Relationship Between Emotional Intelligence and Health Behavior among Employees Working at Damanhour University/Egypt

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Abstract
Emotional Intelligence (EI) is an emerging concept for understanding human behaviors. It is an essential feature for promotion of positive health behaviors and prevention of negative ones. **The aim**: assess the relationship between EI and health behavior among employees working at Damanhur University/Egypt. **Design:** A descriptive correlational research design was utilized. **Setting** the study was carried out in the main administrative building of Damanhur University. **Participants:** A simple random sampling technique was used to choose 200 employees. **Tools:** Three tools were used for data collection: A structured questionnaire for socio-demographic data, EI scale and health behavior scale. **Results:** A significant positive correlation was found between the total EI and health behavior scales and all of its domains (dietary behavior, personal care/health responsibility, injury and accident prevention and stress management) except smoking and physical exercise. Otherwise, a significant negative correlation was found between substance abuse behaviors and the total EI scale and its two subscales of emotions regulation and emotions perception and expression. **Conclusion and Recommendations:** EI is a helpful tool for promotion of positive health behaviors and prevention of risk behaviors. Thus, EI abilities should be taught for public as a target for health promotion through educational programs, campaigns, hotlines. It also should be included in school curricula to promote health of the future generations.
Keywords: Emotional intelligence, Health behavior

1. Introduction

Studying of health behavior and its determinants is the core component for public health promotion to develop effective health education and health promotion policy and programs. Health behaviors basically reflect any activity carried out with measurable intensity, duration and frequency for the purpose of maintenance, restoration or promotion of health. They don't found independently but usually are often related in clusters in a complex pattern of behaviors known as lifestyles. It is reasonable to argue that almost each behavior has either negative or positive effect on health status. Positive health behaviors are categorized as protective/pro-health behaviors that are adopted for protection from diseases and promotion of health. Conversely, negative health behaviors are known as risk behaviors/anti-health or damaging behaviors which increased the individual's susceptibility to ill health [1,2].

The epidemic increase of behavior-linked risk factors in the 21st century as smoking, alcohol use, unhealthy diet and physical inactivity are responsible for the growing burden of non-communicable diseases. Thus, confronting such behaviors is urgent to significantly decrease their burden and associated disability and premature death. This can't be achieved without searching behind the reasons for such behaviors [2,3].

Several factors can explain variation in individual's performance of health behaviors including biological, social and psychological factors especially affect and emotions which are emerge from the dynamic process of interaction among feelings, cognitive appraisals, behaviors and physiology. Theoretical frameworks which work to understand and change health behavior have emphasized on social and cognitive determinants as knowledge, attitudes, self-efficacy and social norms which do not take into account individuals' affective states [4,5]. Nevertheless, converging evidence proposes that several affective states; motivation, stress and emotions are crucial to health behavior and decision making [6-8].

Emotions are one of the main constituents of the self-regulatory and motivational system which adjusts individuals' behavioral responses to achieve intended goals through an intellectual feedback mechanism to maintain balance. Thus, they seem to have great impact on individual's beliefs, behaviors, decision making and adaptation to the surrounding world. Evidence showed that every individual has varied emotional abilities. This means that some individuals can employ their emotions positively in different situations which can enhance thoughts contributing to positive behavior, problem solving and decision making [6-8]. Consequently, individuals need to be equipped with certain emotional skills as perceiving, understanding, utilizing, regulating and managing of their emotions to facilitate thought and behavior. Such emotional abilities are known as emotional intelligence (EI) which brings together emotions and intelligence while viewing emotions as valuable source of information that aid individuals to lead their thinking and behaviors [9,10].

Recently, EI has gained greater attention as a modern explanatory concept for understanding human

behavior which contributes to numerous life outcomes including health and wellbeing. It was primarily defined as the ability for perceiving, understanding and managing emotions to enhance individuals' intellectual, emotional and social development. Hence, EI explained the individual's ability to recognize their own and others' feeling, distinguish between them and effectively managing self-emotions to guide their thinking, behaviors and relationships [9,11].

Currently, there are three basic EI models namely: ability, trait and mixed models. *The first*: ability model was constructed by Salovey and Mayer (1990) and recognized EI as pure intelligence/cognitive ability. This indicates that EI is a set of abilities that grow across lifespan through interactions between emotions and the developing cognition [9,12]. *The second*: mixed model was introduced by Bar-On (2000) which combined both cognitive abilities and personality aspects. It explored how both of them influence the individual's general well-being to contribute to real-world adaptation. Another mixed model was introduced by Goleman (2006) but it mainly used to measure workplace success [10,11]. *The third:* trait model was recently developed by Petrides (2009) and supposed that EI is an overarching personality factor rather than ability based. It assumed that all individuals have a set of certain emotional self-perception and emotional traits as part of their personality[13].

Numerous scholars have worked to demarcate the mechanisms involved in the relationship between EI and physical health. EI was found to be conducive to disease prevention and health promotion through promoting individual's emotional capabilities which further foster their adaptive ability to regulate upsetting emotions and enhance their decision making ability to avoid poor health behavior and develop positive ones[7,14]

Basically, individuals' emotional status emerged from a dynamic process of interaction between feelings, cognitive appraisal (emotion-mental schema), behaviors and physiological response. In the light of that, the link between EI abilities and health behaviors can be elaborated by the appraisal tendency framework. It postulated that there is reciprocal relationship between the emotional and cognitive appraisal changes. Thus, emotions can help in decision making about either initiative or maintenance behavioral pattern through their influence on three categories of judgment and thought processes [7,15]. *Firstly,* the risk perception: emotions can influence persons' risk perception of diseases which can be avoided through certain health behaviors and guide their judgmental decisions for engagement in such behaviors. Hence, emotionally intelligent persons are expected to have proper emotional-mental appraisal schema that analyzes the definite risks or benefits associated with a particular health behavior. This can guide their behavioral decision through cautious cognitive appraisal abilities [7,15,16].

Secondly, valuation and reward-seeking: emotion influences the individuals' way of estimating the worth of varied choices and their tendency to a specific behavior. It draws the road for either adopting of unhealthy behaviors to seek immediate pleasant gratification or avoiding them to get considerable delayed benefit of disease prevention and health promotion in later life. Thus, emotionally intelligent individuals are assumed to be more able to effectively regulate their emotions and don't allow them to influence their health related behavioral decisions [7, 17].

Thirdly, interpersonal attribution: individuals are more motivated to participate in interpersonally pertinent health behaviors through the influence of social norms to avoid undesirable feeling of stereotyping and blaming. Therefore, emotionally intelligent persons are expected to have their own personal attribution of a particular health behavior. In addition, they possess the required capabilities for distinguishing themselves from others by participating in desirable health behaviors rather than normative ones. Moreover, they are also able to understand, communicate and relate effectively with others for interchanging of social knowledge about positive health behaviors headed by their own frame of reference about such behaviors [14,15].

1.1 Significance of the study

To date the study of efficacy of EI in public health and health promotion is widely neglected. In addition, the medical advances in the past century had dramatically shifted the patterns of illness from communicable to non-communicable diseases as prominent reasons of morbidity and mortality which are linked to chronic stress and unhealthy behaviors. This further increase the financial burden placed on the health care system. Simultaneously, EI appears to be a major influencing factor on individual's health behavior. It can aid individuals to act cautiously to avoid risk behaviors and develop healthy ones through possessing of proper emotional and cognitive appraisal skills. Thus, it is of paramount importance to study the bond between EI and health behavior as a cornerstone for public health promotion especially with the scarce evidence available in this respect [14,15].

1.2 Aim of the study

This study aimed to: assess the relationship between emotional intelligence and health behavior among employees working at Damanhur University/Egypt.

1.3 Study question:

- Is there a relation between emotional intelligence and health behavior among employees working at Damanhur University/Egypt?

1.4 Operational definition of health behavior

In this study health behavior refers to the actions undertaken either to maintain or improve health [1].

2.   Material and methods

2.1. Material

2.1.2 Research design

A descriptive correlational research design was utilized

2.1.3 Setting

This study was conducted in the main administrative building of Damanhur University as it included the highest percent of employees rather than faculties.

2.1.4. Subjects

The sample of the present study included 200 employees working at the main administrative building of Damanhur University. They were selected by simple random sampling technique.

2.1.5. The sample size*:*

It was calculated by using EPI info7 software based on average number of employees in the university administrative building (372), 50% expected frequency with an acceptable error of 5% and confidence limit of 95%. This resulted in a minimum required sample size of 190. The final sample size was 200 employees to compensate for possible non response.

2.1.6. Tools: Three tools were used for data collection:-

Tool I: Socio-demographic data structured questionnaire

It was developed by the researchers based on a thorough review of relevant literature to collect data related to socio-demographic characteristics of the studied sample such as: age, sex, marital status, residence, education and income.

Tool II: Emotional intelligence scale

It a self-reported measure of EI that can directly measures people's perceived beliefs about their emotional abilities. It was adapted from Al-Alwan A (2011) - as it was basically developed to match the Arab World- based on relevant literature [9, 18,19]. The scale consisted of 41 items rated on a five-point Likert scale that ranges from 1 (never) to 5 (always). It consists of four subscales: emotions perception and expression (9 items), emotions regulation (10 items), empathy (13 items), and interpersonal relation management (9 items). The items were randomly distributed in order to avoid leading sentences as illustrated in the following table:

	Items	Questions number
1.	Emotions perception and expression	2,5,7,15, 18, 19,32,34,39
2.	Emotions regulation	4, 8, 13,16,17,21, 23,29,31,40
3.	Empathy	1, 3, 6, 11, 14, 20, 26,27, 28, 30, 33, 36,37
4.	Interpersonal relation management	9,10, 12, 22, 24, 25,35,38,41

The total score ranged from 41 to 205 and categorized into three levels of emotional intelligence as follows:- low (41-96), moderate (97-151) and high (152-205).

Tool III: Health behavior scale

It was developed by the researchers based on a thorough review of relevant literature to collect necessary data about employees' health behavior. It composed of 60 items rated on a five-point Likert scale; (5) always, (4) very often, (3) often, (2) occasionally, and (1) almost never.

The scale consists of six domains: dietary behaviors (17 items), physical exercise (8 items), personal care (12 items), smoking (5 items), substance abuse (7 items), injury and accident prevention (4 items) and stress management (7 items). The score was reversed for several items (7,9,11,16). The total score was calculated and ranged from 60 to 300; it was categorized into three levels of health behavior as follows:- poor (60 -140), fair (141-220) and Good (221-300)

2.2. Method

The study was executed according to the following steps:

▪ An official letter was directed from Faculty of Nursing to University of Damanhur to obtain their permission for conducting the study.

▪ Tool (I, III) was developed by the researchers based on thorough review of relevant literature and tool (II) was adapted by the researchers.

▪ All tools were tested for content validity by a jury of five experts in the field and the recommended modifications were done accordingly.

▪ Test-retest reliability was done for tool (II) and tool (III) and the result was statistically acceptable (r=0.89) and (r=0.88) respectively.

▪ A pilot study was conducted on 20 employees (excluded from the study subjects) to ascertain the clarity,

applicability, and feasibility of the tools and to identify obstacle that might interfere with the process of data collection. Accordingly, necessary modifications of the tools were done.

▪ The study aim was explained to the employees in their offices.
▪ The questionnaire sheets were distributed to the employees during their break time.
▪ The researchers attended during filling the questionnaire to ensure that all questions were answered and respond for elaboration or explanation by employees.
▪ The duration of completing the sheets ranged between 30-45 minutes.
▪ Two days/week were specified for data collection over a period of 3 months, started from October 2017 till the end of January 2018. An average of 8-10 employees filled the questionnaire/ day.

2.2.1 Statistical analysis: The collected data was revised, categorized, coded, computerized, tabulated and analyzed using statistical package of social sciences (SPSS) version 20. The following statistical measures were used:

- Descriptive statistics: frequency, percent, mean with standard deviation to describe the scale and categorical data.
- Analytical statistics: Monte Carlo (MCP) and Pearson Correlation Coefficient (r) tests were used to explore the relation between variables. The 0.05 level was used as the cut off value (P value) for statistical significance.

2.2.2   Ethical consideration:

For each subject an informed oral consent was obtained after explaining the purpose of the study. Additionally, their anonymity, privacy, freedom to withdraw from the study at any time and confidentiality of their data were all emphasized prior to starting the data collection.

3.   Results

Table (I) distribution of the studied employees according to their socio-demographic characteristics

Characteristics		No. (n=200)	%
Age (years)	<25	34	17.0
	25-	62	31.0
	30-	51	25.5
	40-	26	13.0
	50+	27	13.5
Mean ± SD		33.9 ±11.6	
Gender	Male	98	49.0
	Female	102	51.0
Residence	Rural	79	39.5
	Urban	121	60.5
Marital status	Single	63	31.5
	Married	131	65.5
	Divorced / widow	6	3.0
Education	Diploma	48	24.0
	Middle Institute	35	17.5
	University	105	52.5
	Post graduate	12	6.0
Family size	<4 persons	40	20.0
	4-5	100	50.0
	6+	60	30.0
Mean ± SD		4.7 ± 1.3	
Monthly income	Insufficient & loan	37	18.5
	Sufficient for basic needs only	84	42.0
	Sufficient for basic & emergency needs	57	28.5
	Sufficient and saving	22	11.0

Table (I) portrays that studied employees' age ranged between 22-59 years with a mean age of 33.9 ±11.6 where 31.0% of them were aged between 25 to less than 30 years. Females represented 51.0% of the employees and 60.5% of them were urban residents. Furthermore, 65.5% of the employees were married and 52.5% of them have university education. The table also depicts that 50.0% of the employees' families composed of four to five

members with a mean of 4.7 ± 1.3 and 42.0% of them had sufficient income for basic needs only.

Table (II): Distribution of the studied employees according to their score of emotional intelligence domains.

Emotional intelligence domains	Low		Moderate		High	
	No	%	No	%	No	%
▪ Emotions perception and expression	4	2.0%	130	65.0%	66	33.0%
▪ Empathy	0	0.0%	106	53.5%	92	46.5%
▪ Emotions regulation	0	0.0%	121	60.5%	79	39.5%
▪ Interpersonal relation management	0	0.0%	95	48.0%	103	52.0%

Table (II) portrays that 65.0% of the studied employees' have moderate emotional perception and expression score. Additionally, 60.5% and 53.5% of them have either moderate emotional regulation or empathetic abilities score, respectively. Finally, 52.0% of the studied employees have high interpersonal relation and the rest (48.0%) of them have moderate relations.
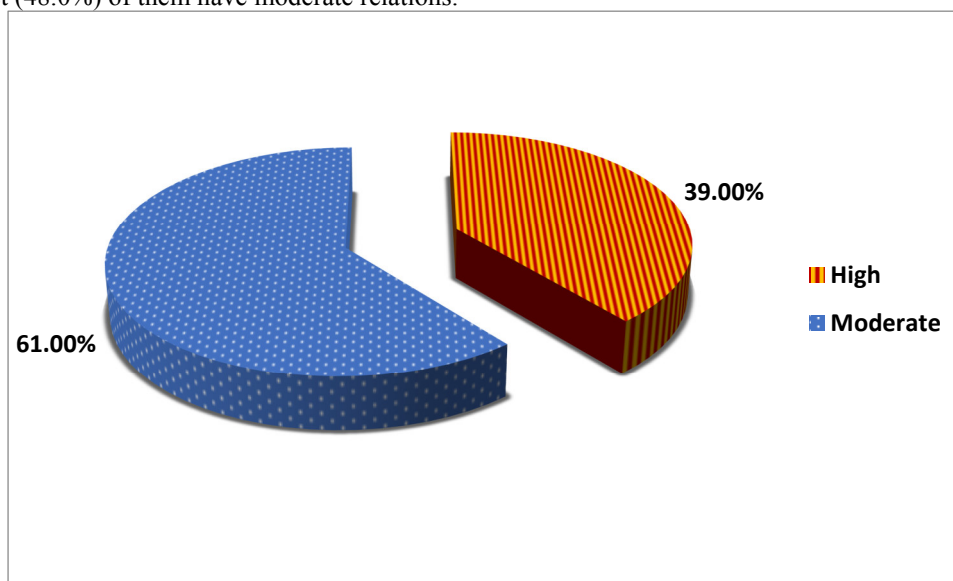

Figure (I) distribution of the studied employees according to their total emotional intelligence score.

Figure (I) shows that all the studied employees have either high (39.0%) or moderate (61.0%) total EI score.

Table (III): distribution of the studied employees according to their score of Health Behavior Scale domains.

Health behavior scale domains	Poor		Fair		Good	
	No	%	No	%	No	%
▪ Dietary	57	28.5%	143	71.5%	0	0.0%
▪ Physical exercise	31	15.5%	41	64.0%	128	20.5%
▪ Personal care	14	7.0%	78	39.0%	108	54.0%
▪ Injury and accident prevention	61	30.5%	60	30.0%	79	39.5%
▪ Stress management	22	54.0%	70	35.0%	108	11.0%
▪ Substance abuse	73	36.5%	81	40.5%	46	23.0%
▪ Smoking	0	0.0%	176	88.0%	24	12.0%

Table (III) shows fair dietary and physical exercise behaviors among 71.5% and 64.0% of the studied employees, respectively. However, good personal care and injury and accident preventive behaviors are observed among 54.0% and 39.5% of them, respectively. Moreover, 54.0% of the studied employees have poor stress management techniques. The highest percent (40.5%, 36.5%) of the employees have either fair or poor substance abuse behaviors while 88.0% of them have fair smoking behaviors.
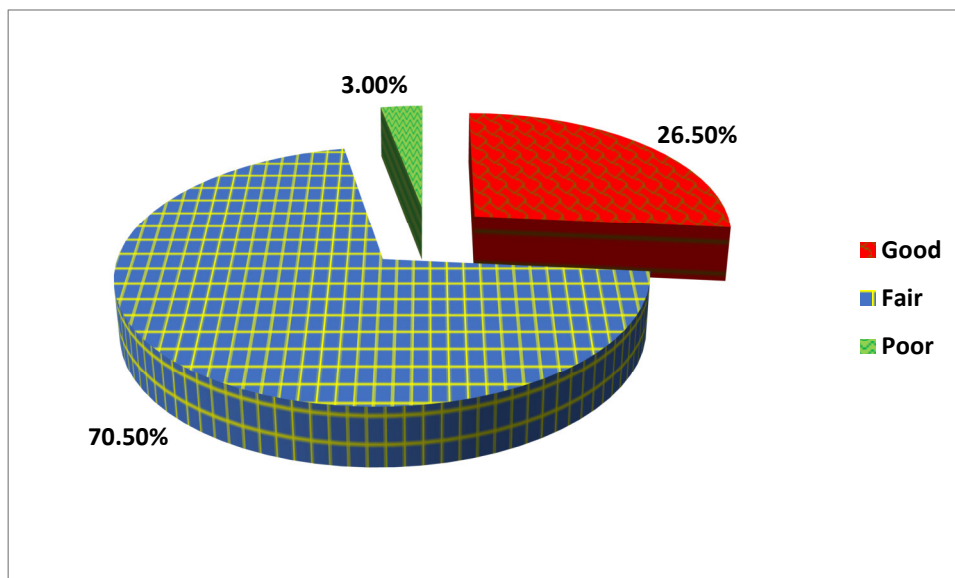
Figure (II) distribution of the employees according to their Health Behavior Scale

Figure (II) shows that 70.5% of the employees have fair total health behavior score however 26.5% of them have good total health behavior score.

Table (IV) Correlation between studied employees' health behavior and emotional intelligence scales.

Domains	Correlation coefficient	Emotions perception and expression	Emotions regulation	Empathy	Interpersonal relation management	Total emotional intelligence scale
Dietary behavior	R	0.076	0.065	0.047	0.054	0.148
	P	0.283	0.357	0.510	0.450	0.036*
Physical exercise	R	0.110	0.064	0.100	0.035	0.037
	P	0.119	0.371	0.159	0.624	0.600
Personal care/ health responsibility	R	0.128	0.130	0.027	0.065	0.241
	P	0.072	0.067	0.708	0.359	0.001*
Injury and accident prevention	R	0.051	0.078	0.012	0.003	0.229
	P	0.473	0.275	0.871	0.972	0.001*
Stress management	R	0.128	0.075	0.021	0.005	0.165
	P	0.070	0.290	0.774	0.944	0.019*
Substance abuse	R	- 0.210	- 0.223	0.077	0.107	- 0.400
	P	0.003*	0.001*	0.278	0.134	0.001*
Smoking	R	0.070	0.026	0.005	0.069	0.091
	P	0.326	0.716	0.949	0.333	0.202
Total health behavior scale	R	0.118	0.122	0.212	0.247	0.292
	P	0.096	0.085	0.001*	0.001*	0.001*

r: Pearson correlation coefficient   * P < 0.05 (significant)

Table (IV) indicates significant positive correlation between the total EI scale and the total health behavior scale (r=0.292, P=0.001) and its domains of dietary behavior (r=0.148, P=0.036), personal care (r=0.241, P=0.001), injury and accident prevention (r=0.229, P=0.001) and stress management techniques (r=0.165, P=0.019). However, there is no significant correlation found between total EI scale and domains of physical exercise (r=0.037, P=0.600) and smoking (r=0.091, P=0.202). On the other hand, a significant negative correlation is found between substance abuse and the total EI scale (r=0.400, P=0.001) and domains of emotions perception and expression (r=0.210, P=0.003) and emotions regulation (r=0.223, P=0.001). Finally, a significant positive correlation is revealed between total health behavior scale and two EI domains: empathy (r=0.212, P=0.001) and interpersonal relationship management (r=0.247, P=0.001).

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Table (V) Distribution the studied employees' emotional intelligence score in relation to their socio-demographic characteristics

Characteristics		Emotional intelligence				Sig. MCP
		Moderate		High		
		No	%	No	%	
Age (years)	<25	26	76.5	8	23.5	0.035*
	25-	32	51.6	30	48.4	
	30-	31	60.8	20	39.2	
	40-	20	76.9	6	23.1	
	50+	13	48.1	14	51.9	
Gender	Male	60	61.2	38	38.8	0.949
	Female	62	60.8	40	39.2	
Residence	Rural	51	64.6	28	35.4	0.405
	Urban	71	58.7	50	41.3	
Marital status	Single	41	65.1	22	34.9	0.673
	Married	77	58.8	54	41.2	
	Divorced / widow	4	66.7	2	33.3	
Education	Diploma	34	70.8	14	29.2	0.007*
	Middle Institute	23	65.7	12	34.3	
	University	63	60.0	42	40.0	
	Post graduate	2	16.7	10	83.3	
Family size	<4 persons	28	70.0	12	30.0	0.391
	4-5	60	60.0	40	40.0	
	6+	34	56.7	26	43.3	
Monthly income	Insufficient & Loan	23	62.2	14	37.8	0.499
	Sufficient for basic needs only	52	61.9	32	38.1	
	Sufficient for basic & emergency needs	31	54.4	26	45.6	
	More than sufficient	16	72.7	6	27.3	

MCP: Monte Carol Test   ***Significant at: P < 0.05**

Table (V) declares a significant difference between the studied employees' total EI score and their age (P=0.035) and education (P=0.007). Conversely, no significant difference was found between employees' EI and their gender (P=0.949), residence (P=0.405), marital status (P=0.673), family size (P=0.391), and monthly income (P=0.499).

4. Discussion

Recently, there is a rising interest in exploring the association between EI and health behavior but it is still in its infancy stage. EI is an essential life skill that equips the individuals with essential abilities for emotional perception, expression, regulation and management. Accordingly, it is crucial feature for health promotion as it helps individuals to develop positive health habits, overcome poor habits and control their personal behaviors [11,14]. Moreover, recent evidence highlighted the profitable role of enacting EI training -either at school or community level- in cutting down health expenditure and developing public health programs and policies [20].

The findings of the present study indicated that all the studied employees had either moderate (61.0%) or high (39.0%) EI abilities. Simultaneously, the highest percent of them had either fair (70.5%) or good (26.5%) health behavior. A congruent figure was illustrated by two novel studies. *First*, Sygit-Kowalkowska et al (2015)[21] found that the majority of their respondents have moderate to high EI, health practices and preventive health behaviors. The study analyzed EI and health behavior in Polish adults. *Second,* Vanishree M (2014)[22] who examined the relationship between EI and demographic variables of Indian information technologists, showed average to high EI abilities among most of the participants. This average to high EI skills which was proved by the current and the previous two studies may be ascribed to the employed adulthood stage where evidence portrayed EI as a cumulative ability that is improved with age and its associated life experiences [23].

The role of EI in health promotion and disease prevention is an ever-rising interesting issue. The current study revealed a significant correlation between total EI and health behavior scales. This reflects the value of EI in promoting health through enhancing positive health behaviors and preventing of negative ones. Thus, it can be postulated that high EI abilities equip persons with essential capabilities for emotions perception, expression,

regulation and management for taking appropriate health choices and decisions.

Parallel figure was proved by four novel studies. *First,* Ali N and Ali O (2016)[24] conducted a study on American nursing students to assess their stress perception, lifestyles and EI. It explored that participant with higher EI abilities tended to practice healthier lifestyles. *Second and third,* a Spanish study assessed the relationship between physical and mental health, health behaviors and EI by Fernandez-Abascal E and Martin-Diaz M (2015)[25] and aforesaid study by Sygit-Kowalkowska et al (2015)[21] revealed that EI had significant relationship with health behaviors. *Fourth,* Rivers S et al (2013)[26] assessed the protective influence of emotions skills on risk behaviors among American university students. The study revealed significant negative relationship between EI and risk behaviors and concluded that higher EI abilities may be protective against risk taking. This was further reinforced by Soma D (2016)[27] who highlighted the value of incorporating EI skills into school curriculum for promotion of healthy lifestyles. The study reviewed the three dimensional relationships of EI, exercise and stress among Indian adolescents.

The relationship between emotions and food intake can be regulated by the use of EI skills to make healthy foods choices which recently known as Eat Q: Eat mindfully, Avoid overeating, Tackle cravings and Quit feeling guilty[28]. The present study revealed that EI had significant positive correlation with dietary behaviors. The same was postulated with two earlier listed studies by Ali N and Ali O (2016)[24] and Sygit-Kowalkowska et al (2015) [21].

The nature of the relationship between EI and dietary behaviors was elaborated by two novel studies by Filaire E et al (2012)[29] and Wong FV (2011)[30] who portrayed negative correlation between EI and emotional eating. *The former,* studied the relationship between eating behavior disorders and psychological parameters among French students. *The latter,* carried out a study on American faculty students to assess the correlation between EI, body mass index and dietary behaviors. Thus, emotionally-intelligent persons are more able to make mindful food choices, perceive the risk of unhealthy diet, control their emotions to avoid socio-normative eating and cognitively evaluate and regulate their emotions to prevent them from controlling their food choices. This sheds the light on the need for developing EI skills based nutritional education programs [7,17,31].

Regarding physical exercise behavior, although the current study explored higher EI capacities among the physically active employees, no significant relationship was observed between EI and physical exercise behaviors. This may be due to the homogeneity of the studied employees' physical activity level and duration where 64.0% of them had moderate activity level. This comes in accordance with two recent studies. *First,* Sarabandi S (2013)[32] examined the relationship between EI and scholastic performance of Iranian students. They denoted lack of significant difference between respondents' scores of EI and their physical activity practices. *Second,* Pasand F (2010)[33] studied EI among British sportsmen and non-sportsmen and its relationship with demographic factors. The study inferred absence of significant difference between the two groups with respect to their EI scores.

Conversely, two studies showed a contradicting figure; a recent study assessed EI and physical activity among American adults by Zysberg L and Hemmel R (2018)[34] and above-mentioned study by Ali N and Ali O (2016)[24] showed a significant positive correlation between EI scores and physical exercise behavior. The reason behind the inconsistency between the current study findings with those two contradictory studies could be explained by the cultural difference in the personal attribution to the physical exercise type, intensity and performance duration.

EI can be predictive of individuals' sense of responsibility for health and wellbeing [8]. The present study revealed that EI abilities were positively correlated with the studied employees' personal care/health responsibility behaviors (self-screening, periodic checkup, hygienic care, avoidance of exposure to radiation and harmful sun rays).

Consistent findings were postulated by three studies. *First,* Espinosa A and Kadic-Maglajlic S (2016)[35] analyzed the EI moderating effect on the relationship between health behaviors and consciousness. The study elaborated that EI moderates the relationship between health consciousness and positive health behaviors such as dental flossing, skin care and screening behaviors. *Second,* aforementioned study by Fernandez-Abascal E and Martin-Diaz M (2015)[25] proved a significant positive correlation between participants' EI abilities and their preventive health behaviors and wellness maintenance activities. *Third,* Brackett M et al (2004)[36] explored a significant positive relationship between EI and everyday behaviors mainly care of physical appearance (e.g., grooming and choosing clothes). They studied EI and its relation to everyday behaviors among American college students. This denotes that emotionally-intelligent individuals have high responsibility to their health where they possess the necessary EI abilities for emotions regulation and taking cautious decision to engage in positive health behaviors after appraising the associated benefits and risks [7,26].

Evidence showed that EI has a crucial role in promotion of safety. The present study showed that injury and accident prevention behaviors were positively correlated with the total EI scale. This is consistent with three novel studies. *First,* Lu C and Kuo S (2016)[37] carried out a study in Taiwan to evaluate the moderating role of EI between job stress and safety behaviors. It revealed that EI positively influenced initiation and compliance

with safety behaviors. *Second,* aforementioned study of Fernandez-Abascal E and Martin-Diaz M (2015) [25] proved that EI was positively correlated with accident control behaviors. *Third,* Arnau-Sabatesa L et al (2012) [38] examined the predictive role of EI on risky driving behavior among Spanish drivers. They indicated that EI was negatively correlated with risky driving attitudes (speed, distraction, tendency to risk-taking and exhaustion). These findings featured that individuals with higher EI can perceive and appraise accidents associated risk and effectively regulate and manage their associated emotions and negative mood states and hence employed better accident control behaviors [8,11].

Recent evidence portrays a reciprocal relationship between EI and risk behaviors. The present study revealed a significant negative correlation between substance abuse behaviors (caffeine and drug misuse) and the total EI scale and specifically domains of emotions perception and expression, and emotions regulation. This result was congruent with two novel studies. *First,* aforesaid study by Fernandez-Abascal E and Martin-Diaz M (2015)[25] found a significant negative correlation between total EI skills and the risky behaviors mainly substance abuse. *Second,* Tomczak V (2010)[39] conducted an American study to assess the relationship between EI, delinquency and substance abuse among university students. It found that EI skills were significant predictor of substance abusive behaviors. Consequently, EI skills can foster individual's abilities for perceiving the risk, utilizing their emotions to facilitate though, regulating self-emotions based on processed emotional information to stand against interpersonal attribution and group pressure for engagement in such risk behaviors [7,10].

Specifically, in convenience to the present study; novel evidence suggested that emotions perception and regulation play basic role in risk taking behaviors specially drug use. Emotions perception is the hierarchical base for developing effective self-regulatory skills for impulse control to aid individuals in regulating their emotions and take carful decision based on careful analysis of the associated risk[40]. *First,* Janfaza M and Shirazi M (2015)[41] examined the predictive role of emotions regulation difficulties and self-control in susceptibility to addiction in Iran. They revealed that difficulty to engage in goal oriented behaviors, impulses control and lack of emotional awareness had significant positive correlation with drug use. *Second,* Melillo G (2014)[42] conducted a study in New York to examine the effect of EI on the relationship between negative mood and risk behaviors. The study postulated that emotions perception and regulation may be protective against risk decision making especially during the negative mood states.

Moreover, there are no available studies that directly linking EI and caffeine consumption but it widely reviewed in literature. Aside from, the known function of caffeine as short term cognitive enhancer through its indirect action on arousal, mood and concentration, it can trigger the secretion of adrenaline which is responsible for the "fight or flight" reaction in response to threat. Thus, caffeine consumption can hinder the individuals' ability for rational and thoughtful response or contributing to faster response in which emotions overrun behaviors. Besides, it may aggravate anxiety and irritability. It also can lead to numerous physical symptoms as increasing the potential for dehydration, headache and sleep disturbances. Consequently, irrational caffeine consumption can be considered as a silent killer of EI abilities [43-45].

Notably, the current study illustrated no significant correlation between EI and smoking behaviors. This was supported by two studies. *First,* Claros E and Sharma M (2012)[46] assessed the correlation between EI and alcohol abuse, marijuana and tobacco use among university students. They confirmed that tobacco smoke wasn't associated with EI. *Second,* an above-mentioned study of Brackett M et al (2004) [36] revealed that lower EI score couldn't predict smoking behavior.

Converse findings were portrayed by two studies. *First,* Abdollahi A et al (2015)[47] analyzed the role of EI as mediator between social anxiety and smoking. It proved a contrast relationship between EI and smoking which was positively correlated with social anxiety. *Second,* Ramya B (2014)[48] examined the relationship between EI and health behaviors among Indian adults. It revealed that the higher the EI capacities, the lower the individual's risk for engagement in smoking behaviors. Such contradiction between the present and the previous two studies may be ascribed to that merely 10.5% of the present study respondents were smokers and only 2.0% of them were habitual smokers. In addition, all of them reported smoking stoppage trial. Furthermore, the older age of the current study participants (22-59 years) than in those contradictory studies (20-28 years) where adulthood is a time of wisdom decision to lead a healthy life while youth period is the time of vulnerability to exploration and trial with lower risk perception and high peer pressure[40].

EI can also have a crucial role in managing life stress. The present study inferred that the total EI scale was positively correlated with stress management techniques. This is congruent with three novel studies. *First and second*, a previously mentioned study of Ali N and Ali O (2016)[24] and Mayuran L (2013)[49] who studied the impact of EI on stress management in Sri Lanka. Both depict that EI was positively related to stress managing techniques as praying, listening to music, tasks ordering, and communicating with others. *Third,* Gangai K and Agrawal M (2013) [50] analyzed the role of EI in managing stress among Indian employees. They concluded that EI help in restraining negative feelings such as anger, stress and anxiety in addition it instead helps individuals to focus on positive feelings such as empathy and confidence. Thus, emotionally intelligent individuals are assumed to have better coping with challenges of everyday life.

Emotional management abilities are pertinent to individuals' social competence through empathetic behaviors and building effective interpersonal relationships [11]. The current study exhibited that total health behavior scale had significant positive correlation with empathy and interpersonal relationship management domains of the EI scale. Similarly, a recent study by Garcia-Poole et al (2017)[51] assessed lifestyles and community and personal competences among Spanish adolescents. It explored a positive correlation between healthy lifestyles practices and participants' levels of empathy and community involvement. *Second,* Jacobson D and Melnyk BM (2011) [52] studied the psychosocial link of healthy behaviors and beliefs in obese children. The study revealed positive relationship between participant's' healthy lifestyle choices and empathetic behaviors however their body weight was negatively correlated with their social skills. *Third,* Watt R et al (2014) [53] examined health related behaviors and social relationship among adults in USA. The study showed that health promoting behavior was correlated with size of friendship networks. Consequently, emotionally-intelligent individuals not only have a self- regulatory skills but also they are more able to understand, communicate and relate effectively with others which foster interchanging of social knowledge about positive health behaviors headed by their emotional-mental schema of such behaviors so they are less prone to group pressure [7,52].

Evidence indicated that EI abilities can be moderated by certain personal characteristics. The present study findings verified that employees' EI abilities were significantly varied in relation to their age. Identical findings were reported by two studies; an Indian study by Pooja P and Kumar P (2016)[23] and Malaysian study by Kumar J and Muniandy B (2012) [54] who assessed the demographic factors influence on EI. Consequently, EI can be viewed as a skill which is upgraded with age and associated physical, cognitive and psychological development and life experiences. Otherwise, Thor S (2012)[55] found that EI wasn't significantly correlated with age. He studied the relationship between EI and work engagement in USA. This could be ascribed to the multidimensional nature of EI with availability of multiple measurement models (trait, ability, and mixed models) where trait EI viewed as personal feature unrelated to age [12,13].

The existing study designated that employees' EI abilities were significantly varied in relation to their educational level. Consistent findings were reported by two earlier listed studies by Vanishree M (2014)[22], and Kumar J. Muniandy B (2012)[56] which indicated that participants with graduate degrees had higher EI than those with less education. Thus, it can be supposed that highly educated individuals hold better EI abilities as an acquired cumulative experience through education and its accompanied work experience and social network [22,55].

5. Conclusion

The present study concluded that there was significant positive correlation between EI and health behavior (dietary habits, personal care/health responsibility, stress management, and accident and injury prevention) except smoking and physical exercise. A significant negative correlation was inferred between substance abuse and the total EI scale and its two subscales of emotions regulation and emotions perception and expression. Additionally, the total health behavior was positively correlated with both empathy and interpersonal relationship management.

6. Recommendations

Based on the previous findings, the following recommendation can be done:

- Targeting educational and training program about EI for public health promotion
- Develop EI hot lines to enhance population EI abilities
- Involve the EI skills in school curricula to build emotionally intelligent generations
- Further research on:-
    - The relationship between EI and various socio-demographic variables.
    - The relationship between empathy and health behavior and physical health status.
    - Experimental study to evaluate the effect of educational intervention about EI abilities on individuals' health behavior.

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