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Review Article

RESEARCH ON SELF-MEDICATION: A HYPE OR A HOPE? A LITERATURE REVIEW

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ABSTRACT

Medications are one of the most important tools in public health practice. Since the 1980s, self-medication (SM) is of prime public health importance as the World Health Organization, to reduce the burden on health-care professionals changed some prescription drugs to be sold over the counter. Each drug has its own advantages and disadvantages. Hence, always they have to be taken with caution. Considering this, a recent trend has increased in surveying the prevalence of SM. Hence, this review critically evaluated the studies to put light on the basic concept of SM.

Key words: Self-medication, Drug abuse, Self-care, Substance abuse, Antibiotic usage.

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INTRODUCTION

There are many terms used synonymously in the field of medicines such as self-medication (SM), drug abuse, substance abuse, drug overuse, and prescription drug abuse. SM is a human behavior, in which an individual uses a substance or any exogenous influence to self-administer treatment for physical or psychological ailments [1]. In general, it is a term used for common form of self-care and consists of consuming a product on one's own initiative in an attempt to relieve perceived symptoms or diseases. It is also defined as the "use of medication without prescription, medical guidance or follow-up" in simpler terms [2].

Drug abuse is a patterned use of a drug, in which the user consumes the substance in amounts or with methods which are harmful to themselves or others [3]. Prescription drug abuse is the use of a medication without a prescription, in a way other than as prescribed, or for the experience or feelings elicited [4]. Drug misuse is a term used commonly when prescription medication with sedative, anxiolytic, analgesic, or stimulant properties are used for mood alteration or intoxication ignoring the fact that overdose of such medicines has serious adverse effects [4]. Philip Jenkins claims that there are two issues with the term "drug abuse." First, what constitutes a "drug" is debatable. For instance, GHB (γ-hydroxybutyric acid), a naturally occurring substance in the central nervous system (CNS) is considered a drug and is illegal in many countries, whereas nicotine is not officially considered a drug in most countries. Second, the word "abuse" implies a recognized standard of use for any substance. Drinking an occasional glass of wine is considered acceptable in most Western countries, whereas drinking several bottles is seen as an abuse [4].

All this states that SM is on a positive side compared to drug abuse/misuse/overuse. The most widely SM substances are over-the-counter drugs used to treat common health issues at home, as well as dietary supplements [3]. These do not require a doctor's prescription to obtain and, in some countries, are available in supermarkets and convenience stores [3]. If psychoactive drugs are used for SM instead of over-the-counter drugs, it can cause a serious detriment to physical and mental health if associated by addictive mechanisms [3].

Peeping in the past

SM is often seen as gaining personal independence from established medicine [5], and it was seen as a human right, implicit in, or closely related to the right to refuse professional medical treatment [6]. As different drugs have different effects, they may be used for different reasons. To explain this, a hypothesis was formulated and called as SM hypothesis (SMH) and originated in papers by Edward Khantzian, Mack and Schatzberg, Duncan, and response to Khantzian by Duncan [4].

SMH

It states that the individuals' choice of a particular drug is not accidental or coincidental, but instead, a result of the individuals' psychological condition, as the drug of choice provides relief to the user specific to his or her condition, specifically the drug which causes addiction [7]. This initially focused on heroin use, but a follow-up paper added cocaine [8]. The SMH was later expanded to include alcohol [9], and finally all drugs of addiction [6,10].

Khantzian revisited the SMH, suggesting there is more evidence that psychiatric symptoms, rather than personality styles, lie at the heart of drug use disorders [6]. Khantzian specified that the two crucial aspects of the SMH were that drugs of abuse produce relief from psychological suffering and the individual's preference for a particular drug is based on its psychopharmacological properties [6].

Every drug has advantages as well as disadvantages. Hence, specific conditions such as mental illness, depression, and anxiety and post-traumatic stress disorder for which if people tend to SM are considered as threat [4].

Drugs that come under threat for SM [4] are:

- CNS depressants
- Psychostimulants
- Opiates
- Cannabis
- Drugs used for infectious disease, i.e. antibiotics.

Although literature emphasizes on inappropriate SM causing undesirable consequences and effects, iatrogenic diseases, and mask progressive diseases, a proper search clearly states the prevalence of such consequences are more common with improper use of psychoactive drugs/antibiotics (overuse or abuse) which causes resistance for the bacterial straits [11].

Several studies and reviews on SM practices have been published in different regions of the world in the past decade, each stressing on the high prevalence of SM among different sections of people such as medical, dental, nursing, pharmacy, and university students [12-31]. A few studies also assessed among the general public and pharmacy vendors [29].

Question unanswered

Many studies have inbuilt lacunae in study design, sampling method, or in sample size. (Table 1) Apart from that, most studies varied in recording the history of past SM. If surveyed, many people would have taken at least one tablet/drug without prescription in their

Table 1: List of few researches on SM since 2006-2016

Serial number	Author, place, year	Subject	Samples	History of SM	Drugs used/To relieve	Prevalence of SM (%)	Conclusion
1	Henry *et al.* Bahrain, 2006. [12]	Medical	153	-	Analgesics	44.8	Attitude toward self-medication was positive and practice was common
2	Syed *et al.* Karachi. 2008. [13]	University students	572	-	Headache (72.4%), flu (65.5%), and fever used analgesics, antipyretic, and antibiotic	76	Awareness that SM is harmful was 82%
3	Barros *et al.* Brazil. 2009. [14]	Nursing	1509	7 days	Analgesics, vitamins, antacids, anti-inflammatory/ antibiotics	24.2	Self-medication was more prevalent among young and those who reported a disease or injury in the last 15 days
4	Pandya *et al.* Ahmedabad, 2010. [15]	Medical students	747	1 year	Fever, body ache, and head ache (OTC)	82	The practice of SM is highly prevalent in medical students with majority restricting the use to treatment of minor ailments with over the counter drugs
5	Abay Ethiopia. 2010. [16]	Medical, pharmacy and health science students	213	-	Paracetamol and NSAIDs	38.5	Prior experience and the non-seriousness of the illness were the top two reported factors for SM
6	Pankaj, Mumbai. 2011. [17]	Urban slum	760	15 days	Trivial ailments like fever, aches, allergies, cough, and diarrhea	55.9	The need for urgent educational measures for general public and pharmacists, in particular, to improve their knowledge and practices related to SM of minor ailments
7	Marilia, Brazil. 2012. [18]	University students	789	-	Paracetamol, analgesics	86.4 8.8 illicit drug use	Medication knowledge might contribute to increase self-medication
8	Banerjee and Bhadury West Bengal 2012. [19]	Medical students	468	1 month	Antibiotics, analgesics	57.5	Antibiotics being the most commonly used drug group and cough and common cold being the predominant morbidity.
9	Kumar *et al.* South India, 2013. [20]	Medical students	440	-	Antipyretics	78.6	To prevent the growing trend of SM, strong policies should be applied prohibiting the supply of medicines without a valid prescription
10	Kasulkar and Gupta Nagpur. 2013. [21]	Medical students	488	1 year	Antipyretics and analgesics	71.7	26.3% adverse reactions.Majority students agreed that medical knowledge is necessary for administration of medicine by self
11	Auta *et al.* Nigeria. 2013. [22]	Medicine vendors	236	-	Analgesics, anti malarials, multivitamins, and antibiotics	75.4	32.6 had inadequate knowledge
12	Raut, *et al.* Visakaphatnam. 2014. [23]	Nursing students	35	-	To relieve the symptoms of headache (31.43%), fever (31.43%), cough and cold (22.83%)	40	The most common indications for SM were to relieve the symptoms of trivial ailments. Analgesics were the most common drugs used for SM
13	Bing *et al.* China. 2014. [24]	University students	731	6 months	Antibiotics	40.2	During self-medication, 16.7% of students claimed to have experienced adverse reactions
14	Salami and Adesanwo, Nigeria. 2015. [25]	Mothers of under five	226	-	-	81.2	Use previously prescribed drugs when similar symptom reappears, and use old prescription to get new drugs
15	Syed *et al.* Bastar. 2015. [26]	Nursing students	140	-	Common cold, headache, and fever	84.5	No adverse drug reaction was reported by nursing students during self-medication
16	Tatyana [27]	Teachers	1200	3 months	Non-prescription antibiotic use ranged from 48% to 78%	81	The availability of non-prescription antibiotics leads to inappropriate SM in the communities
17	Luca *et al.* Italy. 2015. [28]	Parents	672	1 year	NSAIDs	69.2	SM was high
18	Simon *et al.* Coastal Karnataka 2015. [29]	Dental Patients	400	6 months	Analgesic, traditional drugs, and antibiotics	30	Male gender and the recent dental visit was found to be less likely associated with self-medication
19	Syed- Sy review [30]	Adolescents	160 pub	-	-	6-80	SM was high among adolescents
20	Zhu *et al.* China. 2016. [31]	University students	660	Lifetime	Antibiotics	47.9	Older age and PKA are independent SMA risk factors

SM: Self-medication, NSAIDs: Non-steroidal anti-inflammatory drugs

lifetime (as few studies mentioned Vicks, Zandu balm, ORS, Dettol, Boroplus, Dabur Chavanprash, etc., in the drugs commonly used for SM list) [26,32], and this practice is still more common among health professionals. Can we consider it to increase the prevalence rate of SM? There is nowhere clarity or clear mentioning either regarding the number of tablets/drugs used and how frequently they use when they say SM. The prevalence of the people with SM is merely calculated by the number of people saying yes for the question have you ever SM or taken a drug without prescription [14,15,28]. Hardly, in few studies, the question was asked regarding any adverse reactions due to SM and mentioned no such reports by the participants [26], and it was correlated only in studies which were particularly on SM about antibiotics [24,27]. Is this the situation alarming which was Stated by the SM studies available?

Many authors do state in their studies the most common conditions and common drugs used for SM, and many also mention that the drugs used are for trivial ailments [14-18] (Table 1). The WHO has also recognized the validity of SM in a variety of settings, and in 1995, the WHO Expert Committee on National Drug policies stated: "SM is widely practiced in both developed and developing countries. Medications may be approved as being safe for SM by the national drug regulatory authority. Such medicines are normally used for the prevention or treatment of minor ailments or symptoms, which do not justify medical consultation. In some chronic or recurring illnesses, after initial diagnosis and prescription, SM is possible with the doctor retaining an advisory role." [14]

Many reviewed studies have stated people using the accepted medicines by the WHO for minor ailments as SM and highlighted if they have used the old prescription for the same symptoms again as a reason for SM and instructed to ban or take regulatory steps in conclusion (Table 1). A few systemic reviews also restricted to particular age group and their criteria were to assess the factors associated with SM [30].

Are the authors hyping the prevalence of SM without understanding the mere concept?

Inappropriate SM results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering, and drug dependence. On the other hand, if done appropriately, SM can readily relieve acute medical problems, can save the time spent in waiting to see a doctor may be economical and can even save lives in acute conditions. It is now accepted that self-care in the form of responsible SM can be beneficial for patients, health-care providers, the pharmaceutical industry, and governments. The real threat is with the improper way of using antibiotics which is clearly stated in few articles as SM with antibiotics [24,27,33].

Self-reported questionnaires have been employed in all the studies to determine drug usage. However, the accuracy of the information obtained by such questionnaires is limited by recall bias. A substantial amount of inaccurate data could result in "misclassification bias," leading to incorrect estimates of disease risk and/or prevalence [34]. However, it is recognized and mentioned that SM must be accompanied by appropriate health information [34]. The majority of the studies though with weak designs ended up suggesting educating people regarding SM and its adverse nature, but it does not substantiate that showcasing the prevalence has to be hyped.

CONCLUSION

SM is an area of concern for public and interest for the researcher. As growing interest in the field of SM is increased, proper-guided data are needed for the aspirants to plan for research or else researchers just hype the prevalence of SM by their weak studies. With the concern about SM adverse effects, a responsible SM can be advocated which is nothing but providing an appropriate guidance in using the medications for trivial causes.

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