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KNOWLEDGE AND ATTITUDE TOWARD COMMON COLD IN BEIRUT, LEBANON

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KNOWLEDGE AND ATTITUDE TOWARD COMMON COLD IN BEIRUT, LEBANON

Abstract

Background Common cold is a self-limiting condition targeting the upper respiratory tract. Even though it resolves on its own yet it accounts for 40% of absentees from work and a large number of visits to the physician clinic. The most common sign and symptoms include sore throat, coryza, runny nose or congestion, muscle pain, and sometimes cough. Symptomatic treatment of this minor ailment can be either by herbal products or over the counter drugs. Nevertheless, it is always mistaken for Influenza or bacterial infection. The proper knowledge of this condition could prevent mistreatment and would keep the country's resources intact. Accordingly, the aim of the current study is to assess the knowledge and attitude of a sample of the Lebanese population on the common cold. *Method* A cross-sectional descriptive questionnaire-based study was performed in Beirut area. The questionnaire was divided into three parts that included demographic information, as well as knowledge and attitude questions. Results were considered significant when P-value was ≤ 0.05 with a confidence interval of 95%. *Results* Three hundred eighty-five adult Lebanese participants were enrolled in the study. The youngest age group was more knowledgeable on common cold than the elderly. Moreover, Ph.D. holders scored the highest on the knowledge score (6.71/10). Alarming, 14.8% of the tested sample still use antibiotics as soon as their cold symptoms start. Around 88% of the participants believed that the Ministry of Public Health should be involved to ensure the understanding of this condition in Lebanon. *Conclusion* The role of all health care providers as well as their orders and the Ministry of Public Health is to ensure proper education on the common cold by conducting awareness campaigns.

Keywords

Common cold; Knowledge; Attitude; Beirut; Lebanon

1. INTRODUCTION

Common cold is a self-limiting condition targeting the upper respiratory tract (Al Haddad et al., 2016). On average, an adult gets 2-4 colds per year (Leder et al., 2003). It is commonly caused by Human Rhinovirus (HRV) (30-50%). Other viruses include Coronavirus (10-15%), Influenza (5-15%), Parainfluenza and Respiratory Syncytial Virus (5%), and Adenovirus (<5%) (Wat, 2004). The initial deposition of the HRV in the eyes and nose leads to the attachment of the virus to host intercellular adhesion molecule-1 at the back of the throat. Once the virus reaches the nasal epithelial cells, an increase in neutrophils will be detected in the nasal mucosa as well as in the secretions. This will cause the release of inflammatory cascades such as kinins, interleukin-1, interleukin-6, and interleukin-8 which are partly responsible for the symptoms. Their levels are highly correlated with the duration and severity of illness (Wat, 2004). Infected mucosa symptoms peak at 1-3 days, last from 7-10 days, and persist up to 3 weeks. These include sore throat, sneezing, rhinorrhea, rhinitis, and general malaise (Allan & Arroll, 2014). Moreover, 40 % of all patients experience cough (Arroll, 2011). Common cold unlike sinusitis, otitis media, and tonsillitis doesn't have a specific sign and symptom combination that will help in confirming the diagnosis (Worrall, 2011). The incubation period of HRV is 24 to 72 hours however the average duration of illness is up to 1 week (Al Haddad et al., 2016). The virus is transmitted through hand to hand contact or droplet transmission via sneezing or coughing (Ismail & Schellack, 2017). In HRV infected population, it is noticed that the virus is on 40% of the hands and 6% on home's objects (McKay, 2010). This minor ailment has a huge burden on the society as well as the economy because it is the reason behind not only 500 family physician visits per 1000 patients per year but also for 40% of absenteeism from work due to its occurrence all year long unlike Influenza (Deckx et al., 2016). Treatment approaches for this minor ailment include complementary and pharmacological therapies that target the most bothersome symptoms (Allan & Arroll, 2014). The use of vitamin C has been controversial as mixed up evidence regarding its effect on the incidence and duration of the common cold is surfacing (Simasek & Blandino, 2007; Bucher & White, 2016). Ginger is being used for its anti-inflammatory properties to manage sore throat (Bode & Dong, 2011). According to the CHEST guideline 2017, no conclusive data exists regarding the pharmacological and non-pharmacological treatment of cough associated with common cold (Malesker et al., 2017). Inconsistent evidence was observed with garlic, humidifiers, normal saline, and increased fluid intake (Allan & Arroll, 2014). Honey was proven to be superior to diphenhydramine and placebo in reducing the frequency and severity of cough associated with the common cold (Deckx et al., 2016). Moreover, antihistaminic drugs, decongestants, cough suppressants, and expectorants are the most common over the counter drugs used (Simasek & Blandino, 2007). Oral decongestants should be avoided and intranasal decongestants should be used cautiously in patients having diabetes, ischemic heart disease, hypertension, glaucoma, and benign prostatic hyperplasia (Laccourreye et al., 2015). Consequently, patient awareness is needed to prevent maltreatment (Al Haddad et al., 2016). Accordingly and due to the absence of reliable, comparable studies in Lebanon regarding common cold awareness, this work aimed to assess the knowledge and attitude of a sample of the Lebanese population living in Beirut city on this ailment.

2. METHODOLOGY

2.1 Ethics Approval

The Institutional Review Board (IRB) of Beirut Arab University waived the approval of this study since it is an observational one that respects participants' confidentiality and autonomy, with no traceability.

2.2 Method

A cross-sectional face to face descriptive study was conducted by anonymously filling a questionnaire, in May 2019 for Lebanese adults (≥ 18 years old) living in Beirut city. People suffering from mental disorders such as Alzheimer were excluded from the study.

2.3 Sample Size

The sample size was calculated using the online sample size “Raosoft®” calculator assuming Beirut adult population to account for 1,916,100. Accordingly, a total of 385 participants and above provides a representative sample with a 5% margin error and a 95% confidence level.

2.4 Questionnaire and Data Collection

The questionnaire was adapted from a study published in the Journal of Taibah University Medical Sciences by Al Haddad et al. (2016), with some modifications to meet the needs of the current study. It was written in English then translated into Arabic, the native language. It included demographic information such as age, gender, marital status, education, occupation, medical comorbidities, and smoking status as well as 10 questions related to knowledge and 9 related to attitude toward common cold. A 10-points knowledge score was calculated by giving each correct answer one point. The questionnaire was revised for content validity by 3 experts in the field. A pilot testing on 10 individuals was done afterward to check for clarity of the proposed questions whereby certain alterations were made. Questions were formulated as multiple choices or accepting Yes/No/I don't know as answers.

2.5 Statistical Analysis

The results were analyzed using Statistical Package for the Social Science (SPSS®) software version 20 (IBM, New York-USA). Categorical data were expressed as frequencies (percentages) while continuous data as means \pm standard deviation (SD). The ANOVA test was used to compare means (after ensuring normality and variance homogeneity). All results were considered “statistically significant” when the P-value was < 0.05 with a confidence interval (CI) of 95%.

3. RESULTS

A total of 385 participants were enrolled in this study out of which 55% were male, 41.3% were between 25-44 years old, 79% had a bachelor's degree, and 79% worked in a non-medical field profession. The number of cold acquired per year varied among the participants where more than half of the participants (54.3%) reported getting 2-3 colds per year (Table 1). In the current study, 75% had no comorbidities and 12.5 % only had hypertension. Results showed that there wasn't any major drug interaction between the chosen common cold drugs and home medications.

Table 1: General Characteristics of the Respondents

Demographic	Characteristics	Frequency (n)	Percentage (%)
Gender	Male	211	55%
	Female	173	45%
Age	18-24	111	28.8%
	25-44	159	41.3%
	45-64	81	21%
	>65	34	8.8%
Marital status	Single	164	42.6%
	Married	211	54.8%
	Divorced	6	1.6%
	Widow	4	1.0%
Education	Illiterate	14	3.6%
	Less than high school	68	17.7%
	High school	77	20%
	Bachelor's	172	44.7%
	Master's	47	12.2%

	PhD	7	1.8%
Occupation	Medical field	55	14.3%
	Non-medical field	306	79.5%
	Unemployed	24	6.2%
Smoking status	Smoker	193	50.1%
	Non- smoker	182	47.3%
	Ex-smoker	10	2.6%
Number of colds per year	<1	100	26%
	1-3	209	54.3%
	>3	49	12.7%
	I don't remember	2	0.5%
	I don't get the cold	25	6.5%

Concerning the etiology of common cold, 62.1% identify it as viral infection and 15.1% as bacterial. Regarding influenza etiology, 56.8% knew that it is of viral origin and 18.9% supposed that it is of bacterial origin. With respect to the role of antibiotics in common cold, 32.7% believed that it is effective. With regards to the safety of common cold drugs in hypertensive patients, 9.6% mistakenly believed that they are all safe. As for Benign Prostatic Hyperplasia (BPH) and open-angle glaucoma, the highest percentage fell in the "I don't know" category with percentages of 73% and 69.6%, respectively (Table 2).

Table 2: General Public Knowledge about the Common cold and Treatment Approaches

	<i>Virus</i> <i>n(%)</i>	<i>Bacteria</i> <i>n(%)</i>	<i>I don't know</i> <i>n(%)</i>
Cause of the common cold?	239(62.1%)	58(15.1%)	87(22.6%)
Cause of influenza?	105(56.8%)	35(18.9%)	45(11.7%)
	<i>Yes</i> <i>n(%)</i>	<i>No</i> <i>n(%)</i>	<i>I Don't know</i> <i>n(%)</i>
Are cold and flu the same?	148(38.4%)	192(49.9%)	45(11.7%)
Is common cold contagious?	334(86.8%)	41(10.6%)	10(2.6%)
Do antibiotics treat the flu?	121(31.5%)	141(36.7%)	121(31.8%)
Do antibiotics treat the cold?	126(32.7%)	247(64.2%)	12(3.1%)
Does chicken soup treat the cold?	144(37.4%)	182(47.3%)	59(15.3%)
Are all common cold drugs safe in:			
Hypertension	37(9.6%)	159(41.3%)	189(49.1%)
Benign prostatic hyperplasia	35(9.1%)	159(41.3%)	189(49.1%)
Glaucoma	31(3.1%)	86(22.3%)	189(49.1%)

The mean knowledge score of the participants was 4.56 ± 2.06 over 10. Youngest age group (18-24 years) had higher score than elderly group aged (65years and above) (Table 3). All bachelor or postgraduate degree holders had a significantly higher mean knowledge score than those having a high school degree or less, or illiterate people (Table 4).

Table 3: Influence of age on common cold knowledge

Age Category	Mean Score	Standard Deviation(SD)	P-value
18-24	5	2.08	0.005
25-44	4.55	2.00	0.113
45-64	4.33	2.15	0.596
>65	3.64	1.68	-

Age >65 was considered as a reference

Table 4: Influence of Level of Education on Common cold knowledge

Education	Mean	Standard Deviation	P-value
Illiterate	3.57	1.78	0.012
Less than high school	3.88	2.06	0.006
High school	4.35	1.83	0.046
Bachelor's	4.87	2.01	0.274
Master's	4.65	2.25	0.18
PhD	6.71	2.21	-

PhD holders were considered as a reference

Fifty-nine percent don't seek help from anyone when they have the common cold symptoms, 14.3% refer to a physician and 26.2% to a pharmacist. Out of the people who don't seek medical help 33% and 38.4% do re-see if they have fever or symptoms increased, respectively.

Seventy-five percent indicated that a medical team specialist (pharmacist or physician) is their primary resource for medical inquires. For being easily accessible, the internet was being used by 23.6% of the participants. Some still consider their family or friends (16.4%) as a resource even though they do not have any medical background.

Concerning supplementation during the disease phase, vitamin C (57.4%) and ginger (31.7%) were most commonly used. The most prevalent non-pharmacological measures taken by the sample when catching the cold were increasing fluid intake (63.4%), bed rest and prolonging sleeping hours (33%), and normal nasal saline use (22.9%). The least used non-pharmacological measures were hand washing (19.7%) and disinfecting personal objects (6.8%).

According to the tested sample, the first most commonly used drug in case of common cold is paracetamol (71.4%). The second one is oral decongestant (47%), and the third is oral antihistamine (26.2%). Until today, antibiotics are still being used by 14.8% of the participants (Figure 1).

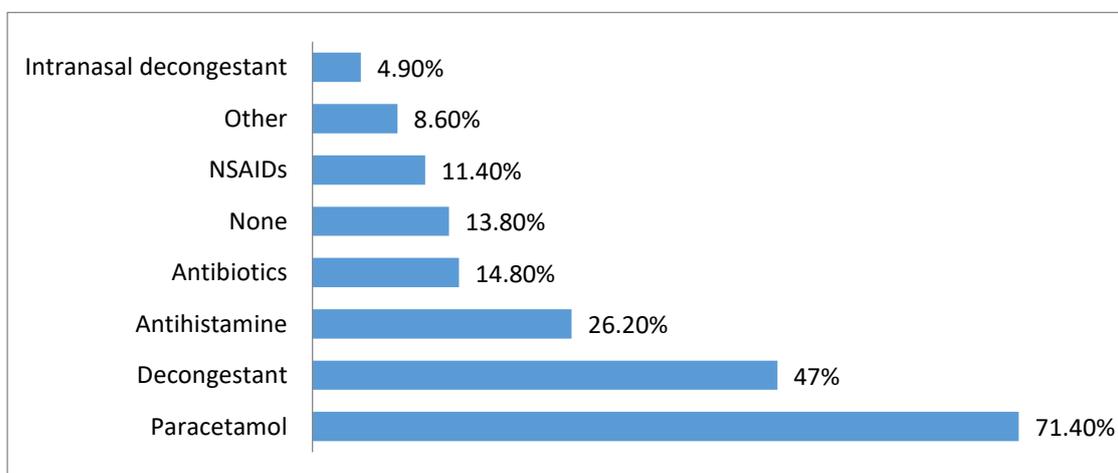


Fig.1: Commonly used medications for common cold

Regarding the awareness role of the Lebanese Ministry of Public Health (MOPH), 87.8% (338) believed that common cold campaign on knowledge, treatment and prevention should be implemented.

4. DISCUSSION

Public knowledge of common cold plays a crucial role as incorrect information may lead to maltreatment and thus harming the country's resources and impacting the population's quality of life (Al Haddad et al., 2016). Almost half of the tested population (49%) didn't know that some OTC common cold drugs are not safe in hypertension. In fact, according to Rhodes 2002, several common cold drugs interact with antihypertensive therapies. Non-steroidal anti-inflammatory drugs used to reduce sore throat interact with beta-blockers along with loop and thiazide diuretics by decreasing their efficacy. For hypertension as a disease, decongestants, being the mainstay of common cold, cause blood pressure elevation (Rhoades, 2007). Moreover, almost three-quarters of the tested population didn't know that anticholinergic drugs, first-generation antihistamine, and decongestants exacerbate urinary symptoms and are not safe in BPH patients as proven by Garnett et al. (2001). According to Thapa et al, anticholinergics and antihistamines were reported to induce or precipitate angle-closure glaucoma yet 69.6% of the participants in this study did not know that (Thapa, 2018).

These results were reflected by the knowledge score. There was a reverse relationship between mean knowledge score and age groups. This may be interpreted by the fact that young people easily access internet resources through smartphones and laptops to retrieve medical information. According to Liebermann 2017, technology allows people to learn more quickly (Lieberman, 2017). Concerning education, doctoral (Ph.D.) holders knew better than all other education groups as they recorded the highest average knowledge score. A study done by Ahmad et al. 2017, concluded that a general increase in literacy rate provides better awareness and knowledge on certain conditions (Ahmad et al., 2017).

According to Taber et al. (2015), patients refuse to seek medical care often because they expect that their condition will improve with time, don't have enough money, time or are not covered by insurance. For these reasons in this study, 26% seek pharmacists' advice once they catch a cold since the pharmacist is easily accessible and his consultation is free of charge. The pharmacist ensures medication appropriateness, efficacy, and safety according to each patient. Also, pharmacists educate patients on their condition by stressing on certain non-pharmacological and preventative measures needed to be followed (Dalton & Byrne, 2017). On the other hand, similarly to other studies patients seek medical guidance only if the condition worsens leading to absenteeism from work or school. Consequently, health economic burden is increased (Nair et al., 2011).

Non-traditional therapies are proven to play a huge role in preventing transmission and shortening the disease phase as well as resolving signs and symptoms. Even though the role of vitamin C in literature is controversial yet in this study 57.4% use it when getting a cold (Rondanelli et al., 2018). According to Bode et al. (2011) ginger has an anti-inflammatory property that ameliorates sore throat symptoms. In the current study, 63% believe that increasing fluid intake will help manage some common cold symptoms yet the evidence of these interventions was inconsistent (4). Hand washing is used only by 19.7% of the participants, which according to Allen reduces getting and spreading upper respiratory tract infection (Allan & Arroll, 2014). In fact, adopting physical barrier measures limited the widespread of the "Spanish Flu" pandemic. Accordingly, simple and low-cost interventions could minimize the proliferation of this virus (Jefferson et al., 2011).

According to the common cold American Family Physician guideline, analgesics, decongestant, and combination therapy of decongestant and first-generation antihistamine are the mainstay of treatment of this minor ailment (Fashner et al., 2012). In the current study, the drug that attained the highest percentage of use during the illness period was the simple analgesic and antipyretic drug; paracetamol. Moreover, the use of oral decongestant is also adequate. However, the use of antibiotics is still present (14.8%). A cross-sectional study by Mehieddine et al. (2015), revealed that 73.5% of the tested Lebanese population use antibiotics to treat the common cold (Mouhieddine et al., 2015). Thus, antibiotics misuse shown in 2015 is still somehow present as proven by the current study.

The Lebanese MoPH plays a huge role every year to provide awareness on different topics such as cleft lip, breast cancer, tuberculosis, mental health, and many more, yet none on common cold (MOPH). Accordingly, from this sample, 87.8% believed that the MoPH should play an essential role in providing awareness on the prevention and treatment of the common cold.

5. CONCLUSION

Although, the enrolled population showed a fair knowledge on common cold, emphasizing the role of health care bodies such as pharmacists, physicians, and MOPH would bring out a better outcome. Since common cold is a minor ailment and self-manageable, physicians as disease detectors and pharmacists as drug therapy experts must act as educators by explaining the condition, signs, and symptoms, treatment, and prevention methods of the common cold to the patient. MoPH should conduct an awareness campaign targeting the illiterate and older population. These campaigns should explain the etiology of common cold to decrease antibiotics resistance along with treatment and prevention options. Finally, both MoPH and health team experts should shed light on the importance of seeking medical advice only from a specialist and neither from the internet nor from family or friends.

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