





Assessment of risky decision making and associated socio-demographic and psychological factors in a group of young people

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ABSTRACT

Background: Risky behaviors often place young people in problematic situations. The aim of this study is to examine the factors that influence risky decision making in a group of young people studied.

Methods: Between 1 April and 30 July 2022 and through a remote questionnaire, the cross-sectional study included 204 young people, 26.47% of whom were likely to make high-risk decisions. Data were analyzed using SPSS statistics for Windows, version 16.0. Statistical significance was set at $p < 0.05$.

Results: Increased risk decisions in young adults were significantly associated with age (92.6%), violent environment (83.3%), education (53.7%), bulimia (48.1%), anorexia (11.1%), insomnia (72.2%), irritability (53.7%), depression (24.1%), suicidal thoughts (40.7%), fear of abandonment (48.1%), and trauma (63.3%) as well as toxic habits such as tobacco (55.6%), alcohol (64.8%), and drugs (50.0%).

Conclusions: Risky decision-making behaviors involve areas of the brain that undergo changes in early adulthood. Socio-economic, nutritional, and psychosocial factors are involved. It is therefore necessary to understand the associated psychological and biological reasons in order to adjust prevention.

Keywords: behavior, decision, risk-taking, vulnerability, young adult

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INTRODUCTION

Most countries face various challenges in developing their national policies, such as reducing crime and increasing risk-taking among young people. Just recently, the WHO stated that one in seven young people aged 10-19 suffer from a mental disorder that puts them at greater risk in everyday life. In addition, suicide is the fourth leading cause of death in this age group and drug use is increasingly common, including cannabis, which is the most commonly used drug by 14-15-year-old offenders. Thus, violent crimes, injuries, dropping out of school and involvement in criminal activities are the most common causes of death. These risky decisions sometimes lead to serious socioeconomic and behavioral problems [1, 2]. Several factors contribute to poor

decision-making, including biological changes, peer pressure, genetic differences, and environmental exposures, as well as cultural and family influences [1-3].

Neuroscientists have tried to justify these risky behaviors by anatomical and physiological changes in the brain, which undergoes important but necessary changes to reach maturity at age 25. It has been shown that the brain of a young person does not have all the neurophysiological means allowing it to make decisions with complete management of emotions. And therefore, that risk-taking does not stem from ignorance of the danger or from a feeling of invincibility but from a common process of development [1]. Thus, effective decision-making helps young people to gain experience, react to the social environment

Table 1. Assessment of reckless risk-taking decision-making among young people interviewed

Ricky situation	Completely disagree (zero points)	Agree with a partial reflection (one points)	Totally agree without thinking (two points)
Would you be willing to take a high-risk jump?	150 (73.5%)	44 (21.6%)	10 (4.9%)
Would you drive while intoxicated?	127 (62.3%)	26 (12.7%)	51 (25.0%)
Would you be willing to use dangerous illicit substances?	82 (40.2%)	101 (49.5%)	21 (10.3%)
Would you agree to antagonize the authorities?	46 (22.5%)	136 (66.7%)	22 (10.8%)

Note. Decision making: Reckless decision at risk: 54 (26.47%) & Thoughtful decision: 150 (73.5%)

and adapt to perilous events [2]. The objective of this study is to study decision-making among young people and to deduce the variables that influence poor decision-making among a group of young people.

MATERIALS AND METHODS

This is a cross-sectional study conducted among 204 young people between 15 and 30 years old by simple random sampling using a remote self-administered survey via Google Forms platform, between April and December 2022. Exclusion criteria were illiterate young adults and those with severe neuropsychiatric disorders.

The data collected included many variables such as age, sex, origin, marital status of parents, level of education, family income, etc. Data on addictive behaviors were sought, namely the consumption of tobacco, cannabis, or psychoactive substances. Thus, psychological disorders were informed such as mental pathologies, sleep disorders, eating disorders, toxic environment, personal experiences, and generalities on decision-making and finally risky situations were mentioned. In order to assess risky decision-making, four items on high-risk situations were considered. Depending on the participants' answer, a score of zero, one, and two was assigned to each situation, with a total score ranging from zero to eight points. After counting the four questions, the participants were classified into two groups. Category 1 (zero-four points): Thoughtful decision making and category 2 (five-eight points): Increased risk decision making. Anonymity and informed consent were obtained via an information sheet on the conduct of the survey.

Statistical Analyzes

Data were analyzed using SPSS version 29.0 (Inc., Chicago, IL, USA). A one-sample Kolmogorov-Smirnov test was used to analyze the normality of continuous variables. Chi-square test was used for categorical variables. The odds ratio (OR) 95% CI was used to show the strength of the relationship between the independent variables. Statistical significance was determined at $p < 0.05$.

RESULTS

A total of 204 young people were interviewed through an online self-administered questionnaire using simple random sampling. Most of the young people questioned were between 18 and 30 years old (88.23%), were female (52.84%),

had a higher level of education (70.58%), came from favored areas (70.09%) and their parents lived together (63.23%).

Analysis of the results in **Table 1** showed that 150 young people had a considered reflection on making a risky jump (73.5%), 127 disagreed with driving while intoxicated (62.3%), 82 did not agree to try to use psychoactive substances (40.2%) and 46 did not agree to take risks to alienate the authorities (22.5%). Referring to the total score calculated on the assessment of decision-making, 150 (73.5%) of the young people surveyed tend to make well-considered decisions, however, 54 (26.47%) among them tend to make high-risk decisions in difficult situations.

In this study, young people are likely to make bad decisions at risk are aged under 25 (92.6%), from privileged areas (83.3%), well educated (53.7%), lived in a violent environment (68.5%) and their parents are separated (61.12%), with a statistically significant difference compared to those whose decisions are well considered (**Table 2**).

The nutritional, psychological and environmental characteristics associated with decision-making are presented in **Table 3**. The study showed that nutritional disorders such as bulimia (48.1%) and anorexia (11.1%) are significantly associated with making rash decisions.

Also, the analysis of psychological factors showed that sleep disorders (72.2%), irritability (53.7%), signs of anxiety (57.4%), depressive signs (24.1%), suicidal thoughts (40.7), fear of abandonment (48.1%), childhood trauma (63.3%) are risk factors significantly associated with making risky decisions and thoughtless ($p \leq 0.034$). Regarding toxic habits, the study found that smoking (55.6%), alcohol consumption (64.8%) and drug use (50.0%) were observed as contributing factors. risk associated with making high-risk decisions.

DISCUSSION

The present study aimed at investigating risky decision-making among young people and to determine associated sociodemographic and psychological factors. The study was conducted on 204 young people between 18 and 30, of whom 26.47% were likely to take risky decisions and 73.5% tended to make reasonable decisions. A previous study showed similar results, with risky behaviors being common among young people this age [4].

Assessment of risky decision making and associated socio-demographic and psychological factors

Table 1. Socio-economic and demographic profile associated with risky decision-making among young people interviewed

Variables	Reckless decision at risk (n=54)	Thoughtful decision making (n=150)	Odd ratio	p-value
Age			8.100	0.017
18 to 25 years old	50 (92.6%)	130 (86.7%)		
25 to 30 years old	4 (7.4%)	20 (13.3%)		
Gender			0.770	0.411
Female	26 (48.1%)	82 (54.7%)		
Male	28 (51.9%)	68 (45.3%)		
Studies after A level			2.800	0.001
A level + 1	25 (46.3%)	35 (23.3%)		
A level + 3 & more	29 (53.7%)	115 (76.7%)		
Area of origin			0.376	0.013
Disadvantaged areas	9 (16.7%)	52 (34.7%)		
Favored areas	45 (83.3%)	98 (65.3%)		
Parental marital status			0.389	0.003
Married	21 (38.9%)	108 (72.0%)		
Separated	33 (61.1%)	42 (28.0%)		
Extracurricular activity			0.930	0.821
Yes	30 (55.5)	86 (57.3)		
No	24 (44.5)	64 (42.7)		
Family violence			2.009	0.036
Yes	37 (68.5)	79 (52.6)		
No	17 (31.5)	71 (47.4)		

Table 3. Nutritional, psychological, & environmental characteristics associated with risky decision-making among young people interviewed

Variable	Bad decision making at risk (n=54)	Thoughtful decision making (n=150)	Odd ratio	p-value
Nutritional disorders				
Anorexia	26 (48.1)	47 (31.3)	2.035	0.027
Bulimia	6 (11.1)	2 (1.3)	9.250	0.002
Hyperphagia	20 (37.0)	58 (38.7)	0.933	0.833
Psychological disorders				
Sleeping troubles	39 (72.2)	79 (52.7)	2.337	0.013
Irritability	29 (53.7)	38 (25.3)	3.419	0.001
Signs of anxiety	31 (57.4)	48 (32.0)	2.864	0.001
Depressive signs	13 (24.1)	18 (12.0)	2.325	0.034
Suicidal thoughts	22 (40.7)	38 (25.3)	2.026	0.033
Feeling of regret	41 (75.9)	104 (69.3)	1.390	0.360
Impulsivity	28 (51.9)	70 (46.7)	1.230	0.513
Fear of death	13 (24.1)	40 (26.7)	0.872	0.709
Fear of abandonment	26 (48.1)	46 (30.7)	2.099	0.021
Fear of failure	34 (63.0)	110 (73.3)	0.618	0.152
Fear of the future	24 (44.4)	81 (54.0)	0.681	0.228
Childhood trauma	55 (63.3)	34 (37.0)	2.936	0.001
Toxic habits				
Smoking	30 (55.6)	49 (32.7)	2.577	0.003
Alcohol consumption	35 (64.8)	49 (32.7)	3.797	0.001
Drug use	27 (50.0)	30 (20.0)	4.000	0.001

This survey shows that an intersection of multiple socio-demographic and psychological factors is involved in decision-making at risk among the young people surveyed. These results are consistent with those of the existing

literature [2, 4-6]. The study also shows that young people under 25 are likely to make riskier decisions. Similar studies show that neurobiological changes at this age influence their risky behavior [5].

Neuroanatomical studies have shown that cognitive control in young people enables long-term planning of actions and resistance to automatic and impulsive responses. It can therefore be used to curb certain impulsive and thoughtless behaviors [7]. Other studies have shown that before the age of 25 there are changes in the number of receptors, synaptic density and myelination in the frontal cortex, an area critical for action planning, motivation, impulsivity, reward, and other complex functions [8].

On the other hand, this study shows that most young people from a violent social and disadvantaged family background are more exposed to risky decisions. Recent work suggests that risk taking is the result of heightened sensitivity to emotional stimuli and the social environment, including social comparison with peers, which leads them to take increased risks [2]. Studies have shown that family behavior, peers, gender differences, personality, cultural background, social factors as well as physiological factors influence risk taking [5].

In this study, risky decision-making is driven by the consumption of tobacco, alcohol, and psychoactive substances. These substances can exacerbate the propensity for poor risky decision-making. Studies have shown that young people with drug addiction are more likely to engage in a variety of risky behaviors [9]. As a result, the immature cognitive system, which governs impulse control, may be less able to exert behavioral control in the face of addictive substances and emotional stimuli [5].

Delinquency, drug addiction, risky sexuality and reckless behavior are thus considered to be indicators of a propensity to put oneself in danger and to deviate from social conventions.

Findings like this study show that risky decision-making and behavioral addictions are associated with anxiety, depression, suicidal ideation, and other psychological problems [5, 10].

As for eating disorders, the study shows that bulimia and anorexia are significantly associated with considered risky decision-making. Previous studies have shown that eating disorders may be underpinned by differences in decision-making [11].

CONCLUSIONS

Risky behaviors involve areas of the brain that undergo developmental changes during puberty and early adulthood. A sharp increase in risky behaviors has been confirmed among young people today. Many researchers claim that risky behaviors are interrelated and can coexist in the same individual. Socio-economic, nutritional, and psychosocial factors are involved. It therefore seems necessary to understand the associated psychological and biological reasons to adjust an adequate prevention.

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Ethics declaration: The authors stated that this study does not compromise the health or rights of human beings. The protocol was approved by the ethics committee of the Marrakech provincial health department (Ministry of Health and Social Protection Marrakech-Safi) on March 9, 2022. The authors further stated that respect, dignity, integrity, and the right to anonymity were the watchwords throughout this survey. No information in the questionnaire can be associated with an individual's name. This is a determining factor that was mentioned in the questionnaire, as was the objective of this study. Every precaution has been taken to ensure the privacy and confidentiality of the personal information of each person involved. In the same way, no individual was forced to answer the questionnaire. All individuals were provided with a description of the objective, methods, sources, and any other aspects relevant to the realization of our study.

Declaration of interest: No conflict of interest is declared by authors.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

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