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MEDICATION AND SELF DETERIORATION: SELF-MEDICATION AND ITS IMPACTS ON UNIVERSITY STUDENTS

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ABSTRACT

This study investigates into various medicines, which are commonly used without consulting medical experts and their physiological and psychological complications on the users. In a cross-sectional study; the researchers selected four (04) universities of Khyber Pakhtunkhwa Pakistan through convenience sampling using survey through questionnaire from the students of social sciences. Descriptive approach is adapted with the help of SPSS for analysis in the form of percentage while the chi-square along-with correlation is applied for testing the assumptions. The study explores that a number of drugs are constantly used without prescription that adversely affect the users' physiology and psychology. In order to overcome its adverse effects; proper health education and mass media can play a pivotal role.

Keywords: Self medication, Drugs, students, Physiological impacts, Psychological impacts

INTRODUCTION

Diseases are found in every society, it is a harmful deviation from the normal structural or functional state of an organism (Naz *et al.*, 2011). A diseased organism commonly exhibits signs or symptoms indicative of its abnormal state (WHO, 1998). Thus, the normal condition of an organism must be understood in order to recognize the hallmarks of disease (Bradley and

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Blenkinsopp, 1996). Human beings are subject to many complications including numerous diseases and for their treatment man need medicines (WHO, 2000; Chang and Trivedi, 2003; Pagane *et al.*, 2007) where the medicines are compulsorily used for social, biological and psychological reasons (Shakoor *et al.,* 1998). This condition of self prescription is referred to self medication where different types of drugs are used by individuals without prescription of the medical expert or doctor (Martins *et al*, 2002; Habeed and Gearhart, 1993; Bimsa, 2002-2003).

Researches explore that a high number of people use medicines without prescription, which produces a variety of physiological and psychological impacts upon the users (Monastruc *et al.,* 1997; Hughes *et al.,* 2001; Shankar *et al.,* 2002). Self-medication and non-doctor prescribing of drugs is common in developing countries; complementary and alternative self-medications, especially, pain killer, sleeping pills, antibiotics, eye drops and hormone tablets are also commonly used which produce a variety of side effects among the users (Shankar *et al.,* 2002; Davis, 2003; Hector, 2005). The fact is evident that nations having low rate of education and poor economic well being are among the victimized areas of self-medication-stricken where most incidents of illnesses are treated by self-medication (Dineshkumar *et al.,* 1995; Shankar *et al.,* 2002) because the high cost of modern medicines and non-availability of doctors necessitates the masses to medicate themselves (Segall, 1990; Figueiras *et al.,* 2002). In this connection, to quote Simons *et al.,* (1992), such practice brings about serious health risks including immunity, drug dependence, digestive bleeding, hypersensitivity reactions, as well as increase the risk of *Neoplasia* (Blenkinsopp and Bradley, 1996; Martins, *et al.,* 2002; Hallas *et al.,* 1991; Aljinovic-Vucic *et al.,* 2001).

The indiscriminate use of medicines can also increase the chances of intoxication in human. The research in different courtiers makes it obvious that 26% of intoxication recorded where 590 cases were a result of self-medication (Johnson, 1991; Clavinjo, 1995). Further, the prevalence of self-medication in developing countries ranges from 12.7% to 95% while the estimates vary in the South-Asia region (WHO, 1998; Lau *et al.,* 1995). Self-medication as a common practice to treat illness is explained by the reduced demand for doctor consultations and subsequent costs for treating perceived self-limiting conditions (Conn, 1992; Hussain and Khanum, 2008; Zafar *et al.,* 2008). Cross-cultural research studies predominantly reveal the estimation about self medication in different regions including both the developed and developing countries i.e. Nepal estimates self medication as 59% while in India it was 31% with a wide variation (WHO, 2000; Shankar *et al.,* 2002). In the coastal regions of South India, the prevalence was 71% and in Pakistan, self-medication prevalence was around 51% (Dineshkuma *et al.,* 1995; Zafar *et al.,* 2008; Verma *et al.,* 2010). Besides, a study in Bangladesh revealed that for three most frequently reported illnesses, 81.3% of the young and 78.5% elderly health care seekers are self-medicated (WHO, 2000). In the same connection, American Pharmaceutical Association estimated that, of the 3.5 billion health problems treated in the USA annually, 57% were treated with a non-prescription drug, which further creates many health complications for the general masses of community (Sawalha, 2008;

Ghosh *et al.,* 2010). Additionally, feeling unwell and suffering from non-chronic ailments is a very common experience: Indians, South Africans and Pakistan get the same ailments, in roughly the same frequency, as do the Japanese and Mexicans (Hussain and Khanum, 2008). About 25% visit a doctor or use a prescription medicine previously obtained for the same condition and remaining 25% turn to over-the counter (OTC) medicines that are associated with adverse health reactions or fatalities (Blenkinsopp and Bradley, 1996; WHO, 1998). The above factual discussion leads to an argument that self medication is emerging in the form of social menace, which is rarely reported and slightly discussed in researches.

THE STUDY RATIONALE

Self-medication is the use of non-prescriptive medicines by people through their own initiative (Ali *et al.,* 2010), which are the major emphasis and the point of discussion in this research study focusing on its impacts. Historically the self medication and self care are evident phenomena that are in practice since the time immemorial that most of the cultures have witnessed the evidences of sick people doing whatever would seem appropriate to them (Abahussain *et al.,* 2005; Klemenc-Ketis *et al.,* 2010; Tse *et al.,* 1989; Hayran *et al.,* 2000). Of course, sick people everywhere have always sought aid from others, but quite as often people who feel ill want to do something for themselves to take something or to apply something in order to feel better (Albarran and Zapata, 2008; Westerlund *et al.,* 2008). In order to heal; individual use different drugs or medicines without consulting medical experts that sometimes leads to taking the inappropriate substance resulting in adverse effects; in some instances cause vomiting, purgation, or even sweating or dieresis (Bouchner, 2000; 2004; Calabresi and Cupini, 2005). The most commonly available medications, which most of the people use are pain-killers, cough and cold remedies, anti-allergic medicines, vitamins, sedatives, sleeping pills, anti-depressants, antibiotics, skin bleach cream, eye drops, diet tablets, sex stimulation, heart burn tablets etc (Neafsey and Shellman, 2001; Gehi *et al.,* 2007).

The most damaging health physiological hazards of self medication among the students are stomachs problems, skin diseases, headache, decongestants, diarrhea, sore throat, cough, insomnia. Besides, major problems related to self medication is wastage of resources, increased resistance of Pathogens, and generally entails serious health hazards such as adverse reaction and prolonged suffering (Buke *et al.,* 2005; Neafsey *et al.,* 2007). Unfortunately, especially in developing countries, professional health care is relatively expensive and in some cases not readily available therapy making self medication an obvious choice of healthcare service (Neafsey *et al.,* 2009). The psychological perspective of self medication refers to the psychoactive drugs, alcohol, and other self-soothing forms of behavior to alleviate symptoms of mental distress, stress and anxiety, traumatic disorders that are primarily motivated by addictive mechanism of such drugs (Buke *et al.,* 2005; Zafar *et al.,* 2008). Consequently, the present study focuses on multidimensional and

longitudinal impacts of self medication on the users' physiology and psychology. The study refers to the fact that such habit is high among the educated segment in the community that primarily includes the students. Further, the students have some awareness about the nomenclature and use of different drugs which they keep with them and then utilize in situation similar to the previous where they were prescribed or healed by a particular medicine that is then habitually used in future.

Objectives of the Study

- To investigate the drugs used by students in university with respect to self medication
- To know about the various physiological impacts of self medication on university students
- To pinpoint the psychological consequences of self medication on the users

Research Assumption

- Self-medication as a hazardous aspect of health and well being has adverse consequences in terms of physiology and psychology of the users

METHODOLOGICAL PROCEDURE AND THEORETICAL FRAMEWORK

Self-medication is the treatment of common health problems with medicines especially designed and labeled for use without medical supervision. The study aims to determine self medication and their physiological and psychological impacts among the university students. A cross sectional study was designed and a convenience sample of 100 students was selected from University of Malakand, Shaheed Benazir Bhutto University, University of Swat and Abdul Wali Khan University Mardan. The students having at least two doses a day having enrolment in the departments of Sociology, Social Work and Psychology were selected as samples. A self-developed, pre-validated questionnaire consisting of both open and closed-ended questions was used to collect data on self-medication, type of medicines used, and its physiological and psychological impacts. A pure descriptive method is utilized while the data management and analysis was conducted through SPSS. The results drawn after analysis and hypothesis have further been tested through Chi-Square test, gamma, lambda and correlation technique.

The current study has been framed under the umbrella of Self-Medication Theory of Addiction presented by Khantzian. Khantzian, (1975) is the founder of the self-medication theory of addiction. His early theories in the 1970s and 1980s challenged the prevailing notions that addicts were weak-willed, and thus doomed to forever capitulate to hedonistic desires (Duncan, 1974a; Khantzian, 1986; Abraham and Fava, 1999). For decades, he has been moved to look at the psychological and physiological suffering of addicts and self-medication (Duncan, 1974; Khantzian, 1977). One of his earliest theories looked at the relationship between an individual's emotional, psychological and physiological suffering and his choice of drugs (Anhalt and Klein, 1976; Khantzian, 1999). He concluded that most addicts do not get a good emotional education

(Duncan, 1975; Khantzian, 1985) and when a minor disease occurs they use drugs without prescription, which creates health problems (Deykin *et al.*, 1987; Khantzian, 1989).

Random experimentation quickly loses its appeal as soon as the addict discovers that something works, that a specific mind-altering substance changes this feeling of passive suffering (Khantzian, 1990). The drug of choice quiets, dulls, deadens, silences, or conversely enlivens, animates, excites one's chaotic emotional storm that finally leads to a solution to his pain (Duncan, 1982). In order to support Khantzain *et al.*, (1991) explicate that addicts self-medicate because they are unable to self-care where Bigelow *et al.*, (1998) reflect that self care functions through the process of internalization. Self-care ego functions serve to warn, guide, and protect individuals from hazardous or dangerous involvements and behaviors, including self medication, drug addiction and alcoholism, unhealthy and violent relationships, impulsive choices, and destructive situations (Khantzian, 1991), which is understood and explained from the point of view of psychological suffering (Goldsmith, 1993). They have drawn on psychoanalytic theory; examined vulnerability, dependency, attachment, and self-soothing capacities; and have also looked at self-disturbances and emotional dys-regulation (Khantzian, 1997a and 1997b). They all suggest, and in different ways, that people self-medicate with drugs and alcohol because they are unable to self-care (Khantzian, 1999). In the nutshell, the theoretical approaches mentioned above focus the physiological and psychological consequences of self medication that well-justifies the position of researchers to adapt such perspective as a theoretical framework.

RESULTS AND DISCUSSIONS

The collected data is quantitatively analyzed and presented in the form of percentage where the response of respondents is recorded on two point scale category i.e. to lower extent (TLE) and to greater extent (TGE). In addition, statistical analyses such as chi-square test, gamma, lambda and correlation techniques are utilized in order to judge the relationship between independent and dependent variables.

COMMON DRUGS USES

The data analysis indicates that people in all parts of the world encounter the same common health problems in roughly the same frequency. Self-medication produces a variety of health hazards among the users and students in particular. The data explicates that people in their daily life face complications in the form of diseases and for their treatment, use medicine without expert's prescription, which adversely affect their health. The most common drugs which are used by the people includes; pain killers, sedatives, sleeping pills, anti-depressant, anti-inflammation and antibiotics, which further creates common colds, headaches, problems in digestion. The quantitative discussion reflects that self medication is commonly practiced by university students.

Even though sometimes it has positive impacts as it reduces the burden on health industry but on another side of the coin it produces various side-effects in the form of stomach problems and diarrhea. The drugs like, skin bleach cream, eye drops, diet table, sex stimulants, hormone tablets and heart burn tablet are used at a regular intervals without consulting medical specialists, which further creates health complications among the users (see Table 1).

Table 1: common drug use

Common Drugs use	**Self Medication**		**N=100**
	To Lower Extent	**To Greater Extent**	**Total**
Pain Killer	15%	85%	100%
Sedatives	20%	80%	100%
Sleeping Pills	08%	92%	100%
Anti-Depressant	14%	86%	100%
Anti-Inflammation	19%	81%	100%
Antibiotic	10%	90%	100%
Skin Bleach Cream	11%	89%	100%
Eye Drop	12%	88%	100%
Diet Tablet	15%	85%	100%
Six Stimulant	09%	91%	100%
Hormone Tablet	18%	82%	100%
Heart Burn Tablet	14%	86%	100%
Chi-square = 5.324	Significance = 0.000**	Lambda = 0.35	Gamma = 0.030

(P=.000** < .05 there is highly significance relationship between self medication and diseases, ($\chi 2 = 5.324$, d. f=7)

The results of chi-square for the proposed hypothesis (as mentioned in above), the numerical value of P = .000** < .05, which shows a highly significant relationship between self medication and diseases where the value of $\chi 2 = 5.324$, d. f = 7. Further, the numerical analysis of Lambda and Gamma proves the proposed hypothesis as valid at the confidence interval of $\alpha = .05$. Besides, the correlation results further indicate a strong correlation between the given variables which is highly significant at the 0.05 level (2-tailed), r (100) = 0.985**; p < .01. $r^2 = 0.97$, since 97% of the variance is shared; the association is obviously a strong one, which further validates the given hypothesis.

PHYSIOLOGICAL IMPACTS OF SELF MEDICATION

Self medication is the outcome of lower literacy and strong hold of cultural beliefs that adversely affect the physiological well being of the users because of the commonly practiced myths such as "take a pill for every ill". The analysis further strengthens the argument that self-care orientation and medication knowledge among respondents create a variety of physiological consequences among the users. Self-medication and conservative practices cause stomach and skin problems, further it produce headache, decongestant, diarrhea, sore throat and menstrual pain. In addition, the

primary information further reflect that self-medication has close connection with health hazards as it creates fatigue, toothache, cough, insomnia, dizziness and other diseases (see Table-2).

Table 2: Correlation

		Diseases	Self Medication
Diseases	Pearson Correlation	1	0.985**
	Sig. (2-tailed)		.000
	N	100	100
Self Medication	Pearson Correlation	.985**	1
	Sig. (2-tailed)	.000	
	N	100	100

(**Correlation is highly significant at the 0.05 level (2-tailed), r (100) =0.985**; p<.01. r^2=0.97) (Since 97% of the variance is shared, the association is obviously a strong one)

Table 3: Self medication

Physiological Impacts	**Self Medication**		**N=100**
	To Lower Extent	**To Greater Extent**	**Total**
Stomach Problem	18%	82%	100%
Skin Problem	15%	85%	100%
Headache	10%	90%	100%
Decongestants	16%	84%	100%
Diarrhea	15%	85%	100%
Sore Throat	08%	92%	100%
Menstrual Pain	12%	88%	100%
Fatigue	16%	84%	100%
Toothache	15%	85%	100%
Cough	10%	90%	100%
Insomnia	14%	86%	100%
Dizziness	12%	88%	100%
Chi-square = 5.786	Significance = 0.000**	Lambda = 0.24	Gamma = 0.020

(P =.000**< .05 there is highly significance relationship between self medication and physiological impacts, ($\chi 2$ = 5.786, d. f=07)

With the tabular information, the results of the Chi-Square test reveal that the relationship between self-medication and physiological problems is evident. The data is tested on the value of P =.000 ** < .05, which shows a highly significant relationship between self medication and physiological impacts where the value of $\chi 2$ = 5.786, d. f = 7 and the level of confidence of α = .05. Furthermore, the correlation validates the results as highly significant at 0.05 level (2-tailed), r (100) = 0.945; p<.01. r^2 = 0.89, since 89% of the variance is shared, thus the association is obviously a strong one.

Table 4: Correlation

		Physiological Impacts	Self Medication
Physiological Impacts	Pearson Correlation	1	0.945**
	Sig. (2-tailed)		.000
	N	100	100
Self Medication	Pearson Correlation	.945**	1

	Sig. (2-tailed)	.000	
	N	100	100

(**Correlation is highly significant at the 0.05 level (2-tailed), r (100) =0.945**; p<.01. r^2=0.89) (Since 89% of the variance is shared, the association is obviously a strong one)

PSYCHOLOGICAL IMPACTS OF SELF MEDICATION

Human psychology is more prone towards effects in terms of medicinal uses. Most of the medicines have direct relation with human's psychological well being that predominantly affects the mental processes. The collected data demonstrates that the individual 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, drugs and self medication affect and treat distressful psychological states, whereby individuals choose the drug that will most appropriately manage their specific type of psychiatric distress. In this context the data reveals the psychological impacts of self medication among the university students such as trauma, stress, phobia, delusions and hallucination which directly affect the health of the users. The quantitative discussion further elaborates that drug dependent individuals generally experience more psychiatric distress than non-drug dependent individuals.

Table 5: Self medication

Psychological Impacts	**Self Medication**		**N=100**
	To Lower Extent	**To Greater Extent**	**Total**
Trauma	18%	82%	100%
Stress and Strain	15%	85%	100%
Phobia	10%	90%	100%
Paranoia	16%	84%	100%
Delusions	15%	85%	100%
Hallucination	08%	92%	100%
Anxiety	12%	88%	100%
Tension	16%	84%	100%
Depression	15%	85%	100%
Rage and Aggressiveness	10%	90%	100%
Chi-square = 3.521	Significance = 0.000**	Lambda = 0.20	Gamma = 0.011

(P = .000**< .05 there is highly significance relationship between self medication and psychological impacts, ($\chi 2$ = 3.521, d. f=07)

The data illustrate that self medication produces the symptoms of anxiety, depression, tension and aggression on users and worsens the health complications (see Table 5). In order to test the experiential information discussed above in the light of chi-square test the value of P = .000** < .05, which reflects that the relation between self medication and psychological impacts is highly significant at the value of $\chi 2$ = 3.521, d. f= 7) along-with the confidence interval of α = .05, which reflects the validity of the proposed hypothesis.

Table 6: Correlation

		Psychological Impacts	Self Medication
Psychological Impacts	Pearson Correlation	1	0.921**
	Sig. (2-tailed)		.000
	N	100	100
Self Medication	Pearson Correlation	0.921**	1
	Sig. (2-tailed)	.000	
	N	100	100

(**Correlation is highly significant at the 0.05 level (2-tailed), r (100) =0.921**; p<.01. r^2=0.85) (Since 85% of the variance is shared, the association is obviously a strong one)

In addition, the correlation authenticates the results as ** is highly significant at the 0.05 level (2-tailed), r (100) = 0.921**; p<.01. r^2 = 0.85, since 85% of the variance is shared; the association is obviously a strong one. It shows that there is strong interaction and relationship between independent and dependent variables.

CONCLUSION AND RECOMMENDATIONS

The frequency of self medication practices is alarmingly high in the educated youth of Pakistan and is the same in both medical and non medical students despite the majority knowing that it is incorrect. The commonly available and frequently used drugs (as mentioned in the discussion) which people use at regular intervals produce health complications leading to diagnosis of different diseases. The theoretical discussion to some extent refers to the fact that self-medication supports the health industry in shape of lessening and multiplying the burden over it.

On the other hand, its darken aspect exceeds far beyond the benefits as it brings with it the devastative physiological and psychological problems to the users. The study in terms of physiological impacts reveals that the problems of headache, stomach and skin problem, diarrhea, menstrual pain, cough, insomnia, fever, flu etc are among the dominant and frequent complaints as contraindications of the mentioned drugs. Besides, in the course of psychological disorders; it is found-out that the symptoms of trauma, stress and strain, phobia, paranoia, delusions, hallucination, tension and anxiety are commonly reported diseases.

The study recommends that strict measures are needed to monitor advertisements of medicines both in print and electronic media. The possibility of having access to medicines not listed as over-the counter OTC drugs should be minimized by taking appropriate monitoring measures including implementing effective legislation. There is also a need to explore the possibility of developing partnerships between physicians, pharmacists and consumers to educate and disseminate information on self-medication so that threats can be minimized. The determinants of self

medication need to be understood to design adequate medicine information policies and patient-dispenser education strategies.

Awareness and education regarding the implications and consequences of self medication should be exposed among the users not to practice this curse. Last but not the least; pertaining to the Third World, health has been one of the most expensive and un-afforded by government, which needs policy measures to provide basic health facilities to the citizens in order to overcome the menace of self-medication.

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