a weight loss of 10% is 1800 kcal/week (Bize et al., 2012).

Similarly, it was mentioned that a physical activity of average intensity of 30 minutes per day such as brisk walking (5 to 6 km/h), cycling at a good pace (up to 16 km/h) allows fight against overweight and obesity (Bize et al., 2012). Physical activity promotes better glycemic control mainly by improving the insulin sensitivity of peripheral tissues (Décary, 2008).

If at the level of Western countries, the effectiveness of the prescription of PSA as recommended by the WHO is a reality, at the African level, the time has come for declarations and reports for certain countries, in particular Tunisia. By way of illustration, the report of the multidisciplinary committee on prevention identified a list of 14 chronic pathologies that can be prevented or treated by prescribing physical activity (Bessais, 2020). It is in this sense that a health authority in this country declared: From now on, medical prescriptions will no longer be limited to the prescription of drugs, but will include the prescription of physical activities as a preventive treatment and improving the health status of patients.

In Burkina Faso, the general context is that the approach to the prescription of PSA is not effective and is most often carried out on oral advice from the attending physicians even if some of them claim that they prescribe the practice of PSA. It is to immerse ourselves in the realities of this situation that we wanted to look into this problem through the study of the knowledge and practices of doctors on the prescription of PSA in Burkina Faso.

2. Materials and Method

As both a descriptive and an exploratory study, it was achieved from February to June in 2023 in the form of an interview and a questionnaire. It was carried out

in the medical centers with surgical units and university hospital centers (UHC) in Ouagadougou city. The probabilistic method and the simple random technique were used to choose the targeted health districts.

The study population concerned doctors serving in these medical centers in the city of Ouagadougou. For the choice of interviewees, the non-probability method and the technique of sampling volunteers were used to carry out the survey by online questionnaire of the google forms type. Indeed, it is the statistical unit, i.e. the doctor working in these centers mentioned above, who voluntarily decides to complete the questionnaire. A total of one hundred and thirty-five doctors (135) dealing with NCD (diabetes, hypertension, cancer, gastroenterologists) and various pathologies completed the online questionnaire. The questionnaire comprises 16 items consisting of closed questions, multiple-choice questions and an open question.

The selection criteria were as follows:

- **be a doctor working in medical center with a surgical unit.**
- **be a doctor working in university hospital center.**
- **be a doctor regularly employed in these center.**

About the interview survey, twenty-three (23) doctors treating NCD (diabetes, hypertension, cancer, gastroenterologists, etc.) were included in the study, including 17 general practitioners and 6 specialist doctors. For the choice of interviewees, the non-probabilistic method and the reasoned choice technique were used. The data collected by the questionnaire were processed with the Epi Info software, version 7.2.4. The significance level of the tests was set at $p < 0.05$. Qualitative data was processed using the content analysis method. The analysis was centered on the different themes (knowledge of PSA, prescription of PSA). The three stages of content analysis, namely the transcription, the coding of information or the tri-themes and the processing itself were discussed (see the **Appendix**).

3. Results

The results of this study are presented in **Tables 1-4**.

Table 1 shows the distribution of the study sample from the questionnaire survey according to the different socio-demographic characteristics. Made up of 135 doctors, our study sample is composed of 62.22% men and 37.78% women, 83.70% of whom are between 25 and 35 years old; 14.07% are aged between 36 to 45 years old compared to 2.22% who are 46 years old and over. This study population comprises 77.04% with between 0 and 5 years of service, 18.52% with between 6 and 10 years of service and only 4.44% with more than 11 years of service. As for the specialty, there are 11.85% radiologists; 7.41% of cardiologists; 5.93% surgeons and 64.44% general practitioners. These results highlight not only the youthfulness of the interviewees in terms of age and seniority, but also the low participation rate of medical specialists in the study.

Table 2 indicates that the majority of doctors (97.04%) who participated in the study are aware of PSA. They claim they are used to prescribing PSA (91.11%)

to improve the mental and physical health of patients. Also, 79.36% of the latter indicate that they have the capacity to prescribe PSA to their patients. As for mastery of the PSA prescription protocol, only 22.22% declare that they master the prescription protocol. This table displays a gap between knowledge of PSA and mastery of the prescription protocol since among participants who say they prescribe PSA to their patients, few of them know the prescription protocol.

Table 3 highlights a significant relationship between PSA prescription and length of service with a significant Chi-Squared of 0.02. These results show that the seniority variable in the profession is correlated with the prescription of PSA

Table 4 summarises the information collected from the 23 doctors on their knowledge and prescription of PSA. It was revealed that the interviewees have enough information on PSA and its health benefits, as shown by the following key elements:

Table 1. Profile of participants.

| Socio-demographic characteristics | Frequency | % |
|-----------------------------------|------------|----------------|
| Years | | |
| 25 to 35 years | 113 | 83.70% |
| 36 to 45 years | 19 | 14.07% |
| 46 to 55 years | 2 | 1.48% |
| 55 to 65 years | 1 | 0.74% |
| Total | 135 | 100.00% |
| Sex | | |
| Women | 51 | 37.78% |
| Men | 84 | 62.22% |
| Total | 135 | 100.00% |
| Seniority | | |
| 0 to 5 years | 104 | 77.04% |
| 6 to 10 years | 25 | 18.52% |
| 11 years and over | 6 | 4.44% |
| Total | 135 | 100.00% |
| Speciality | | |
| Radiologist | 16 | 11.85% |
| Cardiologist | 10 | 7.41% |
| surgeon | 8 | 5.93% |
| Other specialties | 14 | 10.37% |
| Generalists | 87 | 64.44% |
| Total | 135 | 100% |

Table 2. Knowledge and prescription of PSA to patients.

| Terms | knowledge of PSA | | Prescription PSA | | Ability to prescribe PSA | | Prescription Protocol | |
|-------|------------------|--------|------------------|--------|--------------------------|--------|-----------------------|--------|
| | Frequency | % | Frequency | % | Frequency | % | Frequency | % |
| Yes | 131 | 97.04% | 123 | 91.11% | 107 | 79.36% | 30 | 22.22% |
| No | 4 | 2.96% | 12 | 8.89% | 28 | 20.63% | 105 | 77.78% |
| Total | 135 | 100% | 135 | 100% | 135 | 100% | 135 | 100% |

Table 3. Relationship between prescription and seniority.

| Seniority | Prescription of PSA | | | Chi-Squared | df | Probability |
|-------------------|---------------------|-----|-------|-------------|----|-------------|
| | No | Yes | Total | | | |
| 0 to 5 years | 6 | 98 | 104 | 7.2376 | 2 | 0.02* |
| 6 to 10 years | 4 | 21 | 25 | | | |
| 11 years and over | 2 | 4 | 6 | | | |
| Total | 12 | 123 | 135 | | | |

* $p < 0.05$.

Table 4. Summary of information related to knowledge and prescription of PSA.

| Terms | Verbatim | Key words |
|---|--|--|
| Knowledge of PSA | | |
| PA knowledge | Physical activity (PA) is a set of leisure, relaxation or competitive practices that allows energy to be spent | Activity that causes energy expenditure |
| | PA is a movement that generates an energy expenditure greater than the energy expenditure of the basal metabolic rate | Energy expenditure greater than the energy expenditure of basal metabolism |
| | PA is a set of movements that mobilizes the musculoskeletal, joint, etc. system | Activity that mobilizes the whole body |
| | The PA is a set of static or dynamic movements and hierarchized according to a grade | Categorized physical activities |
| Beneficial effects of regular PA practice on the health and well-being of individuals | PA helps prevent cancer, cardiovascular risks, | Prevents and fights against NCDs |
| | The PA fights against chronic pathologies | |
| | PA reduces morbidity linked to certain diseases such as hypertension, diabetes, stroke, Parkinson's disease, | improves health |
| | The practice of PSA leads to the secretion of endorphins, oxygenation of the brain, strengthens the heart, physical condition; improves digestion etc. | Proper functioning of the body |
| | The cure for longevity and eternity | Longevity |
| Knowledge required for prescribing PSA | Knowledge of physical medicine, sports medicine, knowledge of sports health, knowledge of the patient, their history, indication of physical activity according to the pathologies | Medical and sports knowledge |

Continued**PRESCRIPTION OF PSA**

| | | |
|---|--|--|
| Prescription of PSA | All of the respondents said they prescribe PSA. They add that: it's a good thing, it's imperative, it's the first stage of patient care, it's part of the hygieno-dietetic measures... | Prescription boiling down to awareness |
| Prescription of AP to patients and types of pathologies | To the elderly, Post COVID and bedridden people according to their possibilities, to all patients Metabolic pathologies such as high blood pressure (hypertension), diabetes, Obese patients, anxious, depressed individuals, fatty liver, functional intestinal disorders, chronic respiratory pathologies, heart disease, asthma, sleep apnea, COPD, post-stroke. | Elderly people and all patients Metabolic pathologies Chronic diseases |
| Types AP Prescribed | Brisk walking, jogging, gymnastics, swimming, cycling Rapid dropout of certain patients. Low level of motivation, ... | PSA (non-competitive) Low motivation |
| Difficulties encountered when prescribing PSA | . Socio-professional constraints, socio-cultural contrainte Lack of knowledge of the volume-intensity relationship, dose-effects of PSA, choice of PSA according to pathologies Insufficiency of quality local sports infrastructure. Insufficient information | Constraints Indication of PA according to the pathologies Insufficient sports infrastructure Insufficient information |

- PSA leads to energy expenditure that exceeds the energy required for basic metabolism;
- PSA help the body to function better;

As far as prescribing is concerned, it appears that doctors do not have enough information on prescription. Their practice is much more a matter of awareness-raising. For example, there is a lack of knowledge about the relationship between volume and intensity, the dosage and effects of PSA, and the choice of PSA according to pathologies. These results indicate that doctors do not have information on the dosage of exercise in relation to the different types of pathology. Also, the way in which they guide patients towards practicing PSA is much more akin to advice and awareness-raising than to prescription, because the latter cannot be done orally without real follow-up and without a document attesting to the type of PSA and its dosage.

4. Discussion

The issue of PSA prescription is central to WHO reports. Indeed, the increase in the prevalence rate of NCD explains this fact. The purpose of this study was to describe the state of knowledge and prescription of PSA by Burkinabe doctors in order to generate advocacy for the application of WHO recommendations on the prescription of PSA.

4.1. Knowledge of APS by Physicians

With regard to knowledge about PSA, the analyzes revealed that the majority of

physicians (97.04%) have information about PSAs (**Table 2**). They know the importance of PSA since they claim that they are used prescribing PSA to improve the mental and physical health of patients; the proper functioning of the body etc. Also, 91.11% of the latter prescribe PSA to their patients (**Table 2**).

These results indicate that doctors who voluntarily agreed to complete the on-line questionnaire know and say they prescribe PSA to their patients. On this subject, it emerged from the surveys that doctors define PSA as which generate energy greater than the energy of the basic metabolism and that PSA are which mobilize all the systems of the human body. For example, the cardiologists surveyed pointed out that in addition to the basic elements above, PSA should be categorized according to the intensity of physical exertion in terms of static or dynamic character. All these remarks show that all of the respondents have a more or less complete understanding of the concept of PSA (**Table 4**).

In the literature, PA is defined as any musculoskeletal movement resulting in energy expenditure including physical exercises and sports, as well as low-intensity movements generally not associated with an improvement in physical fitness (Depiesse & Coste, 2016; Caspersen et al., 1985). According to these authors, physical exercise is characterized by its planned and structured nature, carried out repetitively and intended to improve physical condition and health. The characteristics of physical exercise are therefore frequency, intensity, duration, etc. (Caspersen et al., 1985). Physical exercise increases concentration and endurance, improves reaction time and memory; to maintain better relationships with colleagues if carried out in the workplace (Plotnikoff et al., 2003).

Considering the results of our analyzes and the data from the literature, it appears that the majority of interviewees did not provide enough information on the characteristic elements of a PA. Even if, some surveyed namely the cardiologists tried to provide details such as: “depending on the severity of the patient’s heart disease, a well-defined degree of PSA is indicated or contraindicated.” It appears that the interviewees know the importance of PSA in the management of different pathologies because the literature is abundant at this level (**Table 4**). However, it should be emphasized that the characteristic elements of PSA are not clearly described. The definition of a health PSA involves its description in terms of frequency, volume and intensity, calorie loss, etc. (HAS, 2018).

Furthermore, regarding the beneficial effects of regular physical and sporting activities on the health and well-being of individuals, all study participants believe that practicing PSA is beneficial. As such, several doctors affirm that: regular practice of PSA helps prevent certain pathologies but also fight against certain metabolic diseases. Others add that the practice of PSA “allows us to prevent or reduce morbidity linked to certain diseases such as hypertension, diabetes, stroke, Parkinson’s disease, etc., “sport remains the best companion of the heart” according to the words of a cardiologist. Another doctor adds: “it is the remedy for longevity and eternity”. Doctors’ comments regarding the beneficial effects of regular PSA practice on the health and well-being of individuals are consistent with those in the literature. Indeed, the practice of PSA is benefi-

cial in primary, secondary, tertiary prevention and at all ages and has a positive impact on the quality of individuals' lifestyles (OMS, 2010). The beneficial effects of PA on the management of MCNT have also been studied by several authors in this case (Rivière, 2017; Boiche et al., 2019).

This paragraph shows that the majority of physicians participating in the study bluntly state that they know and prescribe PSA to their patients. When asked about the justification for these responses, there appear to be limits in the description of health PSA. Thus, the description of PSA as mentioned in the literature among study participants is confused with descriptions of the importance of PSA such as preventive and treatment actions for all pathologies. This means that these doctors (specialists and general practitioners) do not have enough elements to assess health promotion PSA. This point of view is shared by certain authors who have reported that the lack of knowledge and training in physical and artistic activity constitutes one of the obstacles to the prescription of PSA (Croquin et al., 2023).

If the knowledge held by the participants of this study regarding PSA is limited then, how can they prescribe PSA and give an indicated "dosage". This is why we wanted to understand the state of PSA prescription among Burkinabe doctors.

4.2. Prescription PSA

As a new or fashionable phenomenon, many doctors (general practitioners or specialists) claim that they prescribe PSA to patients. However, it must be recognized that the prescription as it is carried out by the respondents of this study has shortcomings. This is evidenced by **Table 2** which indicates the difference between words and actions. Between claiming to prescribe PSA to patients and not knowing the protocol, there is a bias because it is like prescribing a drug and not indicating the dosage. The prescription of PSA follows a certain number of principles known in the literature. The prescription of PSA is a complementary approach to drug treatments that involves a specific, realistic and safe approach based on four parameters characterizing PSA: nature, intensity, duration and frequency of sessions and must be personalized (Rivière, 2017). These parameters can be supplemented by a fifth element which is the context (OMS, 2010). While the majority of respondents were positive about the knowledge required for prescription, it should be emphasized that it is essential to have knowledge of sports medicine and physical medicine in order to approach the question calmly in connection with the prescription of PSA, as one interviewee put it. This is why some authors mention that the prescription of PA is the responsibility of the treating physician (Barth et al., 2018). Also, the High Authority of Health of France emphasizes that the prescription of physical activity adapted to patients with NCDs is the responsibility of the attending physician. On the other hand, the dispensing of PSA is the responsibility of other professionals such as masseurs-physiotherapists, occupational therapists or psychomotor therapists, PSA

teachers, sports educators (HAS, 2018). This means that the prescription and dispensing of PSA are two complementary but very different actions because they come from different professionals. Even if the treating physician is heading the care because he is responsible for the prescription, the monitoring of this prescription is the responsibility of other professionals.

In the literature, knowledge of the patient is a must in the prescription of PA. At this level, the French High Authority for Health indicates that the evaluation of severe limitation criteria such the patient's locomotor function (strength, endurance to effort, osteo-articular, neuromuscular), cognitive function (expressions language skills) and sensory function (visual capacity, sensory capacity, hearing capacity, etc.) must be taken into account in the prescription of PA. In addition to the intensity and nature of the physical effort, the HAS of France mentions the knowledge cited below as being essential elements in the prescription of PA. These are: the level of cardiovascular risk of the patient, his usual level of PA, his physical condition, his degree of motivation, his drug treatments, his capacities for self-management of the disease and the treatment and interactions with the PA, his cognitive and behavioral profile, his social environment, his ability to understand and manage the PA program independently, his knowledge of the warning signs during a PA and the risks of musculoskeletal injuries to the patient. This knowledge is therefore essential for the prescription of PA.

In addition, it must be said that in general, the written prescription of PSA by doctors is not effective among all practitioners because according to a survey carried out in Ile de Vilaine on the opinions and feelings of general practitioners on the prescription, it emerged that the written prescription of the PSA was the least used method, behind the oral advice and the delivery of information document, even if more than a quarter of them considered the written prescription as a more effective means than the delivery documents and oral advice (Gérin et al., 2015).

With regard to this information, it appears that when it comes to prescribing PSA, Burkinabe doctors are at the awareness stage for a certain number of reasons:

- these doctors who are currently in service do not have sufficient knowledge because the curricula for prescribing PSA have just recently been introduced into the programs;
- there is no relay for compliance with their prescription because according to the literature, the prescription of PSA presupposes work of synergy of action with other skills for the practice of PSA and the observation of side effects regarding the patient's condition.

Furthermore, from all the tests carried out on the dependent variable "prescription", the analyzes revealed a significant relationship between seniority and prescription of PSA ($p < 0.02$) (Table 3). Most of the participants in this study have tenure between 0 and 10 years. This could imply that young doctors are more inclined to prescribe PSA than older ones. This is easily explained by the recent WHO recommendations according to which: "doctors must make the

prescription of PSA a reality in their daily practices” (OMS, 2010). These young doctors claim that they prescribe PSA but this reality hides many difficulties in the sense that it is much more akin to awareness-raising. They raise awareness and provide guidance but not prescriptions.

It should therefore be affirmed that the state of the prescription of PSA among Burkinabe doctors would be at the awareness stage because even if the latter seem to know the importance of PSA in the management of pathologies, it must be said that the prescription is made in the form of awareness without real follow-up by a PSA professional.

5. Conclusion

One of the causes of NCDs comes from changing lifestyles and sedentary ones. The fight against a sedentary lifestyle and chronic diseases requires various and multifaceted actions in the long term, among which PSA occupies a prominent place. The prescription of PSA recommended by the WHO is part of this dynamic and offers the possibility of adapted, targeted and supervised care. The aim of this study was to analyze the knowledge and practices of physicians on the prescription of PSA.

From the analyses, it emerged that:

- The physicians interviewed know the importance of PSA but do not have enough relevant information for prescribing a PSA;
- Almost all doctors advise the practice of PSA to their patients suffering from chronic illnesses, but do not prescribe them.

In view of these analyses, the inventory that could be drawn up at this stage is that the prescription of PSA to patients in these aforementioned health districts is almost non-existent. Doctors educate their patients whenever necessary. It would therefore be necessary to reflect on information/training strategies on the promotion of the prescription of adapted physical activity not only among doctors in training centers and in health districts, adapted physical activity and health professionals but also with the population in general because it is mentioned in the literature that a prescription for PSA cannot be made without minimal benchmarks on the patient and his state of health (Charles et al., 2019).

Limitations of the Study

The limitations of this study stem from the coverage rate, which allowed us to have a very large sample.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Barth, N., Hupin, D., Roche, F., Celarier, T., & Bongue, B. (2018). La prescription de

- l'activité physique adaptée chez le sujet âgé: De l'intention à la réalité. *NPG Neurologie Psychiatrie Gériatrie*, 18, 155-161. <https://doi.org/10.1016/j.npg.2017.10.002>
- Bazex, J., Pène, P., & Rivière, D. (2012). Les activités physiques et sportives La santé, la société. *Bulletin de l'Académie Nationale de Médecine*, 196, 1429-1442. [https://doi.org/10.1016/S0001-4079\(19\)31722-4](https://doi.org/10.1016/S0001-4079(19)31722-4)
- Bessais, R. (2020). *Santé: Vers la prescription de l'activité physique dans les ordonnances médicales*. Webmanagercenter.com de Sonia Ben Cheikh. <https://www.webmanagercenter.com/2020/02/17/444993/sante-vers-la-prescription-de-lactivite-physique-dans-les-ordonnances-medicales-sonia-ben-cheikh/>
- Bize, R., Cornuz, J., Gruniger, U., & Brian, M. (2012). *Promotion de l'activité physique au cabinet médical*. Manuel de référence à l'intention des médecins. Rapport. Policlinique Médicale Universitaire, Lausanne. <https://www.paprica.ch>
- Boiche, J., Fervers, B., Freyssenet, D., Gremy, I., Guiraud, T., Moro, C., Nguyen, C., Ninot, G., Perrin, C., & Poiraudeau, S. (2019). *Activité physique: Prévention et traitement des maladies chroniques* (19 p.). Rapport Sciences du Vivant [q-bio]/Médecine humaine et pathologie. <https://www.hal.inserm.fr/inserm-02102457>
- Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical Activity, Exercise, and Physical Fitness: Definitions and Distinctions for Health-Related Research. *Public Health Reports*, 100, 126-131.
- Charles, M., Larras, B., Bigot, J., & Praznocy, C. (2019). *L'activité physique sur prescription en France: État des lieux en 2019. Dynamiques innovantes et essor du sport sur ordonnance* (84 p.). Observatoire national de l'activité physique et de la sédentarité, Vichy: Pôle Ressources National Sport Santé Bien-Être.
- Croquin, M., Galudec, P. M., Magot, L., & Cugerone, A. (2023). La prescription d'activité physique adaptée chez les adultes atteints de pathologies chroniques par les médecins généralistes, en France et à l'étranger: Étude des freins et leviers. Une revue systématique de la littérature. *Science & Sports*, 4, 337-354. <https://doi.org/10.1016/j.scispo.2022.07.009>
- De Matos, M. G., Calmeiro, L., & Da Fonseca, D. (2009). Effet de l'activité physique sur l'anxiété et la dépression. *La Presse Médicale*, 38, 734-739. <https://doi.org/10.1016/j.lpm.2008.08.015>
- Décary, S. (2008). *Amélioration de la fonction pancréatique par l'activité physique chez le rat diabétique de type 2 Mémoire de Maîtrise de l'université de Montréal* (91 p.).
- Depiesse, F., & Coste, O. (2016). *Prescriptions des Activités Physiques: En Prévention et en Thérapeutique* (2nd éd., 544 p.). Elsevier Masson. <https://doi.org/10.1016/B978-2-294-74464-8.00004-8>
- Gérin, C. P., Guillemot, M., Bayat, A. M. et al. (2015). Enquête auprès des médecins généralistes sur leur expérience et leur avis en matière de prescription d'activité physique. *Science & Sports*, 30, 66-73. <https://doi.org/10.1016/j.scispo.2013.12.006>
- Haute Autorité de Santé [HAS] (2018). *Guide de promotion, consultation et prescription médicale d'activité physique et sportive pour la santé chez les adultes* (109 p.). <https://www.has-sante.fr>
- Hien, H., Tahita, I., Dabiré, E., Somda, P., Sié, A., Sakana, L., Pibougoum, B., Medah, I., Tougouma, J. B., & Meda, C. (2019). Poids épidémiologiques des maladies non transmissibles au Burkina Faso. Enquête nationale STEPS 2013. *Mali Médical*, 34, 35-39.
- Jattan, A. (2018). Il faut des spécialistes de l'exercice dans nos équipes de soins de santé. *Canadian Family Physician*, 64, 889-891.
- Moudache, S., & Hamouche, N. (2016). *Activité physique et sportive et santé physique et mentale des élèves (classes terminales)* (94 p.). Mémoire de Master STAPS, Université

de Mira Béjaia.

- OMS (2010). *Recommandations mondiales sur l'activité physique pour la santé*. OMS.
- OMS (2019). *Plan d'action mondial pour promouvoir l'activité physique 2018-2030: Une population plus active pour un monde en meilleure santé*. Organisation mondiale de la Santé.
- Pellegrin, N. (2014). *Aide à la prescription d'activités physiques: Enquête auprès des médecins généraliste de la zone Lens-Hénin* (133 p.). Thèse de Doctorat d'Etat en médecine, Université, Lille 2.
- Plotnikoff, R., Fein, A., Milton, L., Prodanuk, T., & Mayes, V. (2003). *Cadre du programme d'activité physique au travail* (p. 18). City of Ottawa, Public Health.
<http://www.centre4activeliving.ca/>
- Poirel, E. (2017). Bienfaits psychologiques de l'activité physique pour la santé mentale optimale. *Santé Mentale au Québec*, 42, 147-164. <https://doi.org/10.7202/1040248ar>
- Prévot-Ledrich, J., Van Hoya, A., Lombrail, P., Lecomte, F., & Vuillemin, A. (2016). Panorama des politiques publiques françaises de promotion de l'activité physique bénéfique pour la santé. *Santé Publique*, 1, 25-31. <https://doi.org/10.3917/spub.160.0025>
- Queval, I. (2011). Éducation, santé, performance, à l'ère de la perfectibilité infinie du corps. *Carrefours de l'éducation*, 32, 17-30. <https://doi.org/10.3917/cdle.032.0017>
- Rivière, D. (2017). Le concept de prescription de l'activité physique. *Bulletin de l'Académie Nationale de Médecine*, 201, 869-878.
[https://doi.org/10.1016/S0001-4079\(19\)30468-6](https://doi.org/10.1016/S0001-4079(19)30468-6)
- Scoatariu-Thiébaud, N. (2016). *Activité Physique sur ordonnance: À propos d'une enquête auprès de patients, tout venant, consultant leur médecin généraliste en Lorraine* (120 p.). Thèse de Doctorat de l'université de Lorraine.
<https://hal.univ-lorraine.fr/hal-01932275>
- Slade, S. C., Dionne, C. E., Underwood, M., Buchbinder, R., Beck, B., Bennell, K. et al. (2016). Consensus on Exercise Reporting Template (CERT): Modified Delphi Study. *Physical Therapy*, 96, 1514-1524. <https://doi.org/10.2522/ptj.20150668>

Appendix

Survey Questionnaire on Self-Efficacy in the Prescription of Physical and Sports Activities (PSA) among CHU-CMA Doctors

As part of a research study on the prescription of physical activity, we are carrying out a study on the evaluation of the knowledge and self-efficacy of doctors in the prescription of physical activity to patients in consultation in Medical Center with a Surgical Unit (MCSU) and University Hospital Center (UHC). To this end, we are asking for your help in carrying out this research. Your answers will remain anonymous.

We would like to express our gratitude in advance.

A. Socio-Demographic Characteristics

1. Years: 25 and 35 Years 36 and 45 years 46 and 55 years
2. Gender: Man Woman
3. Seniority: 0 and 5 years 6 and 10 year 11 years and over
4. Place of work: UHC MCSU
5. Specify the specialty:

B. Knowledge about Physical Activity

6. Do you know about Physical and Sports Activities?
Sure No
7. Does regular physical activity have an effect on health?
Sure No
8. What are the effects of physical activity on health?
 - a. proper functioning of the body
 - b. Improves health
 - c. Prevents and fights diseases
 - d. Longevity
9. Is there any knowledge required to prescribe physical and sports activities?
Sure No
Justify your answer

C. Self-Efficacy in the Prescription of APS

10. Do you prescribe physical activities to your patients?
Sure No
Justify your answer
11. Did you have any problems with prescribing PSA ?
Sure No
If yes, which ones
12. Tick the different physical activities commonly prescribed
 - a. the walking b. Fast walking c. Running
 - d. gymnastics e. Swimming f. bike
13. Are you familiar with the protocols for treating pathologies using physical activity?
Sure No
14. Do you have the ability to prescribe PSA?

Sure No

15. In your opinion, are there any physical activities that are not recommended for certain pathologies?

Sure No

16. What do you think about the prescription of physical and sports activities?

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