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EMPIRICAL RESEARCH QUANTITATIVE

Treatment of minor health problems by primary care nurses: A cross-sectional study

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Abstract

Aims: To assess the results of a nursing-led program to treatment of minor health issues from Catalan health institute primary care teams during 2019 and 2020.

Background: In 2009, the Catalan health institute implemented a nursing program to deal with minor health problems. This nursing-led program includes an algorithm for each of the minor health problems and arose as a strategy to reorganise the flow of demand for care in primary care.

Design: A cross-sectional design.

Methods: Multicentric cross-sectional study. 392 primary care teams from the Catalan health institute participated in the study. STROBE guideline was followed in reporting this study. Patients attending any of the participating centres requesting a same-day consultation for minor health issues were registered.

Results: A total of 21,215,278 consultations were recorded: 18,284,105 for adult and 2,931,173 for paediatric patients. Minor health issue resolved by the nurse was achieved in 50.9% of adult patients and 55.4% of paediatric patients. The highest rates of resolution in adults (>85%) were as follows: burns, emergency contraception and injuries. The highest resolution rates (>84%) were as follows: burns, breastfeeding difficulties and infant colic. 87.7% of prescriptions issued by nurses were accepted by the family physician.

Conclusions: The nursing-led program to treat minor health issues has been shown to present acceptable resolution for nurses in a large primary care setting. Nurses have been carrying out prescription activities with very favourable results.

Relevance to clinical practice: This study demonstrates that care provided to patients by nurses for minor health issues requiring preferential resolution is effective. Our results are useful in that they confirm both the effectiveness of the nursing-led program for minor health issues and the pharmacological prescriptions produced during patient appointments.

Patient or public contribution: Patient's data were obtained through a program records system after the minor health issues appointments.

KEYWORDS
acute diseases/nursing, acute minor illnesses, minor health problems, nurse practitioner, primary care

1 | INTRODUCTION

The frequency of consultations in primary care is a multi-causal phenomenon influenced by the social environment, healthcare organisations and health professionals (Bellón Saameño, 2006; Lleras Muñoz, 2011). The medicalization of society, together with the consumer culture of immediate, fast care, contribute to overuse of health services (Martínez Cañavate, 2007). On the other hand, population ageing and the consequent rise in the prevalence of age-related illnesses, changes in morbimortality patterns with greater complexity and the appearance of groups with scant economic resources are determining factors in health care activities (Romero, 2019). A redistribution of tasks would make it possible to achieve an efficient health system with considerable efficacy (Casado Vicente, 2016). Nursing professionals, based on their capacities and training, have become a key component in adapting the response of the health system to the demands of the population.

What does this paper contribute to the wider global community?

- The nursing program to treat minor health issues has been shown acceptable resolution for nurses.
- Nurses have been carrying out prescription activities with positive results.
- This study confirms the effectiveness of the nursing-led program for minor health issues and the pharmacological prescriptions produced during patient appointments.

1.1 | Background

In 2009, the Catalan health institute implemented a nursing program to deal with minor health issues as a strategy to rationalise care demand, strengthen health system sustainability and increase resolution rates in primary care centres (Vara Ortiz & Fabrellas Padrés, 2019). The nursing-led program for minor health issues ensures care continuity throughout the health-illness process within the scope of the nurse's competence. As distinct from triage, which aims to streamline, in an orderly manner, care offered to people attending the emergency room and refers to reception, welcome and classification of patients, the nursing program seeks to offer solutions to the acute health issues encountered (Vara Ortiz & Fabrellas Padrés, 2019). In this context, it is opportune to introduce the concept of nursing prescription as nurses would be hindered in resolving health issues without prescribing the best technique, the best health product or the best drug according to scientific evidence (Fernández Molero et al., 2019). This study aims to describe and assess the development of a nursing-led program for minor health issues delivered by adult and paediatric nurses in Catalan health institute primary care teams in 2019 and 2020 along the evaluation lines established by Fabrellas et al. (2011). In this study, the terms nursing program and nursing-led program refer to protocolized nurse management of patients with acute minor illnesses. Similarly, to complement the results, we will describe the development over time of prescription carried out by nurses. We should highlight the impact of the COVID-19 pandemic on the care demands of the population; a scenario that must be addressed.

2 | METHODS

2.1 | Aims

The purpose of the study was to assess the results of a nursing-led program for minor health issues implemented by adult and paediatric nurses from Catalan health institute primary care teams in 2019 and 2020, and to describe the characteristics and development over time of prescriptions issued by nurses.

2.2 | Study design

Cross-sectional descriptive observational study based on retrospective assessment of data collected on patients included in the nursing-led program for minor health issues. The study was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline (Von Elm et al., 2007) (Supporting File S1).

2.3 | Study setting

Multicentric, 392 primary care centres from the Catalan health institute participated in the study.

2.4 | Participants

All available data from clinical histories over a 2-year period (1 January 2019–31 December 2020) were included for patients who met the following inclusion criteria: attending one of the 392 primary care centres participating in the study and seeking a same-day appointment for a minor health issue. The exclusion criterion was having an appointment for health problems other than those detailed in the nursing program algorithms for minor health problems.

2.4.1 | Nursing-led program

The public health system in Catalonia provides universal coverage, and the main health provider is the Catalan health institute. In 2009, this institute initiated a nursing-led program offering care to patients with acute minor issues who requested a visit in primary care. The program was addressed to both adults and children and was carried out in 284 primary care centres. Before implementing the program, adult patients requesting same-day consultations for acute minor health problems were seen by primary care physicians, while children were seen by paediatricians. The nursing program for minor health issues was developed by a working group comprised of nurses, physicians and paediatricians, all with experience in primary care. The program consisted of a general protocol and 23 care-provision algorithms for minor health problems: 16 for adults and 7 for children (Fabrellas et al., 2011). The algorithms covering the various health issues are based on the best available evidence. Prior to program implementation, training sessions were conducted for all nurses, physicians and paediatricians. The algorithms are included in ECAP, the computerised clinical history system used in all consultations, to facilitate access for health professionals. These algorithms contain the following sections: anamnesis, assessment, interventions to perform, reasons for referral to another professional, complementary tests and medication indicated. In addition, health education and preventive measures performed by the nurse are considered. Each section specifies what action the professional should take and includes instructions on treating the health problem. The number of algorithms has progressively increased and nurses currently have 40 at their disposal: 17 for adult and 23 for paediatric patients (Tables 1 and 2). At present, the nursing-led program for patients with acute minor issues is being carried out in 392 Catalan health institute primary care centres covering a population of some 6,000,000 inhabitants.

2.5 | Study variables

The main study variable was case resolution, understood as completion of the algorithm used in the nursing program for minor health issues not requiring referral to another professional. As secondary variable, and to complement the results, the prescriptions issued by the nurses, and accepted by the family physician, were measured. The content validity of the nursing program for minor health issues was verified by the Catalan health institute. Data collection was carried out ensuring the privacy of responses, data confidentiality and the internal validity of the study. Data were gathered through ECAP, the computerised clinical history system implemented by the Catalan health institute in 2005 that includes information on all individuals attended by the public health system. This is a software system that serves as a repository of structured data on diagnoses (categorised according to the International Classification of Diseases, 10th edition, ICD-10), clinical variables, prescription data, laboratory test results and diagnostic requests. Data from the Catalan health institute primary care health records were previously validated in various studies (Garcia-Gil et al., 2014; Recalde et al., 2019).

2.6 | Data collection

The sampling technique used was non-probabilistic consecutive, recruiting individuals attending the participating Catalan health centres to request a preferential visit for one of the health reasons predefined in the nursing-led program algorithms. All the patients were informed that they would be seen by a nurse. Data were obtained through the ECAP program records system and entered into a database for analysis. Calculation of the size of the sample was carried out bearing in mind the previous data reported by Fabrellas et al. (2011) according to the approximate value of the nurse resolution parameter, with a confidence interval of 95% and a precision level of ±1%. The sample was finally configured with a higher number than required by data availability with the aim of increasing the consistency of the results. The GRANMO-IMIM program version 7.12 was used for this procedure.

2.7 | Ethical considerations

This study was approved by the Clinical Research Ethics Committee (CREC) at the Jordi Gol and Gurina IDIAP foundation under registration number P10/86. The study was carried out in accordance with current legislation on data confidentiality, safety and anonymity.

2.8 | Data analysis

The Statistical Package for the Social Sciences (SPSS) v. 25.0 software for Windows (IBM Corp. in Armonk, NY, USA) was used for the statistical analyses in this study. Analyses were carried out using the statistical program. A descriptive analysis of the data was performed. The categorical variables are described through percentages and compared using Pearson's chi-square test. In all calculations, a value lower than .05 was accepted as level of significance.

TABLE 1 Frequency of minor health issues in adult patients assessed in the nursing program over a period of 2 years

	Number of consultations (%)	
Health issue	**2019**	**2020**
Emergency contraception	43,586 (0.5)	40,470 (0.5)
Contusion	368,467 (3.9)	370,659 (4.2)
Burns	147,020 (1.6)	136,145 (1.5)
Diarrhoea/vomiting	1,174,827 (12.4)	1,060,977 (12.1)
Epistaxis	22,788 (0.2)	23,784 (0.3)
Fever without a focus	101,508 (1.1)	165,284 (1.9)
Injury	1,196,636 (12.6)	1,055,741 (12.0)
Influenza	161,446 (1.7)	22,043 (0.3)
Lesions in skin folds	101,040 (1.1)	107,672 (1.2)
Dizziness	550,396 (5.8)	508,896 (5.8)
Urinary discomfort	1,460,771 (15.4)	1,497,876 (17.0)
Odynophagia	1,175,207 (12.4)	1,053,480 (12.0)
Odontalgia	173,572 (1.8)	158,864 (1.8)
Sting on the skin	165,949 (1.8)	134,071 (1.5)
Rise in arterial pressure	299,194 (3.2)	290,519 (3.3)
Upper respiratory symptoms	2,249,953 (23.7)	2,094,113 (23.8)
Sprained ankle	90,440 (1.0)	80,711 (0.9)
Total	9,482,800	8,801,305

TABLE 2 Frequency of minor health issues in paediatric patients assessed in the nursing program over a period of 2 years

	Number of consultations (%)	
Health problem	**2019**	**2020**
Nappy rash	33,602 (2.2)	34,214 (2.4)
Infant colic	10,178 (0.7)	10,354 (0.7)
Contusions on fingers	84,073 (5.5)	76,561 (5.5)
Foreign bodies in the nose	2269 (0.1)	2499 (0.2)
Foreign bodies in the ear	5936 (0.4)	7200 (0.5)
Burns	24,161 (1.6)	21,736 (1.5)
Acute diarrhoea	85,378 (5.6)	70,862 (5.0)
Breastfeeding difficulties	2329 (0.2)	2611 (0.2)
Epistaxis	5373 (0.4)	4898 (0.3)
Acute fever	398,505 (26.1)	388,204 (27.7)
Injuries	251,974 (16.5)	218,775 (15.6)
Face and scalp skin lesions	50,276 (3.3)	51,461 (3.7)
Upper tract mucus	122,127 (8.0)	108,382 (7.7)
Suspected thrush in the mouth	3973 (0.3)	4289 (0.3)
Atopic dermatitis	12,930 (0.8)	14,282 (1.0)
Insect bite	38,591 (2.5)	31,222 (2.2)
Intense crying	4183 (0.3)	4606 (0.3)
Lice	1166 (0.1)	1468 (0.1)
Regurgitation	1386 (0.1)	1944 (0.1)
Constipation	16,813 (1.1)	16,891 (1.2)
Suspected chicken pox	6811 (0.4)	5587 (0.4)
Cough	262,588 (17.2)	235,738 (16.8)
Vomiting	102,991 (6.7)	89,776 (6.4)
Total	1,527,613	1,403,560

3 | RESULTS

A total of 18,284,105 same-day consultations were made for health reasons predefined in the algorithms, by adult patients and 2,931,173 consultations by paediatric patients in the two-year period. The most common issues in adult patients were injury, urinary discomfort and upper respiratory symptoms (Table 1). The most frequent health issues in paediatric patients were acute fever, injuries and cough (Table 2). The resolution of the cases of acute minor health issues by the nurse was defined as completion of the nursing-led program algorithm without the need to refer the patient to a family physician or secondary care. In adult patients, this was achieved in 50.9% over the two years. The remaining 49.1% were referred to a family physician. The highest rates of resolution (>85%) were for burns, emergency contraception and injuries, while the lowest rates (<40%) were for urinary discomfort, dizziness and fever without a focus (Table 3). In 2020, nurses independently resolved more all-reason consultation issues assessed, with the exceptions of influenza ($p < .001$) and burns ($p = .001$), than in 2019. Case resolution through the nurse's own approach in paediatric patients was achieved in 55.4% over the two years. The remaining 44.6% were referred to a paediatrician. The highest rates of resolution (>84%) were seen in burns, breastfeeding difficulties and infant colic, while the lowest rates (<45%) corresponded to intense crying, acute fever and cough (Table 4). In 2020, in paediatric patients, the nurse independently resolved more cases of foreign bodies in the nose, foreign bodies in the ear, acute diarrhoea, acute fever, skin and scalp lesions, intense crying, upper tract mucus, insect bite, atopic dermatitis, regurgitation, cough and vomiting than in 2019 ($p < .05$). Resolution of cases of nappy rash, injuries, lice and suspected chicken pox decreased ($p < .05$), while other reasons for paediatric consultation were resolved in similar numbers in both years. To complement these results, the prescriptions issued by nurses and accepted by family physicians were analysed. The rate of prescriptions issued by the nurses and accepted by family physicians was high at 87.7%. The remaining 12.3% were prescriptions rejected and/or modified by the family physician (Table 5). More nurse-issued prescriptions were accepted in 2020 than in 2019 ($p < .001$).

Regarding the impact that the COVID-19 pandemic had on the pattern of demand, we measured the rate of patients in the nursing-led program for minor health issues who were diagnosed with COVID-19 in the 10 days following the visit. From the total of patients seen in 2020, 6545 were diagnosed with COVID-19 in the ten days after the visit (Table 6). The health issues with the highest rate of positives in COVID-19 were upper respiratory symptoms (16.47%)

TABLE 3 Resolution of cases and rates of referral for adult patients

Health issue	2019		2020		p*
	Nurse resolution	Referral to family physician	Nurse resolution	Referral to family physician	
Emergency contraception	37,827 (86.8)	5759 (13.2)	35,440 (87.6)	5030 (12.4)	.001
Contusion	174,035 (47.2)	194,432 (52.8)	190,772 (51.5)	179,887 (48.5)	<.001
Burns	135,393 (92.1)	11,627 (7.9)	124,902 (91.7)	11,243 (8.3)	.001
Diarrhoea/vomiting	653,808 (55.7)	521,019 (44.3)	634,993 (59.8)	425,984 (40.2)	<.001
Epistaxis	12,299 (54.0)	10,489 (46.0)	14,071 (59.2)	9713 (40.8)	<.001
Fever without a focus	30,305 (29.9)	71,203 (70.1)	73,429 (44.4)	91,855 (55.6)	<.001
Injury	1,014,131 (84.7)	182,505 (15.3)	904,464 (85.7)	151,277 (14.3)	<.001
Influenza	74,560 (46.2)	86,886 (53.8)	8679 (39.4)	13,364 (60.6)	<.001
Lesions in skin folds	46,984 (46.5)	54,056 (53.5)	55,112 (51.2)	52,560 (48.8)	<.001
Dizziness	135,395 (24.6)	415,001 (75.4)	152,874 (30.0)	356,022 (70.0)	<.001
Urinary discomfort	525,736 (36.0)	935,035 (64.0)	637,572 (42.6)	860,304 (57.4)	<.001
Odynophagia	575,727 (49.0)	599,480 (51.0)	587,485 (55.8)	465,995 (44.2)	<.001
Odontalgia	82,071 (47.3)	91,501 (52.7)	87,350 (55.0)	71,514 (45.0)	<.001
Sting on the skin	75,530 (45.5)	90,419 (54.5)	67,226 (50.1)	66,845 (49.9)	<.001
Rise in arterial pressure	140,808 (47.1)	158,386 (52.9)	148,388 (51.1)	142,131 (48.9)	<.001
Upper respiratory symptoms	820,135 (36.5)	1,429,818 (63.5)	928,550 (44.3)	1,165,563 (55.7)	<.001
Sprained ankle	46,959 (51.9)	43,481 (48.1)	44,413 (55.0)	36,298 (45.0)	<.001
Total	4,581,703 (48.3)	4,901,097 (51.7)	4,695,720 (53.4)	4,105,585 (46.6)	

*p-value obtained through the chi-squared test according to nurse resolution.

and fever without a focus (7.47%), despite the fact that the majority were categorised as 'other' (47.17%).

4 | DISCUSSION

The results of this study show a high rate of case resolution by primary care nurses in the minor health problem nursing-led program. The positive trend in nurse case resolution increased year on year in both adult and paediatric patients. The capacity for resolution depended on the type of consultation. The most common reasons for consultations in adult patients were injury, urinary discomfort, upper respiratory symptoms, diarrhoea and vomiting, and sore throat, which represented approximately 76% of all consultations. In paediatric patients, the most frequent reasons for consultation were acute fever, injuries, cough, upper tract mucus and vomiting, which represented around 74% of all consultations. It is noteworthy that despite the lockdown due to the COVID-19 pandemic, contusions in adult patients increased with respect to 2019. In paediatric patients, there was a rise in accidents resulting from the introduction of foreign bodies into the nose or the ear. These data confirm that the family home is an environment where accidents occur frequently, as reported by Clara Zoni et al. (2014) and Molina Gutiérrez et al. (2020) in their respective studies. On the other hand, as in other countries (Olsen et al., 2020), it was observed that cases of influenza in adult patients dropped considerably from one year to the next, with 86% fewer in 2020, coinciding with the COVID-19 pandemic. These data may indicate that the social measures recommended during the initial stage of the pandemic, along with lockdown, school closures, social distancing, and the use of masks and hand hygiene, affected transmission of the influenza virus (Reina, 2021).

The highest resolution rates (>85%) in adult patients were seen in burns, emergency contraception and injuries, while the lowest (<40%) were observed in urinary discomfort, dizziness and fever without a focus. This difference in resolution rates could be related to the fact that the first health issues correspond to conditions associated with nurses' traditional practice, while the health issues with lower resolution rates correspond to categories requiring experience in exploratory techniques and these may be less familiar to the nurses despite their training (Fabrellas et al., 2011). Moreover, it is important to point out that the action algorithms for issues with a lower resolution rate contain ample alerts leading to referral of the patients to family physicians. As such, the lowest nurse resolution rates may be due to the strict management stipulated in the minor health problem nursing-led program algorithms. The highest resolution rates (>84%) in paediatric patients were reached in burns, breastfeeding difficulties and infant colic, while the lowest rates (<45%) corresponded to intense crying, acute fever and cough. As with adult patients, the differences in resolution rates for acute health issues in paediatric patients could be related to the degree of familiarity with the exploratory techniques that require a consultation and/or strict management in accordance with the program algorithm.

TABLE 4 Case resolution and paediatric patient referral rate for paediatric patients

	2019		2020		
Health issue	Nurse resolution	Referral to family physician	Nurse resolution	Referral to family physician	*p**
Nappy rash	24,984 (74.4)	8618 (25.6)	25,033 (73.2)	9181 (26.8)	<.001
Infant colic	8553 (84.0)	1625 (16.0)	8701 (84.0)	1653 (16.0)	.998
Contusion on fingers	57,940 (68.9)	26,133 (31.1)	53,002 (69.2)	23,559 (30.8)	.176
Foreign bodies in the nose	1325 (58.4)	944 (41.6)	1549 (62.0)	950 (38.0)	.011
Foreign bodies in the ear	3868 (65.2)	2068 (34.8)	4813 (66.8)	2387 (33.2)	.042
Burns	22,094 (91.4)	2067 (8.6)	19,891 (91.5)	1845 (8.5)	.798
Acute diarrhoea	57,063 (66.8)	28,315 (33.2)	48,618 (68.6)	22,244 (31.4)	<.001
Breastfeeding difficulties	2021 (86.8)	308 (13.2)	2299 (88.1)	312 (11.9)	.177
Epistaxis	3651 (68.0)	1722 (32.0)	3413 (69.7)	1485 (30.3)	.059
Acute fever	150,046 (37.7)	248,459 (62.3)	164,176 (42.3)	224,028 (57.7)	<.001
Injuries	200,629 (79.6)	51,345 (20.4)	173,421 (79.3)	45,354 (20.7)	.003
Face and scalp skin lesions	27,870 (55.4)	22,406 (44.6)	29,612 (57.5)	21,849 (42.5)	<.001
Upper tract mucus	66,272 (54.3)	55,855 (45.7)	63,497 (58.6)	44,885 (41.4)	<.001
Suspected thrush in the mouth	2608 (65.6)	1365 (34.4)	2769 (64.6)	1520 (35.4)	.302
Atopic dermatitis	8790 (68.0)	4140 (32.0)	10,060 (70.4)	4222 (29.6)	<.001
Insect bite	22,046 (57.1)	16,545 (42.9)	18,272 (58.5)	12,950 (41.5)	<.001
Intense crying	1825 (43.6)	2358 (56.4)	2201 (47.8)	2405 (52.2)	<.001
Lice	980 (84.0)	186 (16.0)	1183 (80.6)	285 (19.4)	.021
Regurgitation	980 (70.7)	406 (29.3)	1497 (77.0)	447 (23.0)	<.001
Constipation	13,022 (77.5)	3791 (22.5)	13,116 (77.7)	3775 (22.3)	.662
Suspected chicken pox	3577 (52.5)	3234 (47.5)	2481 (44.4)	3106 (55.6)	<.001
Cough	91,072 (34.7)	171,516 (65.3)	87,990 (37.3)	147,748 (62.7)	<.001
Vomiting	60,169 (58.4)	42,822 (41.6)	54,584 (60.8)	35,192 (39.2)	<.001
Total	831,385 (54.4)	696,228 (45.6)	792,178 (56.4)	611,382 (43.6)	

*p-value obtained through the chi-squared test according to nurse resolution.

TABLE 5 Prescriptions issued by nurses and accepted by family physicians over the two-year period

	Nurse prescription (%)		
Resolution	2019	2020	*p**
Accepted by the family physician	621,276 (87.5)	640,968 (87.8)	<.001
Rejected or modified by a family physician	88,732 (12.5)	88,940 (12.2)	
Total prescriptions	710,008	729,908	

*p-value obtained through the chi-squared test.

Regarding the prescriptions issued by nurses, a high rate of independent prescription accepted by family physicians was observed, some 87.7% of the total. We should stress that the legal situation with respect to independent nursing prescription in Catalonia, during the two years of our study, was undergoing changes due to the publication of Royal Decree 180/2019, of the 27 August (Decreto 180, 2019), which regulates the conditions and organisation rules. This decree defined nurses' action framework regarding the indication, use and dispensing authorization for medications and health products for human use. In addition, it set out the requirements to obtain accreditation, which were qualifications and at least one year of professional experience, or in the absence of these, passing an adaptation course.

The COVID-19 pandemic, with the declaration of a state of emergency on the 14 March, led to a change in the pattern of care demand in the population. The results show how some of the patients seen in the nursing-led program for minor health issues were diagnosed with COVID-19 in the ten days after their visit, with the reasons for consultation with the highest rates of positives those classified as 'other', followed by upper respiratory symptoms and fever without a focus. The classification as 'other' could be due to the care burden at the time, along with the wide range of COVID-19 symptoms. In addition, the frequency of acute minor health issues assessed in the nursing-led program decreased in 2020 in both adult (7.2%) and paediatric patients (10.7%). This reduction could be a consequence of care

TABLE 6 Diagnosed with COVID-19 within ten days of attending the nursing care program for minor health issues

Health issue	Diagnosed with COVID-19 (%)
Emergency contraception	23 (0.35%)
Contusion	106 (1.62%)
Burns	33 (0.50%)
Diarrhoea/vomiting	332 (5.07%)
Fever without a focus	489 (7.47%)
Injury	308 (4.71%)
Influenza	44 (0.67%)
Lesions in skin folds	13 (0.20%)
Dizziness	124 (1.89%)
Urinary discomfort	455 (6.95%)
Odynophagia	338 (5.16%)
Odontalgia	24 (0.37%)
Sting on the skin	32 (0.49%)
Rise in arterial pressure	51 (0.78%)
Upper respiratory symptoms	1078 (16.47%)
Sprained ankle	8 (0.12%)
Other	3087 (47.17%)
Total	6545

restructuring at the onset of the COVID-19 pandemic. Some primary care centres closed their doors and reassigned their professionals to other centres, thus concentrating their activities. Moreover, patient access was limited and face-to-face care was reduced so that only emergency care was maintained (Batalla et al., 2020). The population was requested to call a telephone number managed by health professionals before going to the emergency room. Patients received advice and guidance from these professionals, who dealt with their health issues to avoid unnecessary travel and waiting times.

The nursing-led program for minor health issues increased the number of areas covered in comparison with the program initiated in 2009, while also increasing the number of centres involved. As indicated by Fabrellas et al. (2011), the program began with 23 algorithms for the management of minor issues: 16 for adult and 7 for paediatric patients. A further 17 algorithms have been added, bringing the current total to 40: 17 for adult and 23 for paediatric patients. Similarly, the results of our study are in line with those obtained by Fabrellas et al. (2011) who reported high levels of resolution by nurses and added that a low rate of repeat consultations for the same reason was observed. The difference in the percentage of resolutions compared to the Fabrellas et al. (2011) study may be related to the increase in the number of health conditions studied.

A large body of evidence from clinical trials and observational studies suggests that nursing professionals are able to offer quality care to patients with acute minor health issues, achieving a high degree of satisfaction and similar health outcomes to those of physicians (Brugués Brugués et al., 2016; Fabrellas et al., 2013, 2015; Horrocks et al., 2002). A clinical trial carried out by various primary care teams in Catalonia showed that nurses obtained resolution levels in patients with acute low-complexity health issues which were similar to those achieved by physicians, reaching resolution in 86.3% of cases (Iglesias et al., 2013). Furthermore, in a prospective study with a three-year follow-up, it was observed that, after a training program, the cases resolved by nurses increased during follow-up while repeat consultations decreased (Jurado Campos et al., 2015).

4.1 | Strength and limitations

The major strength of this study is the large number of patients included over a large geographical area and long observation period. As strengths of the program itself, we would point out that the reorganisation of the internal circuits in the health centres, adapting them to provide care centered on the users' needs and each professional's tasks, promotes the efficiency of the health system, a priority for health institutions. However, the study has some limitations. First, the results would have been strengthened by assessing the rates of repeat consultations for the same health reason but these were not evaluated in our study. Second, the restructuring of emergency care in primary care and the installation of new telephone services during the COVID-19 pandemic made it difficult to interpret the real effects of the nursing-led program for minor health issues. Despite these limitations, we consider that the study findings can be generalised as our results were obtained in a large primary care setting.

5 | CONCLUSION

The results of the present study suggest that the nursing-led program for minor health issues demonstrates acceptable resolution by nurses. At the same time, although the legal issues surrounding nursing prescription complicated the development of care responses for minor health issues, nurses have been carrying out prescription activities with very favourable results, pending its regularisation.

6 | RELEVANCE TO CLINICAL PRACTICE

Health institutions and policy-makers on health issues should consider that nurses, based on their capacities and training, have become a key element in ensuring that the health system responds to the demands of the population. The full development of nurses' competencies contributes to the growth of the nursing profession while increasing accessibility and improving care continuity. It also entails a greater capacity for case resolution among teams in their responses to the needs and demands of the population which benefits citizens and the health system.

AUTHOR CONTRIBUTIONS

Sonia Fernández Molero, Cristina Laserna Jiménez, Andreu Baiget Ortega, Souhel Flayeh Beneyto, Ana Ríos Jiménez and Núria Fabrellas Padrés made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. Sonia Fernández Molero, Cristina Laserna Jiménez and Núria Fabrellas Padrés involved in drafting the manuscript or revising it critically for important intellectual content. Sonia Fernández Molero, Cristina Laserna Jiménez, Andreu Baiget Ortega, Souhel Flayeh Beneyto, Ana Ríos Jiménez and Núria Fabrellas Padrés involved in final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Sonia Fernández Molero, Cristina Laserna Jiménez, Andreu Baiget Ortega, Souhel Flayeh Beneyto, Ana Ríos Jiménez and Núria Fabrellas Padrés agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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CONFLICT OF INTEREST

All authors contributed to the study in accordance with the international consensus on authorship, and agreed on and approved the final draft with respect to data analysis and the conclusions reached in the manuscript. Further, we declare that there are no conflicts of interest or funding and we transfer intellectual property of the paper to your journal.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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