International Journal of Emergency Medicine

RESEARCH

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Patients' attitude and information-seeking behaviour on intra-venous fluid therapy in emergency department for common cold: a cross-sectional study

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Abstract

Objective This study aimed to examine patients' attitude and information-seeking behaviour related to intra-venous (IV) fluid use for the common cold visited in emergency department.

Methods A cross-sectional analytical study was conducted from January to May 2024. A total of 365 patients aged 18 years and older presenting with cold symptoms were surveyed using a validated questionnaire. The survey assessed demographic information, attitudes towards IV fluid therapy, and the sources of information patients used. Descriptive statistics, and one-sample t-tests were performed to compare mean perceptions against a neutral score (e.g., 3 on a 5-point Likert scale) using SPSS version 21.

Results The mean age of participants was 39.35 ± 15.48 years, with 48.5% women and 51.5% men. Nearly two-third (62.19%) of participants were agree or strongly agree that patient with cold must receive IV Fluid to get well. While the majority of participants disagreed that IV fluid therapy strengthens the body (mean = 2.08 ± 1.02) or boosts immunity (mean = 2.03 ± 0.98), many perceived it as effective in infection elimination (mean = 3.81 ± 1.24) and disease prevention (mean = 3.18 ± 1.09). The majority of participants—81.92%, 88.49%, and 89.04%—agreed that sneezing, runny nose, and mild fever, respectively, required IV fluids. Key information sources were specialists (mean = 4.17 ± 1.17) and medical journals (mean = 3.83 ± 1.18), while general practitioners (mean = 2.43 ± 1.21) and social networks (mean = 2.6 ± 1.33) were less utilized.

Conclusions The findings highlight the need for public health education on the natural course of the common cold and the appropriate use of ED services to reduce unnecessary IV fluid administration.

Keywords Attitude, Common cold, Information-seeking behaviour, Intra-venous fluid, Therapy

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Introduction

The common cold is one of the most common diseases in humans, caused by various respiratory viruses [1]. In 2019, there were 17.2 billion cases of the common cold worldwide, making up nearly 50% of all disease cases globally, according to the Global Burden of Diseases, Injuries, and Risk Factors Study [2]. Even though the cold is usually mild and goes away on its own, it remains a major public health concern due to its high number of cases and the costs it imposes on healthcare systems [3].

Typical symptoms of the common cold include nasal congestion, runny nose, sore throat, cough, general discomfort, and sometimes a low fever. The illness usually lasts for about 1 to 2 weeks in healthy individuals [3, 4]. Though it is generally not severe, the common cold leads to significant costs as people miss work, visit doctors, and buy medicines to treat symptoms [5]. In the United States, the common cold is the leading cause of doctor visits, with around 500 million cases of acute respiratory infections each year, costing nearly $40 billion [6].

To cope with a cold, people often rest at home, drink fluids, take supplements, or use over-the-counter (OTC) medications. Some may also take prescription medications, including antibiotics [7]. In developing countries like Iran, the incidence of flu-like illnesses was reported at 180 and 160 cases per 100,000 people during the 2014–2015 and 2015–2016 seasons, respectively. The burden of these illnesses is even greater in these regions due to limited healthcare resources and economic challenges [8, 9].

In Iran, many people with the common cold visit emergency departments, where their companions often request intravenous (IV) fluids, even though there is little evidence to support their use for treating colds [9, 10]. Patients tend to believe that IV fluids are an effective treatment, which influences their decision to seek care in emergency settings. Studies show that receiving IV fluids can increase patients' feelings of satisfaction and safety with their treatment [11].

However, there is growing evidence that too much IV fluid can harm several body systems, including the heart, lungs, kidneys, immune system, digestive system, and nervous system [11, 12]. This highlights the importance of careful and controlled fluid administration, just like any other medication. It is essential for patients to understand the natural course of the common cold to better manage their expectations, avoid unnecessary use of antibiotics, reduce unnecessary OTC purchases, and lower the demand for IV fluids [13, 14].

Although there is limited research on how patients with the common cold seek information about IV fluids and their attitude towards IV fluid administration, this study aims to address this gap. Specifically, it examines the information-seeking behaviour and attitudes of patients visiting the emergency department at Imam Khomeini Hospital in Sari, Iran. This cross-sectional study aimed to measure patients' attitudes towards IV fluid therapy for common cold, identify primary sources of information influencing these attitudes, and examine associations between demographic factors and treatment preferences.

Methods

Study setting and design

This study is a cross-sectional analytical study using a non-probability convenient sample technique. We conducted a survey among patients suffering with common cold and visited at the emergency department (ED) of Imam Khomeini Educational and Therapeutic Hospital in Sari, affiliated to the University of Medical Science. we targeted on EDs since many IV fluid prescriptions are issued in emergency departments in Iran. January 2024 was the beginning of the recruitment procedure, which ended in May 2024.

Study participants

This study included individuals with self-reported and physician-confirmed common colds who visited the ED, were over 18 years old, and willingly participated. Patients unwilling to participate or diagnosed by physician with other diseases were excluded.

Sample size

The required sample size to assess the information-seeking behavior and attitudes of patients with colds toward fluid therapy in the ED was calculated based on the study by Ala A. et al. [10]. Their study found that 54.9% of patients believed recovery was not possible without IV fluid therapy and appropriate medication. Using this proportion (54.9%) in the following sample size formula for an unknown population: $n = (Z^2pq)/d^2$ where: $Z = 1.96$ (95% confidence level) $p = 0.55$ (cited proportion), $q = 0.45$ (1-p), $d = 0.05$ (margin of error). The estimated sample size was 381 participants.

Research instrument

Since there was no pre-existing validated survey questionnaire that addressed the aim of the study, the questionnaire was designed by item generation through a search of the literature. This questionnaire consists of two parts. The first part contains questions related to personal and social factors related to participants, including (age, gender, marital status, level of education, income status, occupation, place of residence). The second part of this questionnaire which examines the characteristics of information seeking behaviours, has three subscales, which were: (1) the attitude towards the prescription of IV fluid (includes 10 items such as administration of IV Fluid strengthens the body, strengthens the immune system, has a therapeutic effect, has a psychological effect,

eliminates the infection, prevents the progression of the disease, reduces infection, and patient with a cold must receive IV Fluid to get well.); (2) the disease which requires IV fluid (include 14 diseases/items such as mild fever, high fever, weakness and lethargy, sore throat, runny nose, cough, sneeze, muscular pain, anorexia, headache, dizziness, nausea, vomiting and diarrhea); and (3) the information sources used by patients (9 items such as specialist, general practitioner, previous experience, family members, other patients, social networks on the Internet, friends and acquaintances, medical journals and brochure or pamphlet). The 5-point Likert scale and scoring scoring (1-very low; 2-low; 3-not decided; 4-high; 5-very high) were used to determine the responses to the questions and at the end each statement was reported as a percentage. The basis was the average scores of each item and range for score was 1to 5.

To ensure the questions were representative of the concepts they were intended to reflect (attitude and information seeking behaviour), It was verified by a group of specialists that included pharmacovigilance officers, social pharmacy, pharmacoepidemiology, and regulatory science researchers (including a former practicing nurse), as well as an intensive care physician with a lot of expertise in emergency departments. In order to determine the validity of the items after translation-re-translation, the content validity index (CVI) was calculated, which requires more than 0.8 [15]. The Content Validity Index (CVI) for simplicity, clarity, and relevance of the questions was 0.90, 0.87, and 0.92, respectively, for the subscales: attitude towards the prescription of IV fluids, diseases requiring IV fluids, and information sources used by patients. These results indicate that the questions had appropriate validity. The reliability of the instrument was assessed using Cronbach's alpha coefficient to measure internal consistency [15]. The overall internal correlation for the entire instrument was 0.87, while the values for the subscales—attitude towards the prescription of IV fluids, diseases requiring IV fluids, and information sources used by patients—were 0.86, 0.89, and 0.88, respectively.

Data collection procedure

Distribution of the questionnaire took place among the patients suffering with common cold only and visited in ED following the approval of the Head of department. Each participant received comprehensive information regarding the study's objectives and procedures, along with assurances concerning the preservation of their anonymity and the confidentiality of their data. Furthermore, participants were explicitly informed of their voluntary participation and their right to withdraw from the study at any stage without facing any repercussions. After that self-administered questionnaire were distributed among 381 participants. Three trained researchers were assigned to collect data. Researchers are provided with detailed training on study objectives, methodology, inclusion/exclusion criteria, and ethical considerations. Furthermore, training sessions cover the use of study instruments (questionnaires) to ensure consistency.

Statistical analysis

Following data collection, the questionnaires were coded and entered into IBM SPSS Statistics for Windows, Version 21.0 (IBM Corp., Armonk, NY) was used to analyze the data. To ensure the security of personal data, they were encrypted and unauthorized researchers had no access to them. Descriptive statistical tests (standard deviation, mean, average, percentage) were used to describe the data. Further one sample t-test were used to compare mean perceptions against a neutral score (e.g., 3 on a 5-point Likert scale) but chi-square and regression were not used. Missing data were handled using multiple imputation method. This approach was chosen to maintain data integrity and reduce bias. The STROBE checklist was used to report the results. 'Clinical trial number was not applicable.'

Results

We administered 381 questionnaires and received 365 adequately completed responses, which were analyzed. Table 1 shows socio-demographic characteristics of participants. Participants had a mean age of 39.35 ± 15.48 years, with 48.5% women and 51.5% men. Employment status included 36.4% self-employed and 21.4% unemployed. Marital status was 43% single and 44.7% married. University education was completed by 42.5%. Most had a normal BMI (72.1%) and lived in urban areas (69.9%), while 22.2% resided rurally. Lifestyle factors included 20.3% smoking, 18.1% opium use, and 61.4% alcohol consumption. Additionally, 51% lived alone, 51.5% took medication twice daily, and 37.3% sought disease-related information.

The frequency and percentage with mean ± standard deviation of responses to the questions of the reasons for requiring IV Fluid from the patient's point of view are given in Table 2. Most of the participants were disagreed or strongly disagreed that IV Fluid strengthens the body (mean = 2.08 ± 1.02, $p < 0.001$) and boosts the immune system (mean = 2.03 ± 0.98, $p < 0.001$). Similarly, majority of them did not believe it compensates for bodily deficiencies (mean = 2.53 ± 1.01, $p < 0.001$) or has a psychological effect (mean = 2.63 ± 1.28, $p < 0.001$). Conversely, IV Fluid was perceived to eliminate infections (mean = 3.81 ± 1.24, $p < 0.001$) and reduce infection with medication (mean = 3.77 ± 1.19, $p < 0.001$). Its therapeutic effect (mean = 3.16 ± 1.13, $p = 0.006$) and prevention of disease progression (mean = 3.18 ± 1.09, $p = 0.001$) were

Table 1 Socio-demographic characteristics of study participants

Variables	Categories	(*n* = 365)
Age (Mean)	--	39.35 ± 15.48
Age	≤ 25	76 (20.8)
	25–35	111 (30.4)
	≥ 35	178(48.8)
Gender	Female	177 (48.5)
	Male	188 (51.5)
Job	Housewife	60(16.4)
	Employee	52(14.2)
	Retired	42(11.5)
	Self Employed	133(36.4)
	Unemployed	78(21.4)
Marital Status	Single	157(43)
	Married	163(44.7)
	Divorced	23(6.3)
	Widow	22(6)
Education	Under diploma	123(33.7)
	Diploma	87(23.8)
	University	155(42.5)
BMI	< 18.5	19(5.2)
	18.5–25	263(72.1)
	25–30	65(17.8)
	30–35	18(4.9)
Place of Residence	City	255(69.9)
	Village	81(22.2)
	Suburbs of the city	29(7.9)
Smoking history	Non-smoker	209(57.3)
	Exposed to smoke	45(12.3)
	Currently a smoker	74(20.3)
	History of smoking in the past	37(10.1)
Opium use	Yes	66(18.1)
	No	299(81.9)
Alcohol consumption	Yes	224 (61.4)
	No	141(38.6)
Who do you live with?	Only	186(51)
	With wife	59(16.2)
	With wife and children	114(31.2)
	With children	6(1.6)
How many times a day do you take medicine?	Once a day	54(14.8)
	Twice a day	188(51.5)
	Three times a day	110(30.1)
	Four times a day	13(3.6)
Have you searched for information about your disease?	Yes	136(37.3)
	No	229(62.7)

moderately endorsed. Administering IV Fluid for colds was also supported (mean = 3.67 ± 0.99, $p < 0.001$). However, its combined use with medication was not significantly perceived as effective (mean = 2.9 ± 1.03, $p = 0.088$).

The one-sample t-test revealed significant perceptions about symptoms requiring IV fluid administration [Table 3]. Participants strongly associated IV fluids with sneezing (mean = 4.63 ± 0.85, $p < 0.001$), mild fever (4.49 ± 0.88, $p < 0.001$), runny nose (4.39 ± 0.93, $p < 0.001$), headache (4.27 ± 1.07, $p < 0.001$), dizziness (4.18 ± 1.05, $p < 0.001$), cough (4.19 ± 0.91, $p < 0.001$), and sore throat (4.11 ± 1.07, $p < 0.001$). Surprisingly, high fever (2.63 ± 0.98, $p < 0.001$), weakness (2.51 ± 0.99, $p < 0.001$), nausea (2.28 ± 1.07, $p < 0.001$), vomiting (1.71 ± 0.95, $p < 0.001$), and diarrhea (1.75 ± 1.01, $p < 0.001$) were less commonly linked.

The one-sample t-test results indicate significant differences in the use of various information sources for searching information related to IV Fluid administration among patients ($N = 365$), [Table 4]. "Specialists" (mean = 4.17 ± 1.17, $p < 0.001$) were the most preferred source, followed by "medical journals" (mean = 3.83 ± 1.18, $p < 0.001$) and "brochures or pamphlets" (mean = 3.76 ± 1.2, $p < 0.001$). "Other patients" (mean = 3.6 ± 1.04, $p < 0.001$) and "friends and acquaintances" (mean = 3.52 ± 1.13, $p < 0.001$) also scored above the neutral point. In contrast, sources like "general practitioners" (mean = 2.43 ± 1.21, $p < 0.001$), "previous experience" (mean = 2.01 ± 1.09, $p < 0.001$), and "family members" (mean = 2.63 ± 1.11, $p < 0.001$) scored significantly below 3, indicating limited reliance. Similarly, "social networks on the Internet" (mean = 2.6 ± 1.33, $p < 0.001$) were less frequently used.

Discussion

The findings of this study provide a comprehensive understanding of the attitudes and information-seeking behaviours of patients presenting with common colds regarding intravenous (IV) fluid therapy. The results highlight important trends in perceptions, preferred information sources, and the common disease for seeking IV therapy in the emergency department (ED).

Patients expressed mixed attitude about the benefits of IV fluid therapy for common colds. Although most participants rejected the notion that IV fluids strengthen the body or boost the immune system, a significant proportion believed in their therapeutic benefits, such as eliminating infections and reducing their severity when combined with medication. These perceptions align with the psychological concept of "symbolic efficacy," where patients associate invasive interventions like IV therapy with improved outcomes regardless of their clinical necessity [16, 17]. This is likely influenced by a placebo effect, where patients perceive tangible treatments like infusions as more effective than oral medications or non-invasive interventions.

Interestingly, the study also found moderate endorsement of IV fluid therapy for its potential to prevent disease progression. This belief may stem from a lack of understanding of the self-limiting nature of the common cold and the limited role of IV fluids in treating viral infections [18]. These findings suggest that targeted

Table 2 The participants' attitude for requiring IV fluid (*N* = 365)

Attitude for requiring IV Fluid from the patient's point of view	Response [Number (%)]					Mean ± SD	t	*P* value
	Strongly disagree	Disagree	Not decided	Agree	Strongly agree			
1. Administration of IV Fluid strengthens the body	103(28.2)	181(49.6)	50(13.7)	10(2.7)	21(5.8)	2.08 ± 1.02	-17.17	< 0.001
2 Administering IV Fluid strengthens the lack of substances in the body.	48(13.2)	151(41.4)	104(28.5)	45(12.3)	17(4.7)	2.53 ± 1.01	-8.62	< 0.001
3. Administration of IV Fluid strengthens the immune system	113(31)	173(47.4)	49(13.4)	15(4.1)	15(4.1)	2.03 ± 0.98	-18.72	< 0.001
4 Administering IV Fluid has a therapeutic effect	37(10.1)	58(15.9)	119(32.6)	110(30.1)	41(11.2)	3.16 ± 1.13	2.76	0.006
5. Administration of IV Fluid has a psychological effect	70(19.2)	140(38.4)	52(14.2)	61(16.7)	42(11.5)	2.63 ± 1.28	-5.5	< 0.001
6. Administering IV Fluid eliminates the infection	30(8.2)	31(8.5)	50(13.7)	121(33.2)	133(36.4)	3.81 ± 1.24	12.44	< 0.001
7. Administering IV Fluid prevents the progression of the disease	29(7.9)	67(18.4)	111(30.4)	123(33.7)	35(9.6)	3.18 ± 1.09	3.26	0.001
8. Injection of medicine with IV Fluid is more effective	33(9)	90(24.7)	146(40)	70(19.2)	26(7.1)	2.9 ± 1.03	-1.71	0.088
9. Injection of medicine with IV Fluid reduces infection	23(6.3)	41(11.2)	48(13.2)	137(37.5)	116(31.8)	3.77 ± 1.19	12.39	< 0.001
10. A patient with a cold must receive IV Fluid to get well.	17(4.7)	19(5.2)	102(27.9)	156(42.7)	71(19.5)	3.67 ± 0.99	12.85	< 0.001

Table 3 The symptoms which need to receive IV fluid *N* = 365)

What symptoms do you have in your body that you think you need to receive IV Fluid?	Response [Number (%)]					Mean ± SD	t	*P* value
	Strongly disagree	Disagree	Not decided	Agree	Strongly agree			
1. Mild fever	9(2.5)	6(1.6)	24(6.6)	84(23)	242(66.3)	4.49 ± 0.88	32.28	< 0.001
2 High fever.	35(9.6)	34(9.3)	22(6)	140(38.4)	134(36.7)	4.02 ± 0.98	-7.004	< 0.001
3. Weakness and lethargy	44(12.1)	21(5.8)	28(7.7)	113(31)	159(43.6)	3.81 ± 0.99	-9.3	< 0.001
4 Sore throat	12(3.3)	27(7.4)	41(11.2)	113(31)	172(47.1)	4.11 ± 1.07	19.68	< 0.001
5. Runny nose	11(3)	10(2.7)	21(5.8)	106(29)	217(59.5)	4.39 ± 0.93	28.31	< 0.001
6. Cough	10(2.7)	6(1.6)	46(12.6)	143(39.2)	160(43.8)	4.19 ± 0.91	24.95	< 0.001
7. Sneeze	10(2.7)	7(1.9)	9(2.5)	53(14.5)	286(78.4)	4.63 ± 0.85	36.73	< 0.001
8. Muscular pain	37(10.1)	173(47.4)	107(29.3)	21(5.8)	27(7.4)	2.52 ± 1.00	-8.94	< 0.001
9. Anorexia	76(20.8)	163(44.7)	74(20.3)	19(5.2)	33(9)	2.36 ± 1.14	-10.56	< 0.001
10. Headache	12(3.3)	24(6.6)	30(8.2)	86(23.6)	213(58.4)	4.27 ± 1.07	22.6	< 0.001
11. Dizziness	11(3)	21(5.8)	47(12.9)	97(26.6)	189(51.8)	4.18 ± 1.05	21.39	< 0.001
12. Nausea	75(20.5)	186(51)	52(14.2)	29(7.9)	23(6.3)	2.28 ± 1.07	-12.71	< 0.001
13. Vomit	184(50.4)	137(37.5)	22(6)	8(2.2)	14(3.8)	1.71 ± 0.95	-25.61	< 0.001
14. Diarrhea	183(50.1)	132(36.2)	22(6)	12(3.3)	16(4.4)	1.75 ± 1.01	-23.4	< 0.001

Table 4 Sources to search for information related to IV fluid administration for common cold (*N* = 365)

Which of the following information sources do you use to search for information related to IV Fluid administration for common cold?	Response, [Number (%)]					Mean ± SD	t	*P*-value
	Strongly disagree	Disagree	Not decided	Agree	Strongly agree			
1. Specialist	28(7.7)	10(2.7)	26(7.1)	108(29.6)	193(52.9)	4.17 ± 1.17	19.11	< 0.001
2 General practitioner	97(26.6)	107(29.3)	94(25.8)	38(10.4)	29(7.9)	2.43 ± 1.21	-8.86	< 0.001
3. Previous experience	145(39.7)	123(33.7)	64(17.5)	14(3.8)	19(5.2)	2.01 ± 1.09	-17.26	< 0.001
4 Family members	59(16.2)	114(31.2)	118(32.3)	49(13.4)	25(6.8)	2.63 ± 1.11	-6.25	< 0.001
5. Other patients	15(4.1)	36(9.9)	100(27.4)	141(38.6)	73(20)	3.6 ± 1.04	11.1	< 0.001
6. Social networks on the Internet	85(23.3)	117(32.1)	74(20.3)	35(9.6)	54(14.8)	2.6 ± 1.33	-5.63	< 0.001
7. Friends and acquaintances	22(6)	39(10.7)	111(30.4)	111(30.4)	82(22.5)	3.52 ± 1.13	8.89	< 0.001
8. Medical journals	20(5.5)	38(10.4)	56(15.3)	121(33.2)	130(35.6)	3.83 ± 1.18	13.43	< 0.001
9. Brochure or pamphlet	20(5.5)	43(11.8)	68(18.6)	105(28.8)	129(35.3)	3.76 ± 1.2	12.15	< 0.001

educational interventions may help to correct misconceptions and minimize the unnecessary use of IV fluids, especially in resource-limited healthcare settings like Iran. Developing patient education modules for healthcare providers, creating clear and concise informational materials, and providing these informations could contribute to reducing non-urgent emergency department visits.

Participants associated a wide range of common cold symptoms, such as sneezing, mild fever, runny nose, and cough, with the need for IV therapy. However, more severe symptoms like high fever, vomiting, and diarrhoea were less frequently linked to IV fluid use. This paradox indicates a knowledge gap where patients perceive milder symptoms as treatable with IV therapy while overlooking the actual indications for such interventions, such as dehydration or severe electrolyte imbalances. This misalignment between perceived and actual clinical indications underscores the need for clearer patient education during ED visits [19, 20].

Patients showed a strong preference for consulting specialists, medical journals, and informational brochures, reflecting a high level of trust in formal medical sources. This aligns with prior studies indicating that individuals are more likely to rely on healthcare professionals for guidance in acute conditions [21]. However, reliance on informal sources such as friends, acquaintances, and other patients suggests that peer influence also plays a role in shaping health behaviours. Surprisingly, social media and general practitioners were less frequently consulted, indicating a potential underutilization of these channels for disseminating accurate information. Enhancing the visibility and credibility of online resources and engaging general practitioners in patient education could bridge this gap [22, 23].

The high rate of ED visits for self-limiting conditions like the common cold contributes significantly to healthcare system burdens. These findings align with previous studies indicating that most study participants visited the emergency department (ED) for non-urgent needs [24] and symptoms of upper respiratory tract infections [25]. Additionally, another study highlighted that a key factor contributing to the inappropriate use of the ED is patients' perception that they require urgent intervention, even for mild complaints [26]. Inappropriate administration of IV fluids not only increases costs but also exposes patients to unnecessary risks, such as infections or fluid overload. The findings of this study emphasize the importance of educating both patients and healthcare providers about evidence-based management of common colds. Integrating brief educational interventions during ED visits could help dispel myths about IV fluid therapy and empower patients to adopt self-care strategies [27, 28].

Additionally, implementing triage protocols that identify patients with true indications for IV therapy could optimize resource allocation. For example, simple guidelines could help healthcare workers determine whether IV fluids are warranted based on hydration status and clinical severity [29].

While this study provides valuable insights, it is limited by its cross-sectional design and reliance on self-reported data, which may introduce recall bias. The single-centre nature of this study limits the generalizability of its findings. Future research could explore longitudinal designs to assess whether the same individuals display consistent or varying attitudes across multiple healthcare visits. Additionally, the influence of upbringing on health-seeking behaviour, Family attitudes toward healthcare usage, Childhood habits regarding medication use, Psychosocial factors such as social support mechanisms and environmental influences. Incorporating these perspectives in future research could provide a more comprehensive understanding of the factors driving patient behaviours.

Further studies are requiring such as longitudinal studies could assess whether patient attitudes and information-seeking behaviors remain consistent over time, while intervention-based research should explore the effectiveness of patient education modules, clear informational materials, and digital health resources in reducing unnecessary ED visits. Additionally, integrating structured triage protocols to identify true indications for IV therapy and enhancing healthcare provider communication strategies could improve patient care and resource allocation. Further studies should include regression and/or multivariate analysis to examine sociocultural and psychosocial factors, such as family influence, childhood healthcare habits, and social support mechanisms, to gain a more comprehensive understanding of health-seeking behaviors and inform future policy and healthcare system improvements.

Conclusion

This study identifies significant gaps in patient understanding and attitudes toward IV fluid therapy for common colds, leading to potential overutilization of ED. To address the misconceptions related to IV fluid therapy, specific educational interventions should be implemented, emphasizing evidence-based guidelines on appropriate IV fluid use. Healthcare providers must proactively engage in patient education, leveraging trusted sources such as specialists, formal publications, and primary care physicians to ensure accurate information dissemination. Additionally, enhancing the credibility and accessibility of alternative channels, including social media and community healthcare platforms, can help bridge knowledge gaps. By aligning patient perceptions with clinical best practices, healthcare systems can optimize resource utilization, reduce unnecessary ED visits, and improve overall patient outcomes.

Abbreviations

CVI	Content validity index
ED	Emergency department
IV	Intravenous fluid
OTC	Over the counter

Acknowledgements
The authors express their sincere gratitude to all the participants who participated in this study.

Author contributions
Study conception and design: AM, SZ, SMH and SHH; data collection: FK, SHM and AM; analysis and interpretation of results: SKM, NK, and ZHM; drafting of the manuscript: AM, SZ, SMH and SHH.

Funding
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability
The data used for analysis during the present study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
The study was approved by the Ethical committee of Research Center for Social Factors Affecting Health and the Vice-Chancellor of Research and Technology of Mazandaran University of Medical Sciences (code: IR.MAZUMS.3.REC.1402.18066). Each participant received full information about the study and questionnaire. Prior to participation, written informed consent was obtained from all enrolled participants.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Received: 26 December 2024 / Accepted: 25 February 2025
Published online: 20 March 2025

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