# Contribution of Psychosocial Factors in Unhealthy Dietary Behaviour Amongst Adolescents of Patiala, Punjab

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#### Abstract

Health risk-taking behaviour has been associated with health damaging behaviours such as unintentional injuries, violence, bullying, alcohol use, smoking, substance abuse, risky sexual behaviours etc. The present study aims to identify the predominant health risk-taking behaviour among adolescents and to examine the contribution of psychosocial variables in that specific domain. The sample of the study comprised of 500 adolescents (224 boys and 276 girls) in the age range of 15 to 18 years enrolled in 11<sup>th</sup> and 12<sup>th</sup> grade in the Humanities stream. Data was drawn randomly from different senior secondary schools in Patiala, Punjab. Questionnaires comprising Youth Risk Behaviour Surveillance System (YRBSS) and Resiliency scales for children and adolescent (RSCA), Trait emotional intelligence questionnaire (FSRQ) were used. Results revealed that unhealthy dietary behaviour (27%) was found to be present as predominant health damaging behaviour. This study also found sociability, introjected regulation, sense of relatedness, identified regulation, coercion, emotional reactivity, intrinsic motivation, emotionality and self-control to be significant predictors of unhealthy dietary behaviour.

Keywords: Adolescence, Health risk-taking behaviour, Resilience, Unhealthy dietary behaviour.

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#### Introduction

Health risk-taking behaviours are those behaviours that involve some potential for danger while also providing an opportunity to obtain some form of reward (Leigh, 1999). It is generally accepted that health risk-taking behaviours are undesirable in society and cause negative outcomes. The term "Health risk-taking behaviour" is associated with health-damaging behaviours such as substance abuse, risky sexual behaviours, homicidal and suicidal behaviours, violence, delinquency etc. Although many behaviours might be considered risky, the Centre for Disease Control and Prevention (CDC) has identified six health risk behaviours as being particularly destructive to the development of optimal health. These include: (a) unintentional injuries and violence, (b) tobacco use, (c) alcohol and other drug use, (d) sexual behaviours that contribute to unintended pregnancy and sexually unhealthy transmitted diseases. (e) dietarv behaviours, and (f) physical inactivity. These behaviours are often established in early childhood and may strengthen during the adolescent period.

Globally, adolescents form approximately 16% of the population. India, counted among one of the "youngest countries" of the world, is much above this global average, with adolescents accounting for nearly 21% of the total population. With such a large share of our population falling into the adolescent age group that shall eventually shape the future of our country, it is imperative that their specific needs and issues be investigated, and then addressed through targeted solutions. There has been very less work done in India, especially in Punjab, regarding investigating the reasons associated with the rise in unintentional injuries. substance abuse, STDs/STIs, suicides, violence, bullying, inadequate physical activity and diet among adolescents. Studies suggest that people who engage in any one risk-taking behaviour are likely to engage in another as well. The present research has been taken as the base for conceptualizing the contribution of psychosocial factors (resilience, trait emotional intelligence, parent-child relationship and peer relationship) in the health risk-taking behaviour of adolescents. Resilience refers to the process of overcoming the negative effects of risk exposure, coping successfully with traumatic experiences, and avoiding the negative trajectories associated with risks. Researchers have found adolescents resilient to stressful or negative life events are more optimistic, high

self-esteemed (Byrne, 2003) and show a positive affect (Scheier, Bootvin and Miller, 1999) as a result they are low on health risk-taking behaviours. Apart from resilience another important and much discussed variable in health risk-taking behaviour is emotional intelligence. Johnson et al. (2009) defined Emotional Intelligence (EI) as the ability to perceive, control and evaluate emotions. Several research findings accumulated that lower EI is related to health risk-taking behaviour or individual involvement in self-destructive behaviour. whereas higher EI is related to high prosocial behaviour, parental warmth, positive peer, and family relationships (Mayer et.al, 1999). Parental care tends to strengthen adolescents' resilience and their ability to avoid risk-taking behaviour. Lansford and colleagues (2014) found that interactive effects of parenting styles, peer affiliation and peer influencing behaviours are associated with the development of risktaking tendencies. It is vital to study the psychosocial factors which influence the development of any risky behaviour so that prevention and treatment may impact more than one outcome.

# **OBJECTIVES**

- 1. To identify the predominant health risk-taking behaviour of adolescents.
- 2. To study the contribution of resilience, trait emotional intelligence, parent-child relationship and peer relationship with health risk-taking behaviour.

# HYPOTHESES

The following hypotheses were formulated:

1. Construct of resilience, trait emotional intelligence dimensions, parent-child relationship dimensions would

contribute significantly to health risk-taking behaviour.

- (a) Resilience dimensions (sense of mastery and sense of relatedness) would contribute negatively whereas emotional reactivity would contribute positively in health risktaking behaviour.
- (**b**) Trait emotional intelligence dimensions (emotionality, sociability, well-being and selfcontrol) would contribute negatively in health risk-taking behaviour.
- (c) Parent-child relationship dimensions (warmth, structure, autonomy support) would contribute negatively whereas rejection, chaos and coercion would contribute positively in health risk-taking behaviour.
- (d) Peer relationship dimensions (external regulation and introjected regulation) would contribute positively whereas identified regulation and intrinsic motivation would contribute negatively in health risk-taking behaviour.

#### SAMPLE

The study was administered in selected senior secondary schools of Patiala, Punjab. The sample comprised of 946 adolescents (girls=502 and boys=444 in the age range of 15 to 18 years) enrolled in  $11^{\text{th}}$  and  $12^{\text{th}}$  grade in the Humanities stream. **Figure 1** depicts the distribution of sample and **Table 1** shows the socio-demographic of participants. Out of the total sample, only those adolescents (N=500, girls=276 and boys=224) were included in the study who were found to be average and high on health risk-taking behaviour. The goodness-of-fit test and socio-demographic profile of adolescents who participated in the study are given in **Table 2**.

Demographic Variables	Category	Ν	%
Condon	Girls	502	53%
Gender	Boys	444	47%
Educational Qualification	+1	737	78%
Educational Quantication	+2	209	22%
	15 years	85	9%
Age	16 years	397	42%
	17 years	359	38%

Table 1: Socio-demographic Profile of the Participants (N=946)

	18 years	105	11%
Family Status	Joint	283	30%
ranny Status	Nuclear	663	70%
Desidential Status	Rural	331	35%
Kesidential Status	Urban	615	65%
	Elder	189	20%
Position in the Family	Middle	350	37%
	Younger	407	43%

Figure 1: Distribution of the Sample (N=946)



Table 2: Socio-demographic Profile of the Participants after Identification (N=500)

Demographic Variables	Category	Ν	%	Chi square (χ <sup>2</sup> )	df	p value	
Condon	Girls	276	55%	0.02	1	0.00	
Gender	Boys	224	45%	0.02	1	0.90	
Educational Qualification	+1	416	83%	7.00	1	0.01**	
Educational Quantication	+2	84	17%	1.22	I	0.01***	
	15 years	36	7%				
A	16 years	163	33%	1.29	3	0.75	
Age	17 years	217	43%	1.28			
	18 years	84	17%				
Earraiter States	Joint	164	33%	1.45	1	0.25	
Family Status	Nuclear	336	67%	1.43		0.23	
Desidential Status	Rural	161	32%	1 71	1	0.25	
Residential Status	Urban	339	68%	1./1			
	Elder	109	22%		2	0.25	
Position in the Family	Middle	224	45%	2.42			
	Younger	167	33%				
** p<0.01							

As shown in **Table 2**, a chi-square test of goodness-of-fit was performed to determine

whether the proportion of categorical outcome is equal or not. Thus, it assesses whether socio-

demographic variables are likely to come from a specified distribution or not. A significant difference  $[\chi^2 (1, n=500) = 7.22, p <.01]$  in educational qualification has been found which indicates an alternate hypothesis is accepted i.e. there is a significant difference in educational qualification. This refers that based on educational qualifications +1 and +2 senior secondary school students were not equally distributed and found the largest difference among them. No significant difference was found on gender [ $\chi^2$  (1, n=500) = 0.02, p < .90], age [ $\chi^2$  (1, n=500) = 1.28, p < .75], family status  $[\chi^2 (1, n=500) = 1.45, p < .25],$ residential status [ $\chi^2$  (1, n=500) = 1.71, p < .25] and position of participant in the family  $[\chi^2]$  (1, n=500 = 2.42, p < .25]. It means the null hypothesis is accepted stating that no significant differences were observed between the age of girls and boys, their family status, residential status, and position in the family.

The following psychological measures were used:

- Youth Risk Behaviour Surveillance System (YRBSS by Centers for Disease Control and Prevention, 2017): YRBSS (2017) is used to monitor priority health risk behaviour that contributes markedly to the leading causes of death, disability, and social problems among youth. The construct includes the following dimensions: unintentional injuries, violence, bullying, suicidal behaviours, cigarette smoking, alcohol use, drug abuse, sexual risk-taking unhealthy dietary behaviour, behaviour, physical activity inadequate and psychobehavioural health risk. The measure was rated on different scale points (4-point, 5point, 6- point, 7 -point, 8- point) based on a Likert scale. A lower score on all domains indicates lower health risk-taking behaviour. The coefficient of reliability for the questionnaire determined by Cronbach's alpha reliability was .57.
- Resiliency scales for children and adolescents (RSCA by Sandra Prince-Embury, 2006): RSCA, 64 item resilience scale was used to assess adaptive outlook that employs hypothetical constructs to better understand the constant adaptation of the individual (Prince-Embury et. al., 2016). RSCA comprised of three global scales based

on the three-factor model of personal resiliency: Sense of Mastery (SOM), Sense of Relatedness (SOR) and Emotional Reactivity (REA). SOM includes 20 items of three optimism. self-efficacy subscales and adaptability, SOR is comprised of 24 items of four subscales trust, support, comfort and tolerance and REA is defined by20 items of three subscales sensitivity, recovery and impairment. The response format of the measure is a 5-point Likert type scale (0 =Never, 1 = Rarely, 2 = Sometimes, 3 = Oftenand 4 = Almost always). The coefficient of reliability is .894 determined by Cronbach's alpha reliability test.

- **Trait Emotional Intelligence Ouestionnaire** (Adolescent Short Form) - TEIQue-ASF (Cooper and Petrides, 2010): TEIQue-ASF is a simplified version of the adult form of the TEIQue, designed to measure trait emotional intelligence which covers four domains. The TEIOue-ASF comprised of 30 items rated on 7-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree) and are intended to yield scores on four domains: Well-being (6 items- 5, 9, 12, 20, 24, 27), Self-control (6 items- 4, 7, 15, 19, 22, 30), Emotionality (8 items: 1, 2, 8, 13, 16, 17, 23, 28), and Sociability (6 items- 6, 10, 11, 21, 25, 26). The four remaining items contribute to only the cumulative TEI score, thus 26 items related to the four dimensions used in the study. There are fifteen reverse-scored items which are 2, 4, 5, 7, 8, 10, 12, 13, 14, 16, 18, 22, 25, 26 and 28. Higher scores higher reflect well-being, self-control. emotionality, and sociability. The internal consistencies of the scale's scores in this sample are as follows: well-being = 0.52, selfcontrol = 0.52, emotionality = 0.63 and sociability = 0.59.
- Parent as a Social Context Questionnaire (adolescent form) - PSCQ (Ellen Skinner, Sandy Johnson, and Tatiana Snyder; 2005): PSCQ (adolescent version) consists of 24 items based on six dimensions. Each dimension is defined by four items: Warmth (1, 2, 3, 4), Rejection (5, 6, 7, 8), Structure (9, 10, 11, 12), Chaos (13, 14, 15, 16), Autonomy Support (17, 18, 19, 20) and Coercion (21, 22,

23, 24). The participants graded each statement on a scale of 1 (Not at all true), 2 (Not very true), 3 (Sort of true) or 4 (Very true). Higher scores on each construct indicate the exercise of that parenting behaviour is reported by the adolescent, e.g., higher scores on coercive parenting behaviour. The internal consistencies of the dimension scores in this sample are as follows: warmth = 0.68, rejection = 0.65, structure = 0.72 and coercion = 0.55.

 Friendship Self-Regulation Questionnaire -FSRQ (Ryan and Connell, 1989): The FSRQ comprises of 20 items rated on 7-point Likert scale from 1 (Not at all true) to 7 (Very true) and are intended to yield scores on four domains: External Regulation (5 items- 3, 7, 9, 15, 20), Introjected Regulation (5 items- 1, 5, 11, 14, 18), Identified Regulation (5 items-4, 8, 12, 16, 17), and Intrinsic Motivation (5 items- 2, 6, 10, 13, 19). Four independent scores were calculated by summing up and averaging the responses of each subscale's items. The reliability estimates of the FSRQ scale are found to be internal consistencies of the dimensions varying between 0.63 for EXR, 0.65 for INR, 0.75 for IDR and 0.73 for INM. The overall FSRQ reliability estimates exceed 0.89.

# PROCEDURE

The present study is a correlational design measuring the contribution of construct of resilience, trait emotional intelligence dimensions, parent-child and peer relationship on health risktaking behaviour. After seeking the consent of concerned officials of educational organizations for participation in the study, a brief session was conducted for participants to appraise the intent of the study. Questionnaires were administered and the students were identified as average and high on various domains of health risk-taking behaviour based on their scores on YRBSS. After identification, (Male=224 and Female=276) 500 students' data was used for further analysis.

# **RESULTS AND DISCUSSION**

Keeping in view the nature of the study, Percentage was calculated to identify the predominant health risk-taking behaviour (**Table 3**) and Stepwise Multiple Regression was computed to study the contribution of resilience, trait emotional intelligence, parent-child and peer relationship with health risk-taking behaviour in **Table 4 and 5**.

S.No.	Domains	Low	Average	High
1	Unintentional Injuries (UNN)	20%	67%	13%
2	Violence (VIO)	57%	31%	12%
3	Bullying (BUL)	55%	33%	12%
4	Suicidal behaviour (SUI)	70%	24%	6%
4.1	Suicidal Ideation (SUII)	60%	33%	7%
4.2	Suicidal Planning (SUIP)	72%	24%	4%
4.3	Suicidal Attempt (SUIA)	73%	24%	3%
5	Cigarette Smoking (SMO)	92%	2%	6%
6	Alcohol Use (ALC)	78%	17%	5%
7	Drugs Abuse (DRG)	51%	35%	14%
8	Sexual Risk-taking Behaviour (SRT)	92%	4%	4%
9	Unhealthy Dietary Behaviour (UDB)	37%	36%	27%
10	Inadequate Physical Activity (IPA)	18%	70%	12%
11	Psychobehavioural Health Risk (PHR)	45%	35%	20%

 Table 3 Percentage cases of Health Risk-taking Behaviour in Adolescents (N=946)



Figure 2: Percentage cases of various domains of Health Risk-Taking Behaviour

Table 3 and Figure 2 revealed percentages of various domains of health risktaking behaviour. The prominent high health risk behaviour in adolescents was unhealthy dietary behaviour (27%), psychobehavioural health risk (20%), drug abuse (14%), unintentional injuries (13%), violence (12%), bullying (12%) and inadequate physical activity (12%). The study also shows that 6% of the adolescents used smoking products, 5% have a habit of alcohol consumption and 4% of adolescents have experienced sexual risk-taking behaviour and are exposed to a high risk of teen pregnancies and sexually transmitted diseases (STDs). The predominant domain of health risk-taking behaviour in adolescents was observed to be unhealthy dietary behaviour. These findings are in line with research conducted by El-Ammari et al. (2020) on adolescents (in the age range of 14-19 years) by administering the Global School-based Health Survey (GSHS). The survey discovered that 46% of the participants skipped breakfast, 61% had inadequate consumption of fruits and vegetables and 28% consumed excessive quantities of fast food. Another study by Moreno et al. (2008) reported that 19% of adolescents aged between 15 and 16 years skipped breakfast. An Indian study conducted on adolescents via the Youth Risk Behaviour Surveillance Survey (YRBSS) found that a large percentage (88%) of adolescents regularly skipped breakfast (Chauhan & Rupani, 2021). A study by Anuradha, Priyadharshini & Patil, (2021) reported that adolescents were frequently skipping meals (54%) and consuming carbonated drinks (66%). The most common reason identified for skipping breakfast among adolescents was lack of time and/or appetite in the morning (Badrasawi, Anabtawi & Al-Zain, 2021). Another study conducted on Indian adolescents revealed cravings, sadness, boredom, stress, and tiredness were the reasons for unhealthy dietary practices (Jogi & Battalwar, 2021). Unhealthy dietary behaviours have been associated with many nutrition-related health problems, the most important of which are obesity and chronic diseases (Ford, Patel & Narayan, 2017).

 Table 4: Stepwise Multiple Regression Analysis for construct of Resilience, Trait Emotional

 Intelligence, Parent-child relationship and Peer relationship as predictors of Unhealthy Dietary

 Behaviour (N=500)

Madal	Model D D <sup>2</sup> Adjusted				Change Statistics					Т	Sig.	Collinearity Statistics
Model	ĸ	ĸ	$\mathbf{R}^2$	R <sup>2</sup> Change	df 1	df 2 F Sig. F Change Change Beta (β)		Beta (β)			Tolerance	
SOC	.419	.176	.174	.176	1	499	112.97	.000	431	-10.461	.000	.766
INR	.454	.206	.203	.031	1	498	20.508	.000	.362	6.546	.000	.425
REL	.484	.234	.230	.028	1	497	19.214	.000	170	-4.100	.000	.759

IDR	.505	.255	.250	.021	1	496	14.866	.000	138	-2.395	.017	.393
CRN	.524	.275	.268	.019	1	495	14.006	.000	.205	5.212	.000	.844
ERA	.533	.284	.276	.010	1	494	7.225	.007	.120	2.947	.003	.789
INM	.541	.292	.283	.008	1	493	5.818	.016	110	-1.998	.046	.427
EMO	.547	.299	.289	.007	1	492	5.257	.022	241	-4.386	.000	.431
SEC	.567	.321	.310	.022	1	491	16.979	.000	213	-4.121	.000	.488

**Predictor Variables:** Sociability (SOC), Introjected Regulation (INR), Sense of Relatedness (REL), Identified Regulation (IDR), Coercion (CRN), Emotional Reactivity (ERA), Intrinsic Motivation (INM), Emotionality (EMO), Self-control (SEC) **Criterion Variable:** Unhealthy Dietary Behaviour

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1392.539	9	154.727	27.479	.000
Residual	2939.288	491	5.631		
Total	4331.827	500			

Cable 5: ANOVA	for U	<b>Jnhealthy</b>	Dietary	<b>Behaviour</b>	(N=500)
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**Table 4** observed that stepwise multiple regression was conducted and found sociability, introjected regulation, sense of relatedness, identified regulation, coercion, emotional reactivity, intrinsic motivation, emotionality and self-control appeared as significant predictors of unhealthy dietary behaviour (criterion variable). Multiple correlation is found to be R=.567 which accounted for 32.1% of the variance in unhealthy dietary behaviour.

A perusal of table reveals multiple correlation (R) for 0.419 which is significant at 0.01 probability [F (1,499) = 112.97; p<0.01]. The regression coefficient ( $\beta$ ) of -0.431 with a t-value of -10.461 (p<0.01) shows a significant negative contribution of sociability in unhealthy dietary behaviour. The value of  $R^2$  is 0.176 which indicates that 17.6% of the variability is accounted for in unhealthy dietary behaviour by sociability. Sociability emerged as the strongest negative predictor. Sociability consists of assertiveness, emotional management, and social awareness. It is an important pathway through which an individual exercises the skill of negotiation in saying no to socially deviant behaviour such as unhealthy dietary behaviour (Zeeni et al., 2018).

Introjected regulation emerged as the next significant potential predictor, the value of multiple correlation (R) increased to .454, which is significant at 0.01 probability [F (1, 498) = 20.508; p<0.01)] and R<sup>2</sup> increased to .206, raising the joint contribution of these two variables in unhealthy dietary behaviour to 20.6%. The regression coefficient ( $\beta$ ) for the variable of

introjected regulation is 0.362 with a t-value of 6.546 (p<0.01), indicating that the variable of introjected regulation carries significant weight in prediction. The value of  $R^2$ change caused by the entry of introjected regulation is 0.031 shows that 3.1% of the variance in unhealthy dietary behaviour is due to introjected regulation. It has been found that introjected regulation has a positive contribution in predicting unhealthy dietary behaviour. Adolescents who scored high on introjected regulation yielded on their peers in decision making and thus, engaged in negative lifestyle practices such as unhealthy dietary behaviour (Kerin, Webb & Zimmer-Gembeck, 2019).

The next independent variable added to the model was sense of relatedness. With this addition value of R comes out to be .484, which is significant at 0.01 probability [F (1,497 = 19.214;p<0.01)]. The value of R<sup>2</sup> becomes .234, implying that these three variables i.e. sociability, introjected regulation and sense of relatedness jointly explain 23.4% of the variability in unhealthy dietary behaviour. The regression coefficient ( $\beta$ ) of -0.170 with a t-value of -4.100 (p<0.01) indicates that change caused by the addition of the variable of sense of relatedness is inversely significant. Thus, the obtained  $R^2$ change of .028 implies that 2.8% of the variability is accounted in unhealthy dietary behaviour is due to sense of relatedness. A study found that lack of connectedness and low emotional support result into poor eating patterns (Reichenberger et al., 2020). This indicates that a poor sense of relatedness with significant others leads to

maladaptive behaviour such as unhealthy dieting (King, 2015).

Another independent variable added to the model was identified regulation. The value of R increased to .505, which is significant at 0.01 probability [F (1,496) = 14.866; p<0.01)]. The value of  $R^2$  becomes 0.255, raising the joint contribution of sociability, introjected regulation, sense of relatedness and identified regulation in unhealthy dietary behaviour to 25.5%. The regression coefficient ( $\beta$ ) for the variable of identified regulation is -0.138 with a t-value of -2.395 (p<0.05), indicating that the variable of identified regulation carries significant inverse weight in prediction. The value of  $R^2$  change caused by the addition of variable of identified regulation is .021. This  $R^2$  change shows that 2.1% of the variance in unhealthy dietary behaviour is due to identified regulation. Individuals who are high on identified regulations engage in the activities that are self-rewarding hence, less likely to get influenced by their peers. Research has found that self-regulatory cognitions are negatively related to unhealthy dietary behaviour among adolescents (Kalavana, Maes & De Gucht, 2010).

Coercion emerged as the next significant potential predictor, the value of multiple correlation (R) increased to .524, which is significant at 0.01 probability [F (1, 495) =14.006; p<0.01)] and  $R^2$  increased to .275, raising the joint contribution of sociability, introjected regulation, sense of relatedness, identified regulation and coercion in unhealthy dietary behaviour to 27.5%. The regression coefficient ( $\beta$ ) for the variable of coercion is 0.205 with a t-value of 5.212 (p<0.01), indicating that the variable of coercion carries significant weight in prediction. The value of  $R^2$  change caused by the entry of coercion is 0.019 shows that 1.9% of the variance is accounted in unhealthy dietary behaviour. The existence of a coercive relationship with parents is one of the strongest predictors of risky behaviour in adolescents (Bor & Sanders, 2004). Coercive parenting relationship includes hitting, velling, scolding, threatening the child and generating unnecessary resistance. In a process to deal with coercive parenting adolescents indulge in emotional eating behaviour including unnecessary

and unhealthy food (junk food) in their diet (Musher-Eizenman et al., 2019).

The next independent variable added to the model was emotional reactivity. With this addition value of R comes out to be .533, which is significantat 0.01 probability [F (1,494 = 7.225;p<0.01)]. The value of R<sup>2</sup> becomes .284, implying that these variables i.e. sociability, introjected regulation, sense of relatedness, identified regulation, coercion and emotional reactivity jointly explain 28.4% of the variability in unhealthy dietary behaviour. The regression coefficient ( $\beta$ ) of 0.120 with a t-value of 2.947 (p<0.01) indicates that change caused by the addition of the variable of emotional reactivity is significant. Thus, the obtained  $R^2$  change of .010 implies that 1.0% of the variability in unhealthy dietary behaviour is due to emotional reactivity. Emotional reactivity refers to the tendency to experience frequent and intense emotional arousal. Research evidence suggested that emotionally reactive adolescents exhibit a pattern of emotional overeating which is usually unhealthy behaviour (Michels et al., 2012).

Another independent variable added to the model was intrinsic motivation. The value of R increased to .541 which is significant at 0.01 probability [F (1,493) = 5.818; p<0.05)]. The value of  $R^2$  becomes 0.292 raising the joint contribution of sociability, introjected regulation, sense of relatedness, identified regulation, coercion, emotional reactivity and intrinsic motivation in unhealthy dietary behaviour to 29.2%. The regression coefficient  $(\beta)$  for the variable of intrinsic motivation is -0.110 with a tvalue of -1.998 (p<0.05), indicating that the variable of intrinsic motivation carries a significant inverse weight in prediction. The value of  $R^2$  change caused by the addition of the variable of intrinsic motivation is .008 shows that 0.8% of the variance in unhealthy dietary behaviour is due to this variable of intrinsic motivation. The findings of empirical studies are in line with the findings of the current study (Verstuyf, Patrick, Vansteenkiste & Teixeira, 2012). An intrinsically motivated adolescent does not get influenced by outer forces like peer pressure. Instead, he/she tends to prevent unhealthy dieting (Ryan & Deci, 2000; Deliens et al., 2014).

Emotionality emerged as the next significant potential predictor, the value of multiple correlation (R) increased to .547, which is significant at 0.01 probability [F (1, 492) =5.257: p<0.01)] and  $R^2$  increased to .299, raising the joint contribution of sociability, introjected regulation, sense of relatedness, identified regulation. coercion. emotional reactivity. intrinsic motivation and emotionality in unhealthy dietary behaviour to 29.9%. The regression coefficient ( $\beta$ ) for the variable of emotionality is -0.241 with a t-value of -4.386 (p<0.01), indicating that the variable of emotionality carries a significant inverse weight in prediction. The value of R<sup>2</sup>change caused by the entry of emotionality is .007. This change in  $\mathbb{R}^2$  shows that 0.7% of the variance in unhealthy dietary behaviour is due to this variable of emotionality. Understanding emotional processes are essential to maintaining healthy behaviour. People with high emotionality can communicate their views effectively (Petrides & Furnham, 2009). Several shreds of research evidence have highlighted emotionality as a negative predictor of unhealthy dietary behaviour (Zhang, Wang, Wu & He, 2022).

Furthermore, self-control emerged as the next significant potential predictor, the value of multiple correlation (R) increased to .567, which is significant at 0.05 probability [F (1, 491) =16.979; p<0.01)]. The value of  $R^2$  increased to .321, implying that these nine variables i.e. sociability, introjected regulation, sense of relatedness. identified regulation, coercion. intrinsic motivation. emotional reactivity, emotionality and self-control jointly explain 32.1% of the variability in unhealthy dietary behaviour. The regression coefficient ( $\beta$ ) for the variable of self-control is -0.213 with a t-value of -4.121 (p<0.01), which indicates that change caused by the addition of the variable of selfcontrol is inversely significant. Thus, the obtained  $R^2$  change of 0.022 implies that 0.2% of the variability in unhealthy dietary behaviour is due to self-control. Dietary control and resistance, enactment of desire and long-term weight change were moderated by inhibitory control. Therefore, adolescents who are low in response inhibition were more likely to decrease unhealthy food desires and consume desired food i.e., unhealthy food.

The values of adjusted  $R^2$  for sociability, introjected regulation, sense of relatedness, emotional identified regulation, coercion, reactivity, intrinsic motivation, emotionality and self-control are .174, .203, .230, .250, .268, .276, .283, .289 and .310 respectively, showing that the model fits adequately to the population studied. As observed from coefficients table 4.19, all tolerance values are much above zero. Thus, on account of tolerance values, it is concluded that an average level of multicollinearity is present (tolerance = .766, .425, .759, .393, .844, .789,.427, .431 and .488) for sociability, introjected sense of relatedness, identified regulation. regulation. coercion, emotional reactivity, intrinsic motivation, emotionality and self-control respectively. **Table 5** reported that these variables entered into the model would have a significant impact on unhealthy dietary behaviour (F (9, 491) = 27.479, p < 0.01). A plethora of studies suggests that these variables contribute significantly in deviant behaviour such as unhealthy dietary behaviour (Junger & Van Kampen, 2010; Honkanen et al., 2012; Hofmann et al., 2014; Keller & Hartmann, 2016).

# Conclusion

In summary, our result suggests that prominent high health risk behaviour in adolescents was unhealthy dietary behaviour. The analysis of stepwise multiple regression is indicative that sociability, introjected regulation, sense of relatedness, identified regulation, reactivity, intrinsic coercion. emotional motivation, emotionality, and self-control were found to be significant predictors of unhealthy dietary behaviour. Furthermore, regression analysis focuses on understanding the strongest contribution of trait emotional intelligence in unhealthy dietary behaviour. The research brought forward the role of interventions and life education programmes in enhancing the emotional intelligence of the adolescents to promote adequate dietary behaviour.

# Implications

The findings recommend that trained counsellors need to mobilize the idea of healthenhancing factors to curb unhealthy dietary behaviour among adolescents. Frequent counselling sessions related to healthy eating habits and a positive attitude towards physical activity must be planned for every age group. Parents, teachers and caregivers need to make a collaborative effort to involve adolescent in healthy eating habits such as eating green vegetables, daily intake of fruits and juices. Parents should also ensure that their child receive the training on assertive skills to deal any kind of persuasion from their peers related to unhealthy dietary choices. It is thus necessary to constantly review the behaviour of adolescents to guide them appropriately in case of negative behavioural changes.

# Limitations & Recommendation for future research

The research must be viewed in light of study limitations. There is always scope for additional factors to be considered. Additional examples of factors may include attachment to neighbourhood, parenting, and individual identity etc. The sample consisted of adolescents (15-19 vears) only. These findings cannot be generalized to other age groups such as adults. A further limitation to the study is lack of specificity in our understanding of socio-demographic variables such as socio-economic status that represent a collection of different experiences in them. Future research might examine implications for specific health compromising behaviour along with specific health risk-taking behaviour and health protective behaviours.

# References

- Anuradha, R., Priyadharshini, S., & Patil, A. (2021). Lifestyle Behaviour among Undergraduate Medical Students in Tamil Nadu: A Cross-sectional Study. Journal of Clinical & Diagnostic Research, 15(10).
- Badrasawi, M., Anabtawi, O., & Al-Zain, Y. (2021). Breakfast characteristics, perception, and reasons of skipping among 8th and 9th-grade students at governmental schools, Jenin governance, West Bank. *BMC nutrition*, 7(1), 1-10.
- Bor, W., & Sanders, M.R. (2004). Correlates of self-reported coercive parenting of preschool-aged children at high risk for the development of conduct problems. *Australian and New Zealand Journal of Psychiatry*, 38(9), 738-745.

- Byrnes, J.P., Miller, D.C., & Schafer, W.D. (2003). Gender differences in risk taking: a meta-analysis. *Psychological Bulletin*, 125, 367–383.
- Chauhan, P.A., & Rupani, M.P. (2021). High-risk health behaviors predict depression among school-going adolescents: the need for integration of mental health with school health program in India. *Journal of community psychology*, *49*(6), 1891-1903.
- Deliens, T., Clarys, P., De Bourdeaudhuij, I., & Deforche, B. (2014). Determinants of eating behaviour in university students: a qualitative study using focus group discussions. *BMC public health*, *14*(1), 1-12.
- El-Ammari, A., El Kazdouh, H., Bouftini, S., El Fakir, S., & El Achhab, Y. (2020). Socialecological influences on unhealthy dietary behaviours among Moroccan adolescents: a mixed-methods study. *Public health nutrition*, *23*(6), 996-1008.
- Ford, N. D., Patel, S. A., & Narayan, K. V. (2017). Obesity in low-and middleincome countries: burden, drivers, and emerging challenges. *Annual review of public health*, 38, 145-164.
- Hofmann, W., Adriaanse, M., Vohs, K.D., & Baumeister, R.F. (2014). Dieting and the self-control of eating in everyday environments: An experience sampling study. *British journal of health psychology*, 19(3), 523-539.
- Honkanen, P., Olsen, S.O., Verplanken, B., & Tuu, H.H. (2012). Reflective and impulsive influences on unhealthy snacking. The moderating effects of food related selfcontrol. *Appetite*, 58(2), 616-622.
- Jogi, K.R., & Battalwar, R. (2021). A study to assess the snacking pattern among adolescents and young adults and its effect on the meal pattern and overall nutritional status. *International Journal of Home Science*, 7(2),116-120.
- Johnson, J., Gooding, P.A., Wood, A.M., Taylor, P.J., Pratt, D., & Tarrier, N. (2009). Resilience to suicidal ideation in psychosis: Positive self-appraisals buffer

the impact of hopelessness. *Behaviour* research and therapy, 48(9), 883-889.

- Junger, M., & van Kampen, M. (2010). Cognitive ability and self-control in relation to dietary habits, physical activity and bodyweight in adolescents. *International journal of behavioral nutrition and physical activity*, 7(1), 1-12.
- Kalavana, T.V., Maes, S., & De Gucht, V. (2010). Interpersonal and self-regulation determinants of healthy and unhealthy eating behavior in adolescents. *Journal of health psychology*, 15(1), 44-52.
- Keller, C., & Hartmann, C. (2016). Not merely a question of self-control: The longitudinal effects of overeating behaviors, diet quality and physical activity on dieters' perceived diet success. *Appetite*, 107, 213-221.
- Kerin, J.L., Webb, H.J., & Zimmer-Gembeck, M.J. (2019). Intuitive, mindful, emotional, external and regulatory eating behaviours and beliefs: An investigation of the core components. *Appetite*, 132, 139-146.
- Lansford, J.E., Laird, R.D., Pettit, G.S., Bates, J.E., & Dodge, K.A. (2014). Mothers' and fathers' autonomy-relevant parenting: Longitudinal links with adolescents' externalizing and internalizing behavior. *Journal of youth and adolescence*, 43(11), 1877-1889.
- Leigh, B.C. (1999). Peril, chance, and adventure: Concepts of risk, alcohol use and risky behaviour in young adults. *Addiction, 94*, 371–383.
- Mayer, J.D., Caruso, D.R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27, 267–298.
- Michels, N., Sioen, I., Braet, C., Eiben, G., Hebestreit, A., Huybrechts, I., ... & De Henauw, S. (2012). Stress, emotional eating behaviour and dietary patterns in children. *Appetite*, 59(3), 762-769.
- Moreno, L. A., Gonzalez-Gross, M., Kersting, M., Molnar, D., De Henauw, S., Beghin, L., Sjostrom, M., Hagstromer, M., Manios, Y., Gilbert, C.C., Ortega, F.B., Dallongeville, J., Arcella, D., Warnberg,

J., Hallberg, M., Fredriksson, H., Maes, L., Widhalm, K., Kafatos, A.G., & Marcos, A. (2008). Assessing, understanding and modifying nutritional status, eating habits and physical activity in European adolescents: the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) Study. *Public health nutrition*, *11*(3), 288-299.

- Musher-Eizenman, D.R., Goodman, L., Roberts, L., Marx, J., Taylor, M., & Hoffmann, D. (2019). An examination of food parenting practices: Structure, control and autonomy promotion. *Public health nutrition*, 22(5), 814-826.
- Petrides, K.V., & Furnham, A. (2009). Trait emotional intelligence questionnaire (TEIQue). *Technical Manual. London: London Psychometric Laboratory*.
- Reichenberger, J., Schnepper, R., Arend, A.K., & Blechert, J. (2020). Emotional eating in healthy individuals and patients with an eating disorder: evidence from psychometric, experimental and naturalistic studies. *Proceedings of the Nutrition Society*, 79(3), 290-299.
- Ryan, R.M., & Deci, E.L. (2000). Selfdetermination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.
- Verstuyf, J., Patrick, H., Vansteenkiste, M., & Teixeira, P.J. (2012). Motivational dynamics of eating regulation: a selfdetermination theory perspective. *International Journal of Behavioral Nutrition and Physical Activity*, 9(1), 1-16.
- Zeeni, N., Doumit, R., Abi Kharma, J., & Sanchez-Ruiz, M.J. (2018). Media, technology use, and attitudes: Associations with physical and mental well-being in youth with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing*, 15(4), 304-312.
- Zhang, J., Wang, Y., Wu, C., & He, J. (2022). The relationship between emotional intelligence and eating disorders or disordered eating behaviors: A metaanalysis. *Personality and Individual Differences*, 185, 111239.