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Traditional Patient Misconceptions about the Causes and Care of the Common Cold

Hastaların Soğuk Algınlığının Sebepleri ve Tedavisi ile İlgili Geleneksel Yanlış İnanışları

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Abstract

Objectives: Common cold is often caused by rhinovirus. It is a mild and self-limiting illness that almost always resolves spontaneously. To date there is no effective treatment for common cold and the routine use of antibiotics for the common cold is not recommended. The cold-related knowledge and beliefs of people may not correspond with current medical opinion. Knowledge and beliefs may differ on the basis of a person's ethnicity or socioeconomic status. The aim of this study was to investigate the beliefs about causes and management of common cold among Turkish people.

Material and Methods: This study was conducted in a family health care center in Adana city, located at Mediterranean region of Turkey. 146 participants attended to this descriptive study. The participants fulfilled a questionnaire developed by the researchers.

Results: Of the participants, 73.28 % were female and mean age was 37.13±12.01 years. There was a statistically significant difference between male and female participants' occupation (p<0.001) and education levels (p=0.01). People believed that heat transfers by conduction or convection lead to common cold. 42(28.76%) subjects thought that those heat transfers caused fever. There was a statistically significant difference between male and female participants' belief about "drinking cold water when sweaty causes common cold" (p=0.044). 30 (20.54%) participants used antibiotic for common cold.

Conclusion: Superstitious beliefs about common cold were frequent in Turkey. People need to be informed about the causes of common cold and antibiotic misuse.

Key words: Common cold, traditional medicine, physicians

Öz

Amaç: Soğuk algınlığına sıklıkla rhinovirüsler neden olur. Hafif ve kendi kendini sınırlayan ve çoğunlukla spontan olarak geçen bir hastalıktır. Soğuk algınlığının günümüzde etkili bir tedavisi yoktur ve soğuk algınlığı için rutin antibiyotik tedavisi önerilmemektedir. İnsanların soğuk algınlığına ilişkin bilgi ve inanışları güncel tıbbi görüşle uyuşmayabilir. Bilgi ve inanış, kişinin etnik kökeni veya sosyoekonomik düzeyi ile değişebilir. Bu çalışmanın amacı Türk halkının soğuk algınlığı sebep ve yönetimi hakkındaki inanışlarını araştırmaktır.

Materyal ve Metotlar: Bu çalışma Türkiye'nin Akdeniz Bölgesi'nde yer alan Adana ilindeki bir aile sağlığı merkezinde yapılmıştır. Bu tanımlayıcı çalışmaya 146 katılımcı katıldı. Katılımcılar araştırmacılar tarafından hazırlanan soru formunu doldurdu.

Bulgular: Katılımcıların % 73,28'i kadın ve ortalama yaşları 37,13±12,01 yıldı. İstatistiksel olarak erkek ve kadın katılımcıların meslekleri (p<0,001) ve eğitim seviyeleri (p=0,01) arasında anlamlı fark vardı. Katılanlar kondüksiyon veya konveksiyon ile ısı transferinin soğuk algınlığına yol açtığına inanıyordu. 42(%28,76) kişi ısı iletiminin ateşe neden olduğuna inanıyordu. Erkek ve kadın katılımcılar arasında "Terliyken soğuk su içmek soğuk algınlığına neden olur" kanısına inanışta istatistiksel olarak anlamlı bir fark vardı (p=0,044). 30 (%20,54) katılımcı soğuk algınlığı için antibiyotik kullanmaktaydı.

Sonuç: Türkiye'de soğuk algınlığı hakkında batıl inanışlar yaygındır. Toplum soğuk algınlığının sebepleri hakkında ve yerinde antibiyotik kullanımı hakkında bilgilendirilmelidir.

Anahtar kelimeler: Soğuk algınlığı, geleneksel tıp, doktorlar

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Introduction

The common cold is one of the most prevalent diseases. The cause of the disease is a wide variety of virus families, primarily over 100 serotypes of rhinoviruses.[1] Symptoms which often appear, such as sore throat, stuffy or runny nose, cough, and malaise, are usually worse in 1–3 days and can last 7–10 days, and sometimes as long as 3 weeks. The disease affects adults approximately two to three times/year and children under the age of 2 years, approximately six times/year. It is estimated that direct medical costs in the United States, including physician visits, secondary infections, and medications for colds, were an estimated $17 billion/year in 1997. Indirect costs from missed work for illness or to look after a sick child were an estimated $25 billion/year. [2] There are different categories of cold in traditional Chinese medicine (TCM) as "wind-cold type cold" "wind-heat type cold" and "summer heat and dampness type cold". The categories are based on the causes and symptoms of cold.[3] The typical wind-cold type common cold with normal physique, which is the majority of the wind-cold type common cold, is characterized by a history of catching cold, feeling cold, and nasal congestion with clear snivel.[4]

Because there are no effective antivirals to cure the common cold and few effective measures to prevent it, treatment should focus on symptom relief. The most commonly used treatments include over-the-counter antihistamines, decongestants, cough suppressants, and expectorants. These treatments can be used alone or in combination.[5]

Traditional Chinese medicine (TCM) practitioners and general public have deep belief that herbal medicines are effective in alleviating symptoms and shortening the duration of the common cold. Chinese proprietary herbal medicine (CPHMs) is an important component of Chinese herbs.[6,7]

Many people seek medical care for cold symptoms. The cold-related knowledge and beliefs of adults seeking medical care for themselves or their children may not correspond with current medical opinion. Knowledge and beliefs may differ on the basis of a person's ethnicity or socioeconomic status.[8] Factors such as low environmental temperature and dampness neither facilitate getting a cold nor affect its severity.[9] In Turkey, it is widely believed that the common cold is caused by many conditions such as "sitting or walking on concrete floor", "being exposed to air current", "drinking cold water when you are sweaty", or "sleeping without covering oneself". This has not been only a general community agreement. For over 300 years, scientific and clinical literature reported a link between getting cold and chilling of the body surface.[10] Even the name of the disease refers to a link between exposures to cold and getting common cold. However, each attempt to find a connection between exposure to cold and inclination to infection was destined to fail.[11–13] Medical virology books do not support the assumption that there is a link between exposure to cold and

getting common cold, and frequently highlight that this link is a product of superstitions.[14] We aimed to document beliefs about causes and management of common cold among Turkish people in our survey.

Material and methods

This descriptive study was conducted in a family health care center in Adana city, located in Mediterranean region of Turkey.

Subjects were chosen randomly, according to their daily application order with random numbers created from www.random.org. 146 subjects attended to the study while 45 people rejected to participate in three months' time. All participants were native Turkish.

The participants were asked to fulfill a survey with 20 questions prepared by the researchers. Participants were asked to complete the questionnaires within the family health care centers and return them in an envelope, along with their written informed consent, before leaving. Mentally retarded patients or patients under 18 years old were not included in the study. Ethical approval was gathered from local ethical committee.

The statistical analysis was carried out using the SPSS version 16 program. Results were expressed as mean, standard deviation, and percentages for categorical data. Chi-square test was used for categorical comparisons. P value less than 0.05 was considered statistically significant.

Table 1. Sociodemographic properties of the subjects

Educational status	**n (%)**
Primary school	76 (52.06)
Secondary school	21 (14.38)
High school	21 (14.38)
College-university	28 (19.18)
Profession	**n (%)**
Housewife	85 (58.22)
Blue collar	31 (21.23)
White collar	17 (11.65)
Retired	9 (6.16)
Jobless	4 (2.74)
Systemic diseases	n (%)
Hypertension	19 (13.01)
Diabetes mellitus	10 (6.85)
Hyperlipidemia	6 (4.11)
Coronary artery disease	3 (2.05)
Other	31(21.24)
No systemic disease	77 (52.74)

Results

A total of 107 (73.28%) female and 39 (26.72%) male subjects were enrolled in the study. Subjects' mean age was 37.13±12.01 (min: 18, max: 71) years. 20 (13.70%) patients were single, 126 (86.31%) patients were married. Other sociodemographic properties of subjects are listed in Table 1. There was a statistically significant difference between male and female participants' occupation ($p<0.001$) and education levels ($p=0.01$).

The subjects were asked whether they had fever and whether they consulted to a health care professional for; "drinking cold water when sweaty" or "sitting or walking on concrete floor" or "being exposed to air current" or "sleeping without blanket". 42 (28.76%) subjects had fever and 58 (39.72%) people applied to doctor. The answers of the subjects about the causes of common cold and their interventions for the treatment and/or symptom relief are listed in Table 2. There was a statistically significant difference between male and female participants belief about "drinking cold water when sweaty causes common cold" ($p=0.044$). Gender did not have a relation with other beliefs about causes ($p=0.165$).

Discussion

Superstitions are defined as a way of satisfying individuals' motive to know about the near and distant future and to protect themselves against unknown forces.[15] People create connections between unrelated objects and events and develop beliefs based on these connections, and then fulfill the requirements of these beliefs, even though they cannot explain the reason for this.[16] People may have resort to traditional practices not based on a rational idea in order to find a remedy for their disease.[17]

In a study performed in US, colds were viewed as having natural causes like exposure to cold.[18] In another study in US, most respondents believed getting tired or run-down caused a cold; few believed getting wet or chilled caused a cold.[8] Our survey showed us superstitious beliefs about common cold were frequent in Turkey. People believed that heat transfers by conduction or convection lead to common cold. 28.76% of subjects thought that those heat transfers caused fever. The superstition that establishes a link between common cold and fever may be explained as follows. Fever has three phases: chilling, fever and flushing. The first phase is characterized by vasoconstriction and increased muscular activity, as a result of chilling and shivering, to enable heat production. This is followed by the fever phase where heat production and loss become balanced, and the set-point is increased. When the set-point is back to normal, the body finds its temperature elevated, and heat dissipating mechanisms start working; the process ends up with vasoconstriction and flushing phase.[19] Shivering and chilling at the beginning of fever is quite similar to changes seen in human body due to exposure to cold. With the prejudgment and prediction that other phases will follow the first one, people tend to keep their body warm. The changes resulting from exposure to cold, for instance being blue, feeling cold and shivering with cold, may cause people to associate these symptoms with the start of fever, which may be infectious just like the common cold.

The hypertonia in muscles in mild hypothermia (inner temperature over 32°C) and the rigidity in muscles in moderate hypothermia (inner temperature between 28-32°C)[20] cause cold-associated symptoms in the musculoskeletal system such as pain, joint freezing, swelling, restriction of movements, paresthesia and muscle weakness.[21] These

are also similar to symptoms such as asthenia and myalgia[22], in which the systematic symptoms are caused by cytokines that emerge when the immunity system cells encounter the virus on the first days of the common cold. Thus, such symptoms may be another reason that leads to the establishment of a link between the common cold and exposure to cold.

Table 2. Answers of the participants to the questionnaire

What does drinking cold water when you are sweaty cause?	**n (%)**
Common cold	53 (36.30)
Sore throat	49 (33.56)
Cough	15 (10.27)
Abdominal pain	8 (5.49)
Others	21 (14.38)
What does sitting or walking on concrete floor cause?	**n (%)**
Common cold	53 (36.30)
Abdominal pain	45 (30.83)
Groin pain	27 (18.49)
Others	21 (14.38)
What does being exposed to draught cause?	**n (%)**
Common cold	59 (40.41)
Muscle pain	45 (30.83)
Headache	16 (10.96)
Others	26 (17.80)
What does sleeping without blanket cause?	**n (%)**
Common cold	67 (45.89)
Muscle pain	26 (17.80)
Abdominal pain	12 (8.22)
Others	41 (28.1)
In which conditions did you get sick before?	**n (%)**
Sitting or walking on concrete floor	41 (28.09)
Being exposed to draught	40 (27.40)
Sleeping without blanket	33 (22.60)
Drinking cold water when sweaty	32 (21.91)
Did you use any drugs for those complaints?	n (%)
No I did not use	41 (28.09)
Analgesic	47 (32.19)
Antibiotic	30 (20.54)
Over the counter drugs for common cold	24 (16.44)
Others	4 (2.74)
Did you use anything complementary?	**n (%)**
No I did not use	25 (17.13)
Herbal tea	87 (59.59)
Keeping warm oneself	20 (13.70)
Excessive fluid intake	6 (4.11)
Massage	5 (3.42)
Cupping	3 (2.05)

Abuse of antibiotics and misuse of antivirals in common cold were in concern of many studies.[3,23,24] Hispanic consumers in the United States are almost twice as likely as consumers overall to believe that taking antibiotics lessens the symptoms of a cold, and almost three times as likely to obtain antibiotics not prescribed by a clinician, such as antibiotics left over from a previous illness.[25] In the study done by Braun et al., 44% of participants believed antibiotics help colds.[8] In another survey, 59.72% patients found antibiotic usage beneficial for sore throat among primary care patients in Turkey.[26] In our study 30 (20.54%) attenders used antibiotic for superstitious beliefs mentioned above, even it is not indicated for common cold for most of common cold cases.

Nearly two third of the participants were female, which is a limitation of this study. Unequal gender distribution can affect the results. This female preponderance can be due to several reasons:

- Women use/apply for health care more than men.
- Women have more spare time and more likely to participate surveys.
- Men are likely to stand aside doctors until they are really in need for severe symptoms.
- Forty-five participants who did not accept to participate, were all males.

In conclusion, the majority of our patients had superstitious beliefs presenting a number of different situations as causes of common cold. The general public has misconceptions regarding indications for antibiotic use. Consumer education needs to emphasize both the limited conditions in which respiratory infections require an antibiotic and the individual and population-level harms of inappropriate antibiotic use. Inappropriate use of antibiotics for non-severe upper respiratory tract infections (URTIs), most of which are viral, significantly adds to the burden of antibiotic resistance.

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