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The Demarketing of Energy Drinks Using Facebook Media: A Healthcare Perspective

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***Abstract*— Energy drinks are becoming a growing issue worldwide, particularly amongst young adults and adolescents. Many researchers and healthcare practitioners have reported serious health problems and even some of them have reported death cases were caused by the consumption of energy drinks. Due to that concern for the health of our youth and for their wellbeing, we noticed a need to research this issue in developing countries particularly in Jordan to unravel any potential health problems. Therefore, this research explores the impact of the de-marketing approach (health education and the pressure of peer, community, and parents) via Facebook to decrease energy drink consumption in young adults and adolescents. This study uses a quantitative method; the sample was limited to adults and adolescents from 15 to 24 years old.The link of the questionnaire had been uploaded along with an introduction page to the Facebook. Only 684 usable questionnaires were obtained. The results shows that the de-marketing variables such as health education and both community and parents' pressure have a significant impact on the respondents' intention to stop consuming energy drinks. On the other hand, there is no significant impact of peers' pressure on the respondents' intention to stop consuming energy drinks. Thus, the study proposes some applicable recommendations as a starting point to apply measures in order to avoid health problems that are related to risky consumption and unawareness of energy drinks side effects.**

***Keywords*— demarketing; energy drinks; healthcare perspective; health education; peer pressure; parents pressure; community pressure; Facebook.**

I. INTRODUCTION

In the recent years, a new product invaded the markets as well as the minds of the young generation which resembled a new form of addiction [1]. It is believed to have a mystic influence on the performance of these people; it is energy drinks (ED) in their various forms and tastes. Not only teenagers and school students have this blind belief for the effects of this product, but also their parents, who feel their children are getting week and incapable of performing well. Especially during exams time, they immediately rush to the nearest supermarket and buy a pack of ED for their children hoping it will affect their energy immediately and it may help them perform better. This is blind ignorance of the real effect that such products may have on those young vulnerable creatures. In fact, those parents are not aware of the dangers they are exposing their children and teenagers to [2]. Any ED product only has the term energy in its brand name but no real energy, and in fact they have adverse effect, in the sense that they negatively affect the health of those who drink it and specifically It is more harmful to the youth [3]. The manufacturers of ED try to convince the consumers of the advantages such products promise to provide them with. Those who are against the product try to point out the negative aspects of such products. This study is an attempt to analyze certain studies and researches conducted to evaluate the effects of the consumption of such products. The study conducts critical review of studies and the results of such research in order to judge such products and either advise people to use them or create awareness for customers about risky consumption of these types of products[4]. We will try to explain the dangers of each serving and of multiple servings. The study will also tackle the effects of combining ED with other products such as ethanol or alcohol, because these days, consumers are keen on obtaining a double effect by combining ED with alcohol or ethanol.

People usually have soft drinks as a refreshment or a softener after a heavy meal to provide them with relief. However, in the past twenty years, EDs have started to invade the markets in incredible ways and they made their way easily to the hearts and minds of young generations. The new product has been described to have magical powers of boosting customers' energy. Life has changed a lot and young generations seem to be weak and fragile, and their weakness augmented with the consumption of unhealthy foods such as fast and junk foods, unlike previous generations who were used to consume more natural food ingredients. As a result, a special need for energy boosting products arose and consequently those products came to fill the new gap in their lives.

According to recent studies and analysis of ED, it was found that these EDs contain high portions of sugar and caffeine, the two products that provide some sort of weak energy, the sugar and the caffeine serves to keep the consumers alert and awake [3, 5, 6]. They also include other herbal ingredients and certain vitamins to give the impression that they contain everything people need to stay energetic and awake. Moreover, Colas soft drinks also contain a good quantity of caffeine and sugar along with many other ingredients and they never dared to say that their products are EDs. It seems that the producers of EDs have built their theory on the psychological effect of calling their product as energy drinks and they have succeeded in planting this illusion in the minds of youth consumers [7].

In order to succeed in our mission of de-marketing for EDs, we have to work on two parallel lines: firstly, to convince consumers that these products do not really contain any ingredients that really would provide them with the desired boosting energy, and secondly, to render them aware of the dangers as a result of consuming ED. Our survey will be based on authentic studies carried out in various parts of the world [4]. It is to be noticed that we have not encountered any study carried out in any Arab country. The reason behind that is that the Arab countries do not consider drinking EDs as a health problem. In fact, it has not reached the alarming levels of being called a problem [6]. Another issue is that there are a small number of people who have reached the level of addiction, and we do not have reported cases that directly link the harm caused as a result of over consuming EDs. Finally, the Arab countries do not have budgets for running surveys and research about such medical situations. Thus, our survey will include investigations and studies from Western countries such as Europe and the USA where EDs consumption has reached alarming levels. They also have reported cases of medical problems and even deaths resulting from the consumption of EDs [5].

Energy drinks are becoming a growing issue in the west where people started reporting health problems and even some reported death cases connected to the consumption of energy drinks [3]. This issue grasped the attention of researchers who are actively trying to find out whether consuming energy drinks are related to such issues and what is the connection between them. Due to that concern for the health of our youth and for their wellbeing, we noticed a need to research this issue in developing countries particularly in Jordan to unravel any potential health problems. Therefore, this research explores the impact of four de-marketing variables (i.e. health education, peer pressure, community pressure, and parents' pressure) via Facebook to decrease energy drink consumption in Jordanian young adults and adolescents.

A. Energy Drinks

When introduced to the American markets in 1997, the "Red Bull" ED brand was praised for giving its consumers energy through increased endurance as well as sexual prowess, an issue of great importance for teenagers. The promoters of this product played on a tune of great appeal for the young people who can be easily influenced [3]. However, going through the list of ingredients of EDs, we notice that they contain a high portion of caffeine along with various stimulant plants such as guaranca and yerba, various B vitamins, Gingseng, Gingko biloba, Sugar components such as glucose and fructose, which are good sources of energy. In addition, there are amino acids, herbs and multivitamins [3]. It was noticed that EDs are often consumed in combination with alcohols, which aggravates the situation when it comes to adverse medical effects. Unfortunately, the consumption of EDs is on the rise in the US, as in 2005, they consumed 2.3 billions and in 2010, it became 9 billions. These figures impose the responsibility of investigating the adverse medical impact on the consumers of such products.

These days, there are around 500 brands of EDs produced and marketed all over the world and these products are regulated by the food and drug administration (FDA), because they are not considered foods but rather food supplements [5]. The 4 Loco® ED brand was discovered to contain large quantities of ethanol, which drew the concern of the FDA because such combination of high concentration of stimulants and ethanol could affect the health of the American citizens.

B. Health Issues

According to a recent medical research, it has been discovered that the caffeine included in ED is absorbed within 30-35 minutes, and then it is metabolized in the liver to produce its desired effect [3]. As a result, the FDA (food and drug administration) investigated the effect of caffeine contents and imposed new regulations restricting the caffeine content to only 71 mg per 12 Oz serving. The research showed that the undesired effects of consuming such substance include nervousness, anxiety, restlessness, insomnia, gastrointestinal complaints, and tachycardia and cardiac arrhythmias and in rare cases death. Pregnant women consuming between 200-300mg per day decreased birth weight for the gestational age of the infant [3]. Another important factor to mention is the relationships of EDs, which contain caffeine that is related to the blood pressure and hypertension. Those who consume high doses of coffee (which contains caffeine) showed a significant increase in their SBP (systolic blood pressure) and diastolic DBP (diastolic blood pressure) and their peripheral vascular resistance. Not only that, but we can also consider the effect of consuming EDs on concentration of glucose triglycerides and the fatty depositions. As it is always the situation, many medical studies are often carried out on animals mainly rats. There were thirty rats divided into three groups which were

provided normal foods and one group were administered 3ml of EDs and later tap water. Analyzing the results of the studies, the animals receiving the ED were additionally characterized by a lower content of peri-intestinal and intramuscular fatty tissue, and they deposited higher amounts of peri-cardiac fatty tissue. Moreover, blood plasma samples of these animals contained higher concentration of glucose. The metabolic effects of ED are attributed to caffeine, saccharose and B-group vitamins occurring in those products [7]. The same thing would apply to human beings consuming EDs at frequent intervals.

Another cross-sectional study from two San Diego emergency departments was carried out on 60,000 patients from January to December. 2009, and the study was approved by the Human Research Protection Program. The study aimed at collecting information about their ED consumption, the periods of the days, how often and if they ever consumed such products or not. The negative effects of consuming these EDs were palpitations, chest pain, and seizures after excessive energy drinks, which may lead to accumulation and increased toxicity, higher concentrations, enzymatic saturation occurs and metabolism converts to zero order kinetics. The study results that over six percent of the participants use energy drinks with ethanol, and eighty-five percent reported consuming EDs with other stimulants. Resulting cases of feeling shaky, insomnia, gastrointestinal upset and sexual dysfunction [5].

Another important discovery from the previous studies was the relationship between EDs consumption and the social and behavioral effects of these products on consumers [8]. According to a study conducted in 2008, it was discovered that there is strong relation between EDs consumption and risk-taking. Frequent EDs consumers were found to have smoked cigarettes, abused drug prescriptions, and were involved in violent activities. They also engaged themselves in unsafe sex, doing extreme sports, and dangerous stunts [6]. The study also showed that the consumption of EDs leads to other bad and dangerous habits of consuming other stronger stimulants and drugs which may destroy the career of people especially pilots. The results are usually lack of concentration, headaches, and risky behaviors.

C. De-marketing Research

Kotler and Levy in 1971 firstly introduced the concept of de-marketing. According to Kotler and Levy [9], de-marketing was defined as any aspect of marketing that deals with discouraging customers generally or a certain class of customers in particular on either a temporary or permanent basis [9, 10]. It is necessary to recognize that de-marketing concept is not the opposite side of marketing, it is simply an integral part of general marketing [11].

De-marketing is an applied part which can be adopted by developing countries in order to deal with product shortages and the healthcare and energy supply sectors in some countries such as North America, Canada, the United Kingdom and Australia. Literature review about de-marketing has been classified into two areas. The first area; de-marketing research that are concerned with product shortages, particularly during the 1970s when concerns about energy supplies were high (for example Cullwick [11] ; Shama [12]; and Gallagher [13]). The second area; de-marketing research that are concerned with the consumption of public services such as healthcare services (for example Borkowski [14]; Kindra and Taylor [15]; Mark and Brennan [16]; Mark and Elliott [17]; MacStravic [18]). Most of these studies were considered as theoretical trends and they have not focused on applied trends of discussing and prescribing de-marketing actions and tasks.

Kindra and Taylor [15], assumed that the term “de-marketing” may appear to be an oxymoron, however, it becomes a relevant section of marketing strategy. Kindra and Taylor [15], proposed some measures of de-marketing such as increasing the price of consumer through different types of user fees, reducing the level and quantity of services, reducing the convenience of access to certain services, and promoting less utilization of services. These suggested some measurements which are similar to those identified by Borkowski [14] as being used by Health Maintenance Organizations in North America. The author also mentions the use of non-promotion of certain health care services by ‘repressing information about elective and/or costly services’. Toward create effective de-marketing measurements; these de-marketing measures should be accompanied by premeditated promotion of less-costly preventive procedures such as. physical examinations and immunizations, Borkowski [14]. Kindra and Taylor [15] also stated that de-marketing is the use of different types of services which are accompanied by marketing in order to create effective customer satisfaction.

Like general marketing concepts, de-marketing is concerned with marketing mix elements 4Ps. Particularly, some previous studies about de-marketing in healthcare, such as Borkowski [14], Kindra and Taylor [15], Mark and Elliott [17], and Mark and Brennan [16] concluded that de-marketing is useful and effective concept in healthcare services. However, the concept has been criticised for ethical issues. According to MacStravic [18], de-marketing is both pragmatically risky issue and ethically questionable concept. For example, limited access to emergency rooms and discouraging inpatients stays after delivery of babies. The use of de-marketing in this way without providing acceptable alternatives for customers is debatable and questionable. Hence, the current study proposes a de-marketing framework for energy drinks from a healthcare perspective, which includes some aspects that are helpful for setting a reasonable foundation for de-marketing in healthcare context [19].

The current research suggests that there are certain driving factors, which positively affect healthy behaviour. For example, enhancing consumer awareness of certain health problems cause by EDs. Furthermore, word of mouth, customer reviews, and recommendations from friends, parents, and opinion leaders regarding to many healthcare issues lead to decrease intention to stop consuming EDs.

II. MATERIAL AND METHOD

The population of this study represents the Facebook users of Jordanian youth. A diversified sample of youth that represents a wide range of the youth in Jordan was surveyed. A quantitative method was used to gather data in this research, specifically, the study created custom-made online

survey from scratch to suit the objectives of our study and to cover all the elements which we need to investigate. The link of the questionnaire had been uploaded along with an introduction page to the Facebook. The sample was limited to adults and adolescents from 15 to 24 years old. Only 684 usable questionnaire were obtained.

Table 1 presents the socio-demographic information about the respondents. In the sample, 62.6% of respondents were males and 37.4% were females.71.2% of respondents were more than 22 years old reflect that even though they adults but they do not have enough Awareness and education on the ingredients and potential health hazards of energy drinks. The majority of respondents were bachelor students with about 92.3%, consumption of energy drinks, despite the variation in the reason for choosing such drinks, is quite common in bachelor students.About61.5% of respondents preferred to drink Red Bull over other types of EDs. 66.8 % of respondents have drunk the ED for more than five years. Only 8.6% of respondents are consuming ED daily, while 41.7% and 44.6% of respondents are consuming ED weekly and monthly respectively.

TABLE I
DEMOGRAPHICS OF RESPONDENTS

Demographic profile	Categories	Number	Percentage %
Gender	Male	428	62.6
	Female	256	37.4
Age	15-18 years	42	6.1
	19-21 years	155	22.7
	22-24 years	335	49.0
	More than 24 years	152	22.2
Educational Level	Secondary Schools students	36	5.3
	Diploma students	17	2.5
	Bachelor students	631	92.3
Drinking EDs since	1 year or less	42	6.1
	1-2 years	60	8.8
	3-4 years	125	18.3
	5 years or more	457	66.8
Types of ED	Monster	74	10.8
	Red Bull	421	61.5
	Power Horse	109	15.9
	Others	80	11.7
ED Frequency	Daily	59	8.6
	Monthly	305	44.6
	Weekly	285	41.7
	Occasionally	35	5.1

III. RESULTS AND DISCUSSION

Collected data are processed the statistical package for the social science (SPSS v.21). Results of analysis are presented in Table 2.

TABLE II
MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.610[a]	.372	.368	.60852

a. Predictors: (Constant), health education, parents' pressure, peer pressure and community pressure

The value of R^2 is 0.372, which tells us that health education, parents' pressure, peer pressure and community pressure via Facebook can account for 33.5% of the variation in respondents' intention to stop consuming EDs. Health education, parents' pressure, peer pressure, and community pressure factors can explain approximately 37% of respondents' intention to stop consuming ED. This means that 62.8% of the variation in intention cannot be explained by only health education, parents' pressure, peer pressure, and community pressure factors. Consequently, there must be other factors that have an influence as well.

TABLE III
ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	148.923	4	37.231	100.542	.000[b]
	Residual	251.433	679	.370		
	Total	400.355	683			

a. Dependent Variable: respondents' intention to stop consuming ED
b. Predictors: (Constant), Health Education, Parents' Pressure, Peer Pressure and Community Pressure

Table 3 shows the various sums of squares and the degrees of freedom associated with each. However, the F-ratio is 100.54 and the associated significance value of that F-ratio is less than .001 at $p \leqslant .05$. This result tells us that there is less than a 0.1% chance that an F-ratio this large would happen if the null hypothesis were true. Consequently, the results confirm that regression model results in significantly better prediction of intention to stop consuming EDs than if we used the mean value of intention to stop consuming EDs. In short, the regression model overall predicts intention to stop consuming EDs significantly well.

TABLE IV
COEFFICIENTS OF VARIABLES

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.261	.153		14.797	.000
	Health Education	.174	.046	.168	3.820	.000
	Parents Pressure	.270	.055	.266	4.929	.000
	Peer Pressure	-.082	.049	-.094	-1.675	.094
	Community Pressure	.287	.041	.337	6.930	.000

a. Dependent Variable: respondents' intention to stop consuming ED

Table 4 shows that the *t*-test of the *b*-value is more than zero, the probability of health education, peer pressure, and community pressure *t*-values or larger occurring if the values of *b* in the population were zero is less than .001. Therefore, the *b* of health education is different from zero and if the health education is increased by 1, then the model predicts that 0.174 more intention to stop consuming EDs, and the

study can conclude that the health education makes a significant contribution ($p < .001$) to predict the respondents' intention to stop consuming EDs. In addition, the *b* of parents' pressure is different from zero, and if the parents' pressure is increased by 1, then the model predicts that 0.270 more intention to stop consuming ED, and the study can conclude that parents' pressure makes a significant contribution ($p < .001$) to predict the respondents' intention to stop consuming EDs. Furthermore, the *b* of community pressure is different from zero, and if the community pressure is increased by 1, then the model predicts that 0.287 more intention to stop consuming EDs, and the study can conclude that community pressure makes a significant contribution ($p < .001$) to predict the respondents' intention to stop consuming ED. On the other hand, the *b* of peer pressure is not different from zero, and the study can conclude that peer pressure does not make a significant contribution to predict the respondents' intention to stop consuming EDs (*p* is more than 0.05).

In view of the impact of de-marketing in reducing Jordanian youth consumption of energy drinks. It has been revealed that the peer pressure via Facebook has no significant impact on the intention to stop consuming energy drinks, it might be justified because the consumers are shared the same drinks with their friends. However, it has been discovered that the following three factors (health education, parents' pressure, and community pressure via Facebook) have a significant impact on the consumers' intention to stop consuming the energy drinks.

Establish an awareness by health education to spread the word about the harmful side effects and health risks of drinking energy drinks [20]. Especially spreading awareness of the dangers of youth consumptions of such drinks, in addition, of how it could develop an addiction to whomever is consuming it. It was also found that more than 50% of the sample believes that EDs have a negative effect on playing extreme sports. In fact, when people use energy drinks, they hope to get the energy required to perform such difficult tasks, and to their greatest astonishment, this product fails to meet their expectations.

The food and drugs administration (FDA) should start monitoring energy drinks marketing campaigns and prevent them from marketing to youth that are under the age which is allowed to drink such drinks at as some energy drinks companies host events at schools and promote their products there which is illegal but they do it anyway because of the lack of monitoring of such activities. The lack of strict rules and monitoring against the companies which do such things. There should be developed strict rules, regulations, and sanctions enforced to deter energy drinks companies from such activities.

The results of this study shows that people consume energy drinks for various reasons and mainly because of what it promises to deliver to the consumer from increased levels of energy, increased levels of awareness, increased mental and physical performance,. For the FDA, to do constant random sample testing of energy drinks products to ensure the levels of ingredients are listed on the bottles and in compliance with health ministry permitted levels of each ingredient.

Nutrition experts must think of a new and totally different formula of ED that would correspond to its name in value and in contents. They must think of the physiological need of the human body and incorporate the needed ingredients that would render it a true ED. What we have in the present products, as we previously mentioned, a high portion of sugar and caffeine, with herbal supplements that act as a stimulant and smaller portions of few vitamins and acids. A true ED should include good portions of necessary vitamins, some proteins, fibers and necessary substances that support the human body and provide it with the components that help it work properly. As shown in the formula of certain ED already available in the markets, it contains of some mysterious substances extracted from wild herbs and substances, which allegedly have the capacity to provide males with sexual capabilities and make them powerful. For example, Ginseng which is often the source of pride in ED ingredients should be avoided because it minimizes blood sugar and decreases exercise endurance.

Alternatively, honey would be a useful component if mixed with small amount of caffeine that may boost energy, alertness and athletic performance. Including amino acids which may boost athletic performance and body metabolism. These are some of the substance that the human body needs and they can be supplied by EDs in various percentages that suits various people and their needs. It is also advisable to mention which product is suitable for which type of people who are expected to consume it and for what purpose or activities. This would be a suitable alternative to available EDs that are found on the shelves of supermarkets. This would be a sustainable product, hence, let us work on producing it.

IV. Conclusion

The current research can create awareness, and open many eyes to the problem of energy drinks and their negative effects which are spreading like a wild fire in our societies without it even being considered as a problem by the most people. This research in the first place trying to explore the major de-marketing variables to affect the intention of EDs consumers and stop consuming such drinks.

The results show that health education, parents' pressure, and community pressure via Facebook as de-marketing factors have significant effect on consumers' intention to stop consuming the energy drinks. On the other hand, the peer pressure via Facebook has not a significant effect on the intention of EDs consumers to stop consuming such drinks.

In addition, a special call goes out for our Jordanian food and drug administration (FDA) in particular and in general to the (FDA's) around the Arab world and the world as a whole who might be interested in the results of this research. This research study acts as a wakeup call for them to provide more attention to this problem and to further investigate this matter from many different sides. We hope that future researchers will take interest in this truly interesting field of study, and to build on what we already established continuing the constant advancement of knowledge. This research is considered as the first step to cover the de-marketing approach from healthcare perspective in developing countries.

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