Narrative review of home care for palliative patients in general practice

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Abstract: In 2019, the International Association for Hospice and Palliative Care (IAHPC) presented for adoption and signing some very important documents, among which "New definition for Palliative Care", "Letter for National Palliative Care Advocates" (which was designated to be sent to government lead on Universal Health coverage, and UN negotiations) and "Suggested language changes to zero draft 'Political Declaration of the High-level Meeting on Universal Health Coverage'"—"Universal Health Coverage: Moving Together to Build a Healthier World". They are devoted to the constantly growing need of palliative care in addition to the diagnostics and treatment, and are essential part of the care both for the patients with chronic incurable life-threatening diseases (especially with serious health-related suffering) and their families. As the home is the natural place of illness, general practitioners (GPs) should be prepared and involved in the palliative care spectrum of activities. The authors present some aspects of the home-based care while focusing on some problems and challenges, and making comparison with some specific issues for palliative home-care. The overview of the new policies and documents for palliative care reveals the ultimate importance of "universal access to high-quality palliative care, integrated into all levels of health care systems in a continuum of care with disease prevention, early diagnosis, and treatment, to assure that any patient's or family caregiver's suffering is relieved to the greatest extent possible" and the key role of GPs in it.

Keywords: Palliative care; general practitioner (GP); home-based care; telemedicine; interdisciplinarity

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"*General practice is the easiest job in the world to do badly, but the most difficult to do well.*" —Prof. Sir Denis Pereira Gray

Introduction: the growing need of palliative care

The need of palliative care is constantly growing worldwide and the spectrum of patients and diseases, leading to the need of palliative care is very broad (1). According to recently published data in the "Letter for National Palliative Care Advocates to send to government lead on Universal Health coverage, and UN negotiations" (2) by 2060, an estimated 48 million people (47% of all deaths globally) will die each year with serious health-related suffering, and 83% of these deaths will occur in low-income and middle-income countries.

Due to the phenomenon of the so-called "silver tsunami" (the increasing number of elderly, and those of them with severe, incurable, life-limiting and life-threatening diseases) the problem escalates dramatically. Thus, significant and urgent changes should be made in some basic documents, including "Suggested language changes to zero draft 'Political Declaration of the High-level Meeting on Universal Health Coverage'"—"Universal Health Coverage: Moving Together to Build a Healthier World" (3).

A number of international organizations have been working successfully for years to expand the access and to improve the quality of continuous and palliative care. There are a number of Standards developed (4-6), as well as a vast amount of other documents such as strategies (7), national consensuses (8), programs (9), models (10,11), frameworks (12), guidelines and protocols (13). All these documents have been developed both for adult patients and children, and are being constantly elaborated and improved. Yet, currently in Bulgaria, there is no palliative care standard, clinical guideline or strategy. There is no palliative care policy/health policy and the only way for patients to receive palliative care is the clinical pathway, preserved for 4th stage cancer patients.

The Global Atlas of Palliative Care at the End of Life (14) put Bulgaria in Group 3a—defining it as a state with isolated palliative care provision. Earlier study "International Observatory on End of Life Care: A Global View of Palliative Care Development" (15) also has determined Bulgaria in Group 3 with localized provision of palliative care. Even though there are researched, stressing on the role and importance of research in promoting palliative care practices (16), the opportunities for long-term and palliative care are too limited. There are no trained specialists (doctors, nurses, non-medical specialists), there is no recognized specialty within which to train the much-needed specialists and teams. There is no state-level standards for the provision of continuous and palliative care for children and adults. There are no structures (hospital wards, day hospitals, long-term and palliative care offices, clinics and offices for pain treatment, mobile teams, home palliative care, etc.) in place to provide qualified palliative care There are some private hospices available only for patients who can afford the high costs. Most of the time, Bulgarian GPs cannot fully rely on the hospice care and the hospice personnel, as they are also not trained in providing long-term and palliative care.

A major problem is that the hospices in Bulgaria which are registered in accordance to the law for medical establishments/institutions are few. In 2019, architect Nina Toleva-Nowak made an overview of the availability and the distribution of registered hospices in Bulgaria and gathered the result in an interactive map, including information about each facility.

Her study showed that there are overall 50 registered hospices in Bulgaria, 30% of which are located in the capital city—Sofia. Another bothering signal was that in 10 out of 28 regions, there are no hospices at all. In other 9 regions there is only one hospice facility. In 5 regions, 2 hospices per region, only in 2 regions there were 3 hospices and in another two—Sofia-city and Varna—more than three hospices, mostly located in the main city for the region. Another major problem is that many facilities for elderly are announced as hospices, yet they are not registered in accordance to the law and are not equipped with qualified and trained personnel. Thus, the majority of the patients with palliative care needs rely on almost entirely on their general practitioners (GPs), who send them in case of emergency for hospitalization.

On the other hand, in 2019 the IAHPC presented for adoption and signing some very important documents, among which: "New definition for Palliative Care", "Letter for National Palliative Care Advocates to send to government lead on Universal Health coverage, and UN negotiations", and "Suggested language changes to zero draft 'Political Declaration of the High-level Meeting on Universal Health Coverage'"—"Universal Health Coverage: Moving Together to Build a Healthier World" (17). They are devoted to the constantly growing need of palliative care in addition to the diagnostics and treatment as an essential part of the care both for patients with chronic incurable life-threatening diseases (especially those with serious health related suffering) and for their families. An important aspect, is that the patients have the right to receive the necessary palliative care at a place of their choice. This led to the fact that a considerable part of patients wish to receive care at home or at the home of their loved ones and to be monitored by a physician they trust. As home is the natural place of illness, GPs are the most suitable medical specialists to provide and/or lead home-based palliative care and thus they must be prepared and involved in palliative care spectrum of activities. As a family physician (FP) the GP is in better position to provide this type of care, centered to the patients and their families (18), according to the new 2019 IAHPC definition (19). Another valuable aspect is noted by R. Steele and B. Davies—the dimensions of family functioning: given examples of the range of behaviors, distinguishing more helpful from less helpful when integrating the past, dealing with feelings, solving problems, utilizing resources, etc. (20).

We present the following article in accordance with the Narrative Review reporting checklist (available at http://dx.doi.org/10.21037/apm-2021-01).

Objectives

The aim of our study is contribute to the understanding of the importance of home care for palliative care patients through analyzing and presenting scientific publications in several important sub-topics in homecare for palliative care patients and to enhance the awareness and the knowledge of the GPs in providing better home care for this vulnerable group.

Methods

Literature review made by two independent researchers through PubMed search, EMBASE and free search through combinations of key words (incl. palliative care, home care, general practice, GP, barriers, place of death, telemedicine, etc.), Publications were selected regardless of language of publication, year of publication The initial search and selection of scientific publications for the purposes of the review was carried out as follows—after the initial selection by keywords, the found materials were sifted by titles, then selected publications were reviewed by abstracts, of which after careful selection and overlapping results from the two researchers were selected full-text articles. For the final stage were selected the most appropriate ones.

Discussion

The importance of home-based care is proven by many studies. Published systematic reviews and original articles focus on the preferences of palliative patients to stay at home and to die there, surrounded by relatives and friends and attended by their GP (21-23).

As the home-based palliative care becomes a part of home-based medical practice in different primary care practices, more studies have assessed the benefits and challenges, including the organization of a palliative care team, the patient characteristics, the use of electronic medical records, systems and technology and the urgent care delivery when necessary. Norman *et al.* also stress on community-oriented component of care (24).

Providing patients and families with quality palliative care at home is a part of the comprehensive primary care. The holistic approach, used in general practice helps immensely to deal with the complexity of palliative care patient problems, yet the GPs still report a lack of confidence as feel not trained enough to deal with such issues and consider the available resources insufficient. The poor communication between GPs/FP and other specialists and treating teams are recognized as barriers to provide comprehensive palliative care. Despite these difficulties and barriers, they are ready to help the patients and to improve their own knowledge and skills in the field of palliative medicine (25).

Of particular importance for patients with cancer at the last stage is to receive quality palliative care and management of severe concomitant symptoms, tailored to their wishes, preferences and expectations, but unfortunately in many countries, including Bulgaria, this cannot be achieved due to lack of awareness, regulations, properly trained staff etc. Often GPs have to act as mediators between patients and oncologists (26) and to become advocates of the patients and their families against the healthcare system and the community and to facilitate the relations with hospital specialists to ensure continuity of care. Having that in mind, the home-based palliative care could bridge the gap especially "for patients who require intensive home management, but are not enrolled in hospice" (27).

Peng *et al.* have studied the willingness of GPs and some rarely explored factors influencing the palliative care at home. Usually the FPs tend to "limit their services to and referral and were less likely to see patients and prescribe medicine, to provide phone follow-ups, to provide home visits or to offer bereavement care for the family" (28). Interestingly, a prior Taiwan study revealed low willingness of FPs to provide palliative home care (29).

In recent years, the need of palliative care programs to enhance patient wellbeing and improved outcome is increasing. For the patients, their families and the society it could be achieved by home-based palliative care, moreover at cost, lower than other healthcare options (30).

Different tools could help GPs better the symptom management to asses provided care and also to predict survival time for patients on home-base palliative care (31,32).

A number of protocols are used to improve home palliative care and to stimulate and promote the use of multidisciplinary teams to cover better the needs of the palliative patients and their families. Some of them are specially designed to cover specific problems, diseases or symptoms in palliative patients and their relatives (33-35).

In GP's work with palliative patients, the specialized knowledge and skills of other healthcare professionals is needed. It is believed that he should be the leader of the interdisciplinary palliative care team in general practice, with a pivot role ate decision-making process, while coordinating and controlling the care dynamics in accordance to the changing needs of patients and their relatives (36).

A study by Johnson *et al.* has recognized the GPs as the key professionals in linking people with specialist palliative care (37,38).

Another study by Danielsen *et al.* demonstrates that "optimum palliative care at home depends on close collaboration and dialogue between the patient, family, home care nurses and general practitioner" (39).

Other benefits of home palliative care include reduced emergency department visits and hospitalizations rates and increasing patient and caregiver satisfaction, while reducing the morbidity and mortality associated with the avoidable hospitalizations. Moreover benefits are proven (40).

By maintaining continuing relationships with patients and families, based on trust and solidarity, the GP becomes the key person in a cost-effective healthcare systems and ensures better health outcomes (41).

Palliative care for migrants in general practice

Recently, with the increasing flow-dynamics of migrants, new and unknown challenges are emerging for GPs, for which they need to be prepared (42).

Migrant-specific aspects of the palliative care put additional stress to GPs (verbal and non-verbal communication; language barriers especially in the process of decision-making; dealing with patient preferences, which may conflict with his professional values; dealing with cultural issues and the ensuing conflicts between patients, families and professionals; difficulties in the access to healthcare system). Here is to mention the importance having intercultural teams which apply holistic approach in order to help to overcome these specific difficulties and to proper organize and plan the needed care. As conflicts between patients, families and professionals may occur, the cultural competence and multicultural teams could alleviate and better the care management (43). GPs need more training and understanding in cross-cultural communication and consultations, thus enhancing the understanding and the trust between them and migrant patients. Other obstacles for migrants to receive proper palliative care are related to the diversity aspects (psychosocial, sex and socio-economic status). Overcoming language barriers is crucial in regard to patients' rights and when achieving informed consent is needed. Systematic review of 30 articles pointed out three main themes: "palliative care practice within the family, trust as a precondition of palliative care, and the importance of knowledge and cultural competency" (44-56).

Barriers to home palliative care

Barriers to home palliative care are studied from different perspectives. An analysis of the barriers to needs growth in home palliative care has presented some major challenges such as "a lack of clarity on the applicability of national standards to home-based programs, a lack of sustainable financing methods for home-based palliative care, and lack of awareness of existing support resources for program design and leadership development" (57-59).

Usually the GP is the leader of the palliative care team for home-care and specialists are selected as team members according to palliative patient condition and needs. To meet the complex needs of the palliative patients and to deliver holistic end-of-life care to patients and their families, an inter-professional team approach is recommended. The teams are supposed to help and support the FPs—a practice explored in a Canadian study focusing on "institution-related barriers (i.e., the healthcare system), interest-related barriers (i.e., motivations of stakeholders) and Idea-related barriers (i.e., values of stakeholders and information/research), on sociopolitical barriers" (60). Research on barriers in palliative care has found that patient well-being is improved by palliative teams where psychologists and psychiatrists are core members of the treatment team (61). That is why integrated care teams are needed to ensure high quality palliative care at home.

The main goals of home palliative care include reducing suffering and enhancing quality of life, especially for paediatric patients and their parents. That is why recognizing potential team level inhibitors could contribute to better care models. Walter *et al.* have found 8 inhibitors to team level regoaling, among which team challenges due to hierarchy, avoidance of criticizing colleagues, structural communication challenges, group norms in favor inhibited expression of sorrow, lack of social support, reinforcement of labeling and conflict (62). As Interpersonal aspect of care could be source of barriers, the trust and confidentiality between the patient and the GP are fundamental factors in general practice—the patients and families need physicians who are accessible and can be trusted (63).

Having not enough resources devoted to home-based care for palliative patients is a significant barrier, so there is a recognized need to have more resources (64,65).

Education in palliative care for GPs

European Academy of Teachers in General Practice has published educational agenda focusing on primary care management, person centeredness, specific problem-solving skills, comprehensive approach, community orientation, holistic approach, central application features, integration and implementation. All of them are very important and needed when caring for palliative patients and their families (66). The education and training of GPs for the needs of working with palliative patients and their families in addition to their core competencies is aimed at acquiring specific knowledge and skills through purposeful training (67). GPs also recognize the need of improving their education and training at all educational levels (undergraduate and postgraduate level) and to be focused on specific problems and difficulties they face while carrying for palliative patients, or problems related to pain-management and dealing with other symptoms, or decreased access to hospice beds for their patients and support services. GPs declare the need of further training for recognizing the barriers to teamwork and communication. Home-based general practice is considered as appropriate teaching site for palliative care (68).

The educational paradigm using the palliative patient as unusual but successful teacher could significantly contribute to enhance quality of education for medical students and doctors, giving them another point of view on personal experience with these diseases and conditions, experience they do not have (69). It could be also part of patient empowerment strategies—involving the patients as a teacher reinforcing the patient-centered approach. Patients have important unique contribution to the training of general practice residents and help them to develop a range of competences (70,71). This type of "co-teaching"—the patient and the university teacher in tandem—is valued by clinicians. It could also bring meaning in the life of palliative patients. Studies suggest continuing education is needed for GPs to provide better care for their palliative patients and families, including bereavement care (72). General guidelines about teaching palliative care incl. at home, find it excellent for training and comprehension of palliative medicine, patients and family needs and contributes to humanizing effect on trainees to improve the palliative care understanding (73). The program used experiential learning techniques, such as a clinical attachment and mentoring the education and the skills of GPs in Western Australia and the quality of care they provide, within a 14-week training program (74-77).

Meanwhile, the Ministry of Health in Bulgaria has published a National Program for GPs education. The author develops further some very important question with regard to palliative care in general practice and since 2003 is leading forty hours postgraduate courses in Palliative Medicine at the Medical University, Plovdiv. The fact is, this course is usually attended by medical doctors with one or more acknowledged specialties (anaesthesiology, internal diseases, oncology, etc.), but not by GPs. During the main one-month mandatory theoretical course the topic has been taught focusing of essentials of palliative care in one day. The GPs may also select a thesis in the field. After that they are more aware about the problems of the palliative patients and their families. A long way is ahead to accredit Palliative medicine as clinical and scientific specialty, but the most important issues are ready now: monographs in paediatric palliative care (78) and Fundamentals of Palliative medicine (79-84), a manual in palliative care (85), educational program for all levels—bachelor, master, PhD and project for national Palliative Care Standard (86). It is important to change the attitudes of the GPs and the society towards palliative care.

The role of GPs in provision of palliative care in rural areas

In many countries, especially in the groups with no or isolated palliative care facilities, the GPs, face significant difficulties in providing care for such patients and their families and in managing the symptoms and the situations. Comparing the hospice map for Bulgaria (*Figure 1*) with the regional distribution of GPs, it became obvious, that the regions with lower number of GPs are also lacking hospices. This, along with the decreasing number of GPs over the years (last data from 2019 showed that there are 4,176 GPs in Bulgaria) and with the increase in their average age (approximately 60 years average age of Bulgarian GPs with on average 6 months difference between females and males), make the process particularly challenging. In many countries rural GPs are heavily involved in looking after palliative care patients. They recognize the need for nursing and medical palliative care consultant services to be available as well as they require undergraduate, postgraduate and continuing education (87).

A systematic review of twenty-six studies stated that

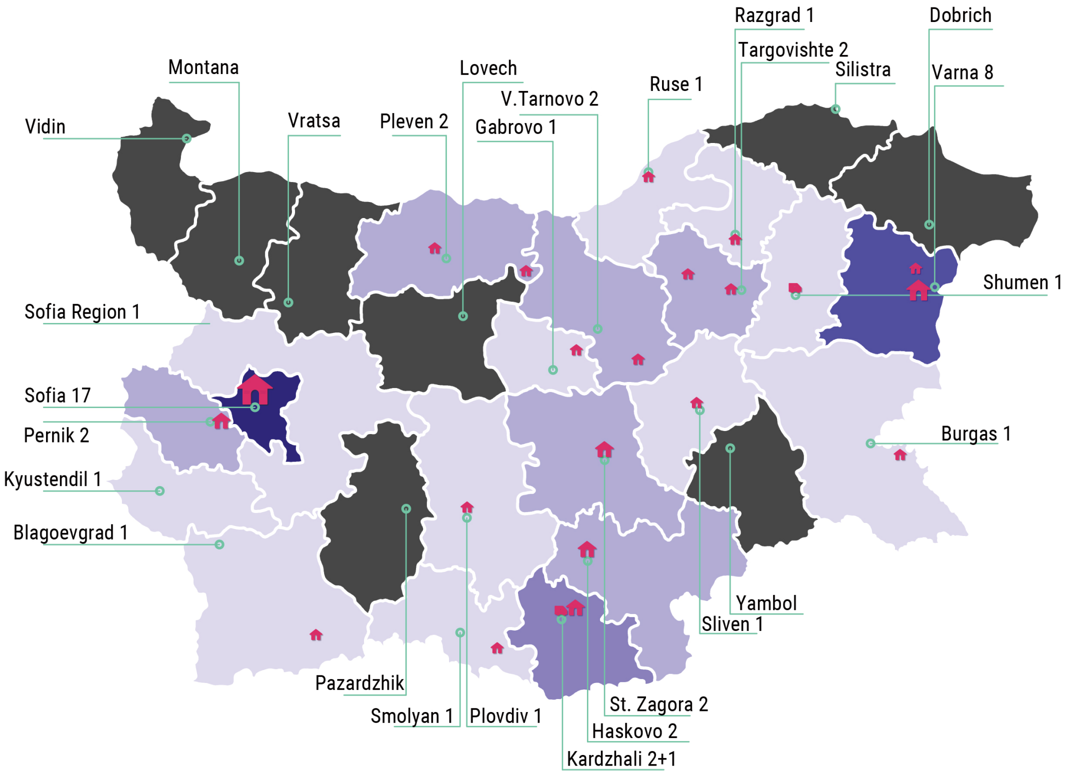

Figure 1 Google-based map of registered hospices in Bulgaria, architect Nina Toleva-Nowak.

palliative care services have developed mostly in urban areas, while rural areas typically experience lack of well-organized services, so GPs and nurses undertake the most of palliative care. Hope for solving some of the problems are given to the improvement and application of modern ICT and telemedical activities (88). Including telemedicine with appropriate training, especially in areas with shortage of GPs could contribute to better palliative care in rural areas. There is a marked need to support rural GPs (89) using different medical and nonmedical resources, including contacting and involving local authorities and community leaders when working in remote/rural areas (90). GPs can partially cover palliative care needs of their patients and families at home (point of care—home!), but they need not only support from other professionals, but also external recourses, effective networking for clinical, educational and research purposes adapted to the specific rural conditions and to fill the gaps in service provision for children and adult palliative care (91) and to ensure "universal access to high-quality palliative care, integrated into all levels of health care systems in a continuum of care with disease prevention, early diagnosis, and treatment, to assure that any patient's or family caregiver's suffering is relieved to the greatest extent possible" (92).

Place of death

Death at home is considered as golden standard (93-95). Being the closest, longest-lasting and trusting relationship with his patients, the GP should know his patients' attitudes and wishes about their preferred place of care and place of death. Study about GPs awareness of preferred place of death found 88% of the patients prefer to die in a private or care home, while GPs were informed by the patients themselves in 84% of cases. These results are very important for the general practice (96). One of the indicators of quality of care is that the patient can die at his or her chosen place, and this is where the GP plays a key role in obtaining this information from the patient and in honoring his or her preference. It is proven that if GPs are informed, patients often die at their preferred location. GP awareness in this matter is very important (97,98).

In the provision of palliative care, the dying of the patient in a chosen place is associated with quality care. GPs usually know the place of death of their patients, but are often unaware of their pre-selected place of death. It is therefore advisable GPs to receive such information not only from the patient himself, but also if possible, from the family members, although talking about this very sensitive topic is a challenge for him (99). When GPs provide palliative care for their patients, it positively contributes to fulfilling their desire for a chosen place of dying or dying at home (100).

Study from four European countries also was focused on desired place of death and the role of GPs. The result support those from other studies in the field, stating "despite the importance of being able to die in a preferred location, GPs were often unaware about patient preferences, especially in Italy and Spain. If GPs were informed, the preference was often met in all countries, indicating room for improvement in end-of-life care" (101). Older adults also prefer to have care and die at home (102). Patient preferences for PPOC and PPOD vary according to their diagnoses; tailoring palliative needs to patients' preferences are important regardless of their diagnosis (103).

For rural areas home is the preferred place of death (104). As compared to cities, in many rural areas there is a tendency for home death. The preferences of palliative patients are not absolute, so more research is needed do define the influencing factors (104). Research on differences in care and the preferred place of death between cities and rural areas should contribute to policy-making and strategies and help to "improve equity in health care delivery for those approaching the end of life" (105). Urban-rural differences are registered also in a Chinese study, suggesting "bridging the gaps between urban and rural areas is necessary for the reform and construction of health care and long-term care systems in China" (106).

GPs, applying preferred by patients holistic approach are becoming more and more important in providing optimal end of life care. Proactive identification of people approaching end of life is contributing to improvement of all aspects of care (107). It could be interesting to compare different countries data between them and with the statistical results from Norway (108). GPs as well as medical students and junior hospital doctors are adequately trained for their important role in caring for dying patients (109). Thus, more research on the role of GPs in comprehensive home care and end of life care is ultimately required.

Telemedicine for home-based palliative care

The development of information and communication technologies significantly contribute to improving the diagnosis, treatment and quality of care in all areas of medicine. Telemedicine has become an useful tool and offers many benefits in the palliative care provided at the patient's home, for the GP, for the palliative team, etc. New and new telemedicine initiatives, activities and applications are developed, targeting not only medical professionals and services but also patients and their families and relatives and carers. As previously noted in this paper, GPs report need of more education and training in palliative care, so for them the availability of suitable and tailored to their needs palliative care information, including cancer care (110).

CareSearch project in its special GP section was among the activities, especially devoted to GPs to facilitate information search in the field of palliative care and to provide them with knowledge, skills and practical advice in the field. Using real time video consultations in home-based palliative care has both advantages and disadvantages. Video consultations are considered feasible and could facilitate the work of the interdisciplinary palliative team, increase the quality of specialized home palliative care and provide such care over distance. An analysis of the suitability of 'video-visits' for palliative home care: implications for practice has revealed four factors influencing the eligibility and decisions about patients' "suitability for video-visits: diagnosis, low Edmonton Symptom Assessment System score, no care-giver present, number and types of interventions required" (111). Videoconferencing is well accepted also by patients regardless of the stage of their life-illness and they tend to take an active role, while the relatives are also actively involved as well as the communication between patients, relatives and palliative care team is facilitated and strengthened. Videoconferencing is used for interactive cases discussions, consultations, assessments, training and education for specialists. The technology is usable and acceptable both for patients and health professionals (112).

One of the first one of the first randomized controlled trials in palliative telecare on effectiveness of weekly teleconsultation in complex palliative home care was performed with support of GPs (113). Telecare is rapidly growing practice in palliative care, where the communication is of high importance and understanding of the use of modern telecare in many aspects should be understood. Even face-to-face communication is essential, modern telecommunication is helpful both for patients and doctors and they are generally positive, although researches have noticed some reservations and prerequisites, in particular strong reservations are voiced against permanent telemonitoring in the patient's home. The importance of timely and accessible care for clinically vulnerable, dying cancer patients and their family caregivers was confirmed by Stern *et al.* (114).

Interesting and results are reported by Hoek *et al.* They discover that "adding weekly teleconsultations to usual palliative care leads to worse reported symptom scores among home-dwelling patients with advanced cancer" and offer possible explanations about this finding (115). Being one of the main features of general practice, patient-centered communication between patients and GPs is affected by the use of ICT. Study published in 2015th concludes teleconsultation fits the practice of home-based palliative care, pointing out the patient involvement and empathic patient-professionals relationships and proposed the use of "teleconsultation implementation guide for optimal use of teleconsultation in daily palliative care practice". Children are very specific and difficult patients GPs, especially those with palliative care needs. For them according to Bradford *et al.* palliative tele consultations are feasible and acceptable, can reduce the burden on families at a distressing time and "are just as effective as face-to-face consultations in terms of the documented components of the consultation". Web-based videoconferencing shows advantages in rural palliative care as "acceptable, effective, feasible, and efficient way to provide timely support to elderly rural patients and their families" (116).

Pinto *et al.* have analyzed forty mobile apps (117). Among main issues to which apps are devoted, are: communication between patients, families and palliative care teams, reinforces partnership, decreases the burden on families, use of the emergency services. drugs, tools/clinical guidelines, hospice, symptom management and palliative care information. Development of such technologies are considered good strategy, but being in the beginning, further research is needed to promote evidence-based practice. Another study has identified forty-six palliative care applications targeted to clinicians. The evidence upon which the apps were based still remains unproven (118). Mobile applications could bring additional resources to support patients and the palliative cancer care program (119). Mobile phone use is increasing also in palliative care and could contribute to better care, especially in remote areas, but some factors should be kept in mind as access to phones and ability to use smartphones, mobile network access, and limited access to expertise and hardware required for mobile health (120). Mob apps used for paediatric palliative care appear to be inexpensive and user-friendly technology, which allows to make evidence-based and informed decisions about referrals and "has the potential to be an important tool in improving health care service delivery for children". Development of apps may be expanded to other areas of child care, especially for facilitating general practice (121).

Usually m-Health apps were focus on biological and clinical monitoring (particularly concerning the symptoms), disease self-management, and therapeutic patient education. Future attention and research are needed to define which health-care professional would be in charge of this "m-monitoring" (122). There is a lot of enthusiasm towards use of mHealth to improve care coordination, facilitate communication, enhance symptom monitoring, and improve patient-family support, but there are some reservations related to depersonalized assessment and care. The use of mHealth could be and useful tool, but cannot replace important multidisciplinary services (123). An Iranian mobile health application has a lot of functionalities and could help in self-care of patients with needed to palliative care (124).

Digital health platform supports clinical decision making in opioid prescription. It is safe, reliable and validated CDS that has potential to reduce harms from opioid dosing errors (125). The University of Kansas Medical Center in partnership with Hospice Services has developed telehospice service. Among different facilities, a secure cloud-based videoconferencing solution was used. According to authors, "TeleHospice's potential to supplement and improve hospice services while reducing costs is significant, but continued research is needed to understand best fit within frontier hospices, to inform future urban applications, and to address reimbursement" (126).

In recent years, studies have emerged on some other interesting aspects of use of mobile applications in palliative patients. GPs should be aware of these new possibility to positively affect their patients status. A prototype of mobile application monitors the patients' comfort and is considered as simple, useful, feasible and user-friendly. When using mobile health applications, ensuring data security is a priority. Data protection should be carefully studied further when developing such applications (127). Weekly *et al.* have reviewed different mobile apps for Calming, Relaxation, and Mindfulness Interventions for Pediatric Palliative Care Patients as a relaxation and distraction tool (128).

Palliative care is also associated with significant burden on the medical and non-medical staff providing care and support, emotional and physical exhaustion/compassion fatigue and burn out syndrome may develop. There are various strategies to cope with the stress, incl. using mobile applications. Meditation, mediated by mobile application could help caregivers to alleviate work-related stress (129). Electronic Palliative Care Coordination Systems used by different organizations as a tool for sharing information could be used also to assess whether there was a measurable benefit with patients dying at their preferred place of death (130). Newly appeared review article reveals the need of future work is needed to evaluate the use of telehealth in palliative care and improvement of telehealth design in line with digital service standards (131-139).

Summary

Caring for the palliative patients and their families require a multidisciplinary approach and multi-institutional commitment, a high degree of responsibility, clearly formulated and distributed tasks and professional knowledge and skills for those involved in these activities.

Care for palliative patients must be harmonized with international and national regulatory base.

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