



Texto & Contexto - Enfermagem

ISSN: 0104-0707

ISSN: 1980-265X

Universidade Federal de Santa Catarina, Programa de Pós
Graduação em Enfermagem

Modeste, Narsha; Hamilton, Hayley
EXPLORING ADOLESCENTS' PERCEPTION OF HARMS AND BENEFITS
ASSOCIATED WITH MARIJUANA USE IN TRINIDAD AND TOBAGO
Texto & Contexto - Enfermagem, vol. 28, Esp., e2103, 2019
Universidade Federal de Santa Catarina, Programa de Pós Graduação em Enfermagem

DOI: <https://doi.org/10.1590/1980-265X-TCE-CICAD-21-03>

Available in: <https://www.redalyc.org/articulo.oa?id=71465278018>

- How to cite
- Complete issue
- More information about this article
- Journal's webpage in redalyc.org

UABEM
redalyc.org

Scientific Information System Redalyc
Network of Scientific Journals from Latin America and the Caribbean, Spain and
Portugal

Project academic non-profit, developed under the open access initiative

EXPLORING ADOLESCENTS' PERCEPTION OF HARMS AND BENEFITS ASSOCIATED WITH MARIJUANA USE IN TRINIDAD AND TOBAGO

Narsha Modeste¹ 
Hayley Hamilton² 

¹University of the Southern Caribbean, Department of Psychology. Saint Joseph, Trinidad and Tobago

²University of Toronto. Toronto, Canada

ABSTRACT

Objective: to explore the perception of harms and benefits of marijuana use and adolescents' intention to use within the context of regulatory changes.

Method: a multi-centric quantitative cross-sectional survey. The survey incorporated two public co-educational secondary schools from which a total of 268 (133 males; 135 females) adolescents from age 15 to 17 were studied. Convenience sample was used to obtain the participants from forms 3 through 5 and administer consent forms and questionnaires.

Results: From the sample studied most adolescents reported that they do not use marijuana. The study found an association between adolescents' perception of harms and benefits of marijuana and marijuana use. It also highlighted that most adolescents stated that marijuana should be used for medical and/recreational purposes.

Conclusion: further research is needed incorporating a larger sample of schools to establish conclusive statements however these findings suggest that school demand reduction strategies should seek to be as comprehensive and tailored as possible when addressing adolescents.

DESCRIPTORS: Cannabis. Adolescents. Street Drugs. Education. Marijuana use.

HOW CITED: Modeste N, Hamilton H. Exploring adolescents' perception of harms and benefits associated with marijuana use in Trinidad and Tobago. *Texto Contexto Enferm* [Internet]. 2019 [cited YEAR MONTH DAY]; v.28(Spe):e2103. Available from: <http://dx.doi.org/10.1590/1980-265X-TCE-CICAD-21-03>

INVESTIGANDO LA PERCEPCIÓN DE LOS DAÑOS Y BENEFICIOS DE LOS ADOLESCENTES RELACIONADOS AL USO DE LA MARIHUANA EN TRINIDAD Y TOBAGO

RESUMEN

Objetivo: explorar la percepción de los daños y beneficios del uso de la marihuana y la intención de los adolescentes de usarla en un contexto de cambios regulatorios.

Método: encuesta multicéntrica, multicéntrica y transversal. El estudio incluyó dos escuelas secundarias mixtas públicas, de las cuales participaron 268 adolescentes (133 hombres y 135 mujeres) de 15 a 17 años. Se utilizó el muestreo por conveniencia para obtener participantes en los formularios 3 a 5 y para administrar formularios de consentimiento y encuestas.

Resultados: de la muestra estudiada, la mayoría de los adolescentes reportó no consumir marihuana. El estudio encontró una asociación entre las percepciones de los adolescentes sobre los daños y beneficios de la marihuana y su uso. También señaló que la mayoría de los adolescentes dijo que la marihuana debería usarse con fines médicos y/o recreativos.

Conclusión: se hace necesario más investigaciones que incorpore una muestra más grande de escuelas para realizar afirmaciones concluyentes; no obstante, estos hallazgos sugieren que las estrategias de reducción de la demanda de las escuelas deben esforzarse por ser lo más completas y personalizadas posibles para abordar a los adolescentes.

DESCRIPTORES: Cannabis. Adolescentes. Drogas de la calle. Educación. Uso de la marihuana.

EXPLORANDO A PERCEPÇÃO DOS ADOLESCENTES SOBRE DANOS E BENEFÍCIOS ASSOCIADOS AO USO DE MACONHA EM TRINIDAD E TOBAGO

RESUMO

Objetivo: explorar a percepção de danos e benefícios do uso de maconha e a intenção dos adolescentes de usá-la no contexto de mudanças regulatórias.

Método: pesquisa transversal quantitativa multicêntrica. A pesquisa incorporou duas escolas públicas de ensino médio coeducacionais, das quais um total de 268 (133 homens e 135 mulheres) adolescentes de 15 a 17 anos foram estudados. Amostra de conveniência foi usada para obter os participantes dos formulários 3 a 5 e administrar formulários de consentimento e os questionários.

Resultados: Da amostra estudada, a maioria dos adolescentes relatou não usar maconha. O estudo encontrou uma associação entre a percepção dos adolescentes sobre os danos e benefícios da maconha e seu uso. Também destacou que a maioria dos adolescentes afirmou que a maconha deveria ser usada para fins médicos e/ou recreativos.

Conclusão: Mais pesquisas são necessárias incorporando uma amostra maior de escolas para estabelecer declarações conclusivas, entretanto, esses achados sugerem que as estratégias de redução da demanda escolar devem procurar ser tão abrangentes e adaptadas quanto possível ao abordar adolescentes.

DESCRITORES: Cannabis. Adolescentes. Drogas de Rua. Educação. Uso da maconha.

INTRODUCTION

Adolescence is marked with considerable transitions and changes in both physiological and mental domains. Representing approximately 20% of the population in most countries, adolescents play important economic, educational and social roles in the future of their societies.¹ This stage of life contributes to the development of personal identity, acquisition of skills and learning to differentiate between positive and negative behaviors. Adolescents are more prone to risk-taking behavior, which is not necessarily an undesirable characteristic as the ability to take risk is needed to increase autonomy and decision-making.²

Studies show that sensation seeking, which peaks in adolescence, is associated with participation in a range of risky activities by adolescents, including using psychoactive substances.² One particular study³ found that risk-taking behaviors increase in the presence of peers – with two possible explanations being that adolescents generally spend more time in groups and neural circuitry related to reward processing increases when they are among peers thereby making an experience more pleasurable.

Marijuana use is more prevalent than tobacco use among secondary school students in the Caribbean.⁴ A recent article published by the National Institute of Drug Abuse (NIDA) provides evidence on negative short and long-term effects of marijuana use on the health of adolescents.⁵

In 2012, the global mortality rate related to drug use was 40 persons per million among the population (15-64 years); 3.5-7% of this population (which includes older adolescents) has used an illicit drug at least once, most often marijuana.⁶ Marijuana is perceived by this population as the illicit drug causing the least harm. Despite the perception of marijuana use as involving low risk, treatment admissions for marijuana users in Latin American and Caribbean countries have increased from 24 to 40% in recent years.⁷

The World Health Organization (WHO) has recognized that most health problems during adulthood are the consequences of health-compromising behaviors during adolescence, when the brain is still developing and acquiring skills for the future. Specifically, the morbidity rates related to many non-communicable diseases are linked to unhealthy behaviors during adolescence such as the use of tobacco, alcohol and psychoactive substances.¹ Early and regular marijuana use predicts an increased risk of marijuana addiction. Such patterns also pose an increased risk for the use of other illicit drugs.⁷ Individuals who initiate use in adolescence are approximately two to four times as likely to have symptoms of marijuana dependence within two years after first use compared with those who begin use in adulthood.⁸

An estimated 1.6-7.6% of persons use marijuana in the Caribbean region.⁹ The disability adjusted life years (DALYs) for marijuana is 0.2% and it is associated with effects such as motor vehicle accidents, drug induced-psychotic symptoms, risk of dependence, and psychotic disorders. The exact mortality and morbidity for Trinidad and Tobago as it relates to drug use/dependence is difficult to estimate, however the phenomenon is directly (and indirectly) related to mental, social and physical health issues.

According to the most recent secondary school survey in Trinidad and Tobago,¹⁰ the prevalence of alcohol use was 82.08% (lifetime), 62.6% (past year), and 48.23% (past month); the prevalence of tobacco use was 28.86% (lifetime), 11.36% (past year), and 5.61% (past month); and the prevalence of marijuana was 12.09% (lifetime), 6.44% (past year), and 2.70% (past month). The survey also revealed that marijuana use among adolescents is related to behavioural problems and repeated years in school, and that 14.39% of students report easy access to the drug.

There is a lack of current research on adolescents' perception of harms and benefits of marijuana use in Trinidad and Tobago. However, the National Drug Council has recently conducted an online survey on attitudes towards marijuana which includes the view of adolescents. The findings from this

study have not yet been published. Nevertheless, some previous studies highlighted that adolescents use drugs (including marijuana) for different reasons. One analysis¹¹ found that adolescents that have been admitted to juvenile delinquency facilities use drugs for the following reasons: abuse, peer pressure, family stress and financial stress. Also, 26.6% of respondents at one particular institution initiated drug use as early as age 5 and the messages that adolescents receive at home or through the media influences their perception of a drug.

According to the WHO Mental Health Plan 2013-2020, adolescents are among the most vulnerable groups in society with an increased risk of mental health problems and a risk of first exposure to substance use. More than 50% of mental health disorders in adults develop by the age of 14, so prevention and promotion strategies should be implemented among school-aged adolescents to teach them about the risks related to substance use.¹ Within the context of drug use worldwide, especially among adolescents, the WHO developed the Global School-Based Student Health Survey. Trinidad and Tobago conducted the survey in 2011, and the results revealed that among youth aged 13-15, 7.4% had tried marijuana at least once; of these, 77.2% had first tried it before the age of 14.¹²

The high rates of adolescents' first use of marijuana before age 14 is a growing concern, given that this age of onset is related with an increased risk of abuse and dependence in adulthood, compared with those who first tried marijuana after the age of 18.¹⁴ Some health risks associated with marijuana use are respiratory, motor, mental, and cardiovascular effects; it may also cause psychotic symptoms and increase the risk of lung cancer, immune deficiency, and decreased fertility.¹³⁻¹⁴

According to the Organization of American States (OAS), two factors could explain the trend of marijuana consumption among adolescents: decreasing perception of risk related to experimenting with marijuana and easier access.¹⁵ Previous studies have reported that when the perception of risk declines, the use of marijuana increases and *vice versa*.¹⁵⁻¹⁶ One study reported that adolescents who perceived marijuana use as involving less risk were twice as likely to use marijuana.¹⁷ However, another study¹⁸ showed that risk perception and use were contingent on other social factors like visiting friends, going to parties and bars etc.

Research conducted in the United States has also revealed that a lower perceived risk of marijuana consumption leads to increased use. Some evidence suggests that decreased risk perception and increased availability may increase the consumption of marijuana among adolescents.⁷ The new regulatory framework in the United States (specifically in Alaska, Colorado and Washington) and in Uruguay make the use of recreational marijuana legal under certain restrictions and may engender changes in adolescent drug use.⁷ To date, no studies have explored the effects of these legislative changes on individuals and society, especially in adolescents.

Marijuana use, sale and production are illegal in Trinidad and Tobago and all other Caribbean countries,¹⁹ however in February of 2015 marijuana was decriminalized in Jamaica, with possession of up to 2 ounces resulting in a small fine by law enforcement officers.²⁰ This legislative change may take effect in other Caribbean countries like Trinidad and Tobago since discussions have already commenced. As such, research on vulnerable groups like adolescents is useful since increased availability may increase youth initiation.⁶

This study investigated the perception of harm and benefits related to marijuana use among adolescents and how regulatory changes may affect the intention of marijuana use. The purpose of this research is to explore the perception of harms and benefits of marijuana use and adolescents' intention to use within the context of regulatory changes.

METHOD

This study is a multi-centric, quantitative cross-sectional survey that was conducted in Trinidad and Tobago and eight other countries. The participants for this study comprised of 268 public secondary school students between the ages of 15-17 years from two secondary schools within one school district in Trinidad.

Sample selection was based on age rather than grade. The students were selected in three stages: 1. Selection of tertiary units; 2. Selection of secondary units and; 3. Selection of primary units. The tertiary unit was the selection of the secondary school location. In this case, convenience sample method was used. The researcher chose the school district within closest proximity. This happened to be in an urban area. In selecting the secondary units there were only two public secondary schools in the district selected therefore both were chosen since one would not have provided the required amount of students for the research.

With respect to the primary units, students were selected based on availability. Once they met the age criteria they were given a consent form and asked to return said form to the school's office. After all the consent forms were collected, the questionnaires were administered in students' classrooms. Oversampling was employed for distribution of both the consent forms and questionnaires, in the end 134 students were selected from each secondary school. Overall 133 males were selected compared to 135 females from both secondary schools.

The instrument that was used to collect data is an amalgamation of scales from three instruments, namely: a) Inter-American Drug Use Data System (SIDUC) Secondary Students School Survey; b) Monitoring The Future (MTF); and, c) the Benthin Risk Perception Measure.²² A description of each scale is given below:

The SIDUC is a standardized methodology created for obtaining data, forming explanatory concepts, and supporting responses to address psychoactive substance use across Americas and the Caribbean.²¹ Ten items from this questionnaire were used, which served as a standardized measure: three questions collected demographic data about sex, age and grade; and seven items assessed marijuana use (lifetime, past-12 months and past 30 days), along with frequency of smoking marijuana and age of onset.

The MTF is an annual survey of the lifestyles and values of youths; designed to explore changes in important values, behaviours, and lifestyle orientations of contemporary American youth.¹⁶ The current study included three of its items that explore a general perception of harm related to experimental and frequent marijuana use, scored using a five-point scale. One item that asks about intentions to use marijuana within the context of regulatory changes and one for medical marijuana were included.

This measure uses a seven-point scale to assess the perceived risks and benefits of various behaviors. It has been used widely in studies exploring perception of risk, harm and benefits, most of which have reported Cronbach alphas over 0.70.^{2,6,22-23} For this study, a slightly modified version was used to investigate participants' perceptions about harm and benefits of smoking marijuana. This modified version consisted of eleven questions: eight items from the original scale and three additional items. These questions were combined to make a continuous measure.

Data was analyzed using descriptive and inferential statistics. Descriptive statistics were used to describe demographic data and address research questions on prevalence; and inferential analyses were used to explore relationships. The main descriptive statistical procedures that were used are frequencies and percentages, and the main inferential statistic is χ^2 . In particular, perception of harm and benefits of marijuana use and lifetime, past year and past month prevalence were analyzed using frequencies, percentages and crosstabs. The relationship between perception of harm and

benefits of marijuana and marijuana use were analyzed using correlations, crosstabs and chi-square. The association between the perception of harm/benefits and intention to use within the context of regulatory changes were analyzed using frequencies, percentages and crosstabs.

RESULTS

The following demographics (and relevant frequencies) for the study were noted. The male to female ratio was just about even with 135 female and 133 male respondents. Forty-five point five percent (45.5%) were 15 year olds, 39.6% were 16 year olds and 14.2% were 17 year olds. Most of the respondents were either in form 3 or 4 (38.4% and 41.4% respectively). The following chart indicates marijuana use by closest friends. It shows that most (70%) of the respondents have close friends who use marijuana (Figure 1).

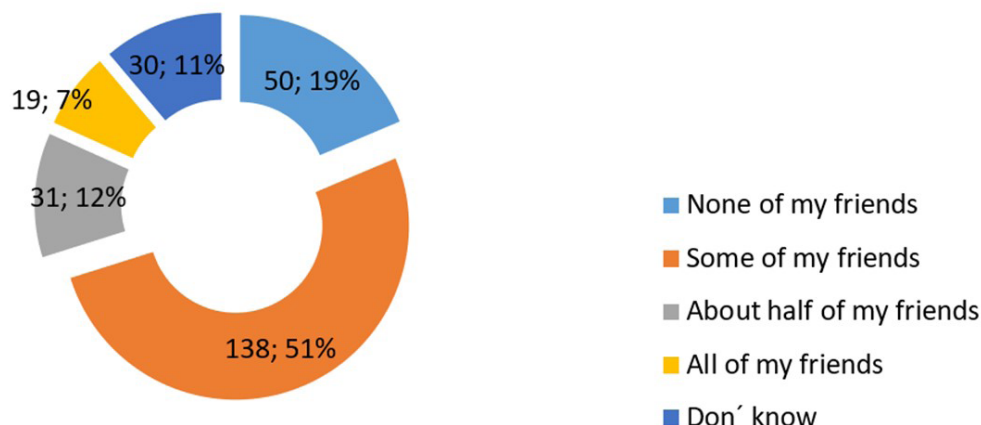


Figure 1 – Use of marijuana by closest friends. St. Joseph, Trinidad, 2014.

As it relates to the research objective for prevalence, the following table (Table 1) shows the frequencies for marijuana use, including lifetime, past year and past month uses of marijuana. This table indicates that about 1/3 of the respondents have used marijuana at least once in their lifetime. When further comparisons were done based on gender, it showed that of the 87 respondents that have used marijuana 56.3% of them were male while 43.7% of them were female. Results also indicated that the age of onset for the respondents ranged from age 5 through 16, with most of the respondents trying marijuana at 14 or 15 years.

Table 1 – Lifetime, past year and past month prevalence of marijuana use. St. Joseph, Trinidad, 2014 (n=268).

	Lifetime n (%)	Past Year n (%)	Past Month n (%)
No	181 (67.5)	192 (71.6)	214 (79.9)
Yes	87 (32.5)	76 (28.4)	54 (20.1)
Total	268	268	268

For the research objective to evaluate the perception of harm from using marijuana in adolescents, the following was noted. Perception of harm included both to self and to others. Average harm showed a mean of 3.2 and a mode of 3 (multiple modes existed, with 3 being the smallest value) from the scale that was used. The results indicated that most of the respondents were unsure (25%) whether smoking marijuana was harmful to themselves, while 15.3% indicated that they were definitely at risk of harm and 10.4% indicated that they were definitely not at risk of harm. As it relates to harm to others, 28% of the respondents thought that their friends would definitely be at risk of harm, 21.3%

were unsure while 3% of the respondents indicated that their friends would definitely not be at risk of harm if they smoked marijuana.

The respondents were also asked about the risk of marijuana use in relation to frequency and the following was reported in Figure 2. Most of the respondents only saw great risks associated with marijuana when it is used regularly.

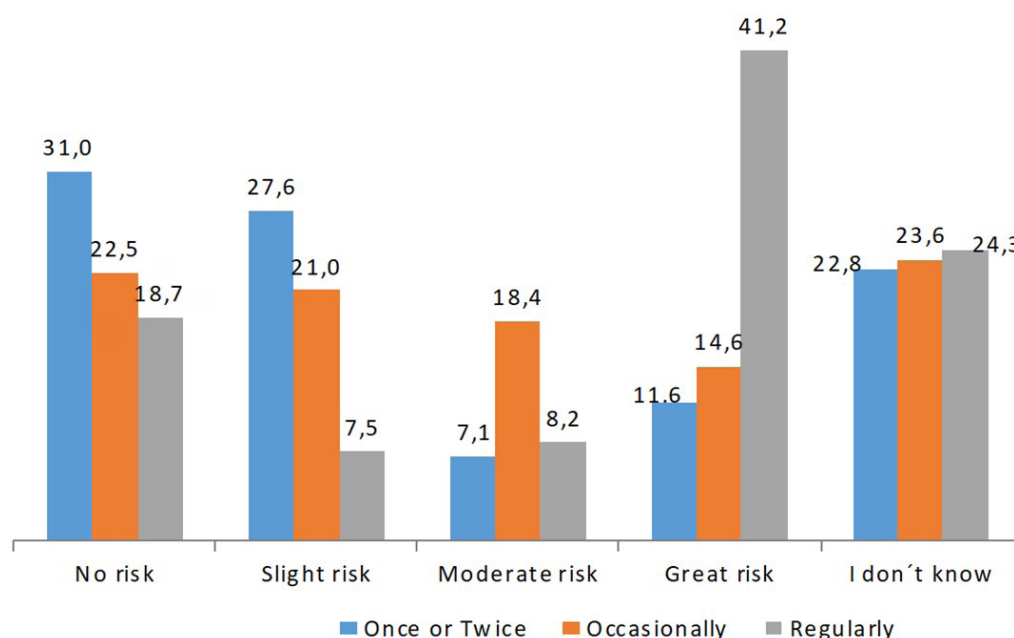


Figure 2 – Contrasting Risks associated with Frequency of Marijuana use (% values), St. Joseph, Trinidad.

For the research objective to evaluate the perception of benefits from using marijuana, the following was observed. Average benefits showed a mean of 3.6 with a mode of 4 from the scale that was used. On whether adolescents thought that smoking marijuana would result in admiration by their friends, 19.8% indicated that their friends would admire (10.1%) or greatly admire (9.7%) them. A significant amount of respondents (43.7%) were unsure as to whether the benefits of marijuana were greater than the risks, while 13% thought that the benefits were greater (6.7%) or much greater (6.3%) than the risks. When asked whether smoking marijuana helps them cope with emotional difficulties, 23.1% of the respondents indicated that marijuana helps. Only 8.9% of respondents thought that smoking marijuana would improve physical well-being while 34% indicated that it would definitely not improve academic performance.

For the research objective to look at the association between marijuana use and perception of harm and benefits, the following results were observed. Before this analysis was done, it should be noted that the researcher eliminated two items on the Benthin Scale for perception of harm in order to maintain a stronger Cronbach's alpha. Therefore, the average perception of harm was calculated without two of the original items. When a Chi-square test was done to analyze perception of harm and marijuana use, the results showed $\chi^2(2)=17.299$, $p<.05$. This indicates that there is a relationship between perception of harm and marijuana use.

Perception of benefits (as an average score) was also analyzed with marijuana use. The results of this test similarly showed a statistically significant outcome: $\chi^2(2)=19.715$, $p<.05$. This indicates that there is a relationship between perception of benefits and marijuana use. The researcher concludes based on this sample that perception of harms and benefits of marijuana is associated with marijuana use.

Table 2 – Comparison on gender, intention to use and uses of marijuana. St. Joseph, Trinidad, 2014 (n=268).

	Male	Female
Use of marijuana		
Not use it even if it were legally available	47.4%	54.8%
Try it	25.6%	27.4%
Use it about as often as I do now	9.8%	2.2%
Use it more often than I do now	12.8%	8.1%
Use it less often as I do now	1.5%	0.7%
Don't know	3.0%	6.7%
Intention to use		
Should not be used at all	18.0%	22.2%
Should be used for medical purposes	35.3%	47.4%
Should be used for recreational purposes	4.5%	2.2%
Should be used for recreational and medical purposes	23.3%	21.5%
Don't know	18.8%	6.7%

Finally, the following was noted for the research objective to explore the association between the perception of harm/benefits, demographic variables and the intention to use in the context of regulatory changes. Intention to use and uses of marijuana were crosstabulated with gender and the results are shown in Table 2. The table shows that for both males and females about ¼ of the respondents would try marijuana if it were legally available, while more than half of females and almost half of males reported that they would not use marijuana even if it were legally available.

DISCUSSION

The purpose of this research was to explore the perception of harms and benefits of marijuana use and their associations with marijuana use among 15 to 17-year-old public secondary school students, also looking at student's intention to use within the context of regulatory changes. The discussion highlights some noteworthy findings and speculates on reasons for them.

The first trend that is noteworthy, relates to the research objective for perception of benefits. A significant amount of the respondents selected 'unsure' for many of the items on perception of benefits. There are possible reasons why adolescents are unsure about the benefits of marijuana as compared to the harms. One possible explanation for this finding is that Trinidad and Tobago employs mainly demand reduction strategies in secondary schools and these strategies usually highlight the negative aspects of drugs.²⁴ The benefits of drugs may be omitted altogether by drug education techniques in schools and possibly at home for fear of raising interests in adolescents to experiment with the drugs. This concept is in line with The Drug Problem in the Americas: Studies²⁵

which indicates that perception of risks should be stressed when dealing with vulnerable groups like adolescents in prevention programs. Conversely, this trend may be explained by some respondents' completing the questionnaire at a time when they had regional examinations. As such, some students (mainly those in form 5) may have found the questionnaire to be a distraction. This should definitely be considered in interpretation and follow-up research.

Interestingly though, most of the respondents indicated that marijuana should be used for medical purposes even though they indicated that they never used marijuana. This may be due to recent popular debates on the decriminalization of marijuana in Trinidad and Tobago and the actual changes that took place in other countries in the hemisphere.¹⁴ Are students simply echoing what they observe in the media? This can be further investigated.

Relating to the research objective on prevalence, from the total 268 respondents, 87 tried marijuana at least once in their lifetime while 181 have never tried it. In the past year 192 have not used marijuana while 76 have used it, while in the past month 214 have not used marijuana and 54 have used it. These findings are congruent with data previously recorded by the Inter-American Drug Abuse Control Commission showing that adolescents who use drugs are in the minority.²⁶ However, this should not be an indication to lapse on prevention strategies because adolescents are among vulnerable groups with early age of onset being related to drug abuse later in life.^{5,11} This is even more of a concern because some respondents reported that they tried marijuana as early as 5 years of age—a finding that is consistent with previous research by Riley¹² done in Trinidad.

The results also indicated that there is an association between a low perception of harm and a high perception of benefits and lifetime marijuana use. Research¹⁹ also highlighted that lower perceived risk of cannabis use has led to an increase in its use in the United States and that declining risk perception and increased availability may increase use and youth initiation. However, Hawkins²⁷ suggests that other risks and protective factors that exists in the family, school and community should also be considered. These protective factors should be honed in order to avoid increases in marijuana use among adolescents.

As it relates to the association between the perception of harm and marijuana, there was an association found between perception of harm and use of marijuana. This association showed strongest for frequent marijuana use. Essentially, whether an adolescent perceives risk of harm from marijuana use (whether for themselves or for others) depends on the frequency of the use. This trend is interesting but not altogether surprising since the period of adolescence is sometimes (cultural factors being considered) marked by an illusion of invulnerability.²⁸ However, one study²⁹ in the United States found that increased marijuana use (lifetime) and in the past thirty days were associated with the perception that Marijuana use has no risks. Explanations for the variance may lie in the country of study. Further research in this area may be useful.³⁰

Finally, the finding that 26.5% of the respondents indicated that they would try marijuana if it were legally available leaves room for discussion. The researcher does not make an inference on future use of marijuana as when it is actually available because the study uses a hypothetical situation. What the respondent would actually do can only be accrued through research if marijuana becomes decriminalized or legalized in Trinidad and Tobago. This is a general weakness of the question used. However, considering the findings, school demand reduction programs should be as comprehensive as possible so as to decrease drug experimentation.

The study is limited to two public secondary schools in one school district in Trinidad and Tobago therefore generalizability should be cautiously done. The study also used a hypothetical scenario to estimate on intention to use marijuana which may not be a reflection of what will actually take place if marijuana were to become legal in Trinidad and Tobago. Further research should definitely be done incorporating more schools.

CONCLUSION

This article explores the perception of harm and benefits associated with marijuana use among adolescents age 15 to 17. It also examines the intention to use marijuana within the hypothetical context of regulatory changes. The study found that (of the sample studied) a 1/3 of respondents tried marijuana at least once, most of which were males with an early age of onset of 5 and 9 years. The respondents indicated a high perception of harm of marijuana use while most of them were unsure about the benefits of using marijuana. An association was found between perception of harm and benefits and marijuana use. Most of the respondents indicated that marijuana should be used for medical and/recreational purposes. About a ¼ of the respondents would try marijuana if it were legally available and they were 18.

Given the lack of relevant information in the school system, the researcher recommends that convenient sampling be used when working with public secondary schools. The information could be selected from all students who meet the age criteria with consideration being given for balance between the sexes. The researcher also recommends that the questionnaire be extended to more schools so as to increase the generalizability of the findings. Also, the researcher recommends that single-sex and religious schools be included in the survey so as to form a comparison with public schools about perceptions of marijuana.

REFERENCES

1. World Health Organization. Health for the world's Adolescents. 2013 [cited 2018 Aug 2]. Available from: https://apps.who.int/adolescent/second-decade/files/1612_MNCAH_HWA_Executive_Summary.pdf
2. Breinbauer C. Youth: choices and change. promoting healthy behaviors in adolescents Washington (US): PAHO. 2005 [cited 2018 Aug 2]. Available from: <http://new.paho.org/hq/dmdocuments/2010/927511594X.pdf>
3. Hampson S, Severson E, Burns W, Slovic P, Fisher J. Risk perception, personality factors and alcohol use among adolescents. *Pers Individ Dif*. 2001 [cited 2018 Aug 2];30(1):167-81 Available from: [http://dx.doi.org/10.1016/S0191-8869\(00\)00025-8](http://dx.doi.org/10.1016/S0191-8869(00)00025-8)
4. Steinberg, L. A social neuroscience perspective on adolescent risk-taking. *Develop Review*. 2008;28(1):78-106.
5. Organization of American States, Inter-American Drug Abuse Control Commission, Inter-American Observatory on Drugs. Report on drug use in the Americas. Washington (US): OAS. 2011 [cited 2018 Aug 2]. Available from: http://www.cicad.oas.org/oid/pubs/druguse_in_americas_2011_en.pdf
6. Volkow ND, Baler RD, Compton WM, Weiss SRB. Adverse health effects of marijuana use. *New England J Med*. 2014;370(23):2219-27.
7. United Nations Office of Drugs and Crime (US). World drug report 2014. Trends in Organized Crime. New York (US): 2014 [cited 2018 Aug 2]. Available from: <https://dx.doi.org/10.1007/s12117-997-1166-0>
8. Hall W, Degenhardt L. Adverse health effects of non-medical cannabis use. *Lancet*. 2009; 374(9698):1383-91.
9. Chen, CY, Storr, CL, Anthony, JC. Early-onset drug use and risk for drug dependence problems. *Addictive Behaviors*. 2009;34(3):319-22.
10. Degenhardt L, Hall W. Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *Lancet*. 2012;379(9810):55-70.

11. Organization of American States, Inter-American Drug Abuse Control Commission – CICAD. Comparative analysis of student drug use in Caribbean countries: Antigua and Barbuda, Barbados, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, and Suriname: A Report on Student drug use in 12 Caribbean Countries. 2010 [cited 2018 Aug 2]. Available from: <http://cicad.oas.org/Main/pubs/StudentDrugUse-Caribbean2011.pdf>
12. Riley A. A final report rapid situation analysis Trinidad. 2008 [cited 2018 Aug 2]. Available from: <http://www.nationalsecurity.gov.tt/Portals/1/RSA%20Trinidad%20pdf.pdf>
13. Ministry of Health - Trinidad and Tobago. Trinidad and Tobago Global School-based Student Health Survey. 2011 [cited 2018 Aug 2]. Available from: http://www.who.int/chp/gshs/2011_factsheet_trinidad_and_tobago.pdf?ua=1
14. United Nations Office of Drugs and Crime. Cannabis: A Short Review. 2013 [cited 2018 Aug 2]. Available from: https://www.unodc.org/documents/drug-prevention-and-treatment/cannabis_review.pdf
15. Organization of American States. The drug problem in the Americas: Studies Legal and regulatory alternatives. Washington (US): OAS; 2013 [cited 2018 Aug 2]. Available from: http://www.cicad.oas.org/drogas/elinforme/informeDrogas2013/alternativasLegales_ENG.pdf
16. Andersson, B, Miller, P, Beck, F, Chomynova, P. The prevalences of and perceived risks from drug use among teenagers in 33 European countries. *J Substance Use*. 2009;14(3-4):189-96.
17. Johnston, LD, O'Malley, PM, Miech, RA, Bachman, JG, Schulenberg, JE. Monitoring the Future national results on drug use: 1975-2013: Overview, Key Findings on Adolescent Drug Use. Ann Arbor: Institute for Social Research, The University of Michigan. 2014 [cited 2018 Aug 2]. Available from: <http://monitoringthefuture.org/pubs/monographs/mtf-overview2013.pdf>
18. Lopez-Quintero C, Neumark Y. Effects of risk perception of marijuana use on marijuana use and intentions to use among adolescents in Bogotá, Colombia. *Drug Alcohol Depend*. 2010 June 1;109(1-3):65-72.
19. Lee C, Su Y, Hazard B. The contingent effects of risk perception on risk taking behavior: adolescent participative orientation and marijuana use. *J Youth Adolesc*. 1998;27(1):11-7.
20. The guardian; Jamaica decriminalizes marijuana. 2015 [cited 2018 Aug 2]. Available from: <https://www.theguardian.com/world/2015/feb/25/jamaica-decriminalises-marijuana>
21. Bentin A, Slovic P, Severson H. A psychometric study of adolescent risk perception. *J Adolesc*. 1993 June;16(2):153-68.
22. Curry L, Youngblade L. Negative affect, risk perception, and adolescent risk behaviour. *J Applied Developl Psychol*. 2006;27:468-85.
23. Gardner M, Steinberg L. Peer influence on risk taking, risk preference, and risky decision making in adolescence and: an experimental study. *Developl Psychol*. 2005;41(4):625-35.
24. Magar E, Phillips L, Hosie, J. Self-regulation and risk-taking. *Personality and Individual Differences*. 2008;45:153-9.
25. National Drug Council - Trinidad and Tobago. National anti-drug plan of Trinidad and Tobago 2012. 2012 [cited 2018 Aug 2]. Available from: http://www.cicad.oas.org/fortalecimiento_institucional/eng/National%20Plans/Trinidad%20and%20Tobago%202008-2012.pdf
26. Organization of American States. The drug problem in the Americas: Drugs and Public Health. Washington (US): OAS; 2013 [cited 2018 Aug 2]. Available from: http://www.cicad.oas.org/drogas/elinforme/informeDrogas2013/drugsPublicHealth_ENG.pdf
27. Hawkins JD. Preventing crime and violence through communities that care. *Europ J Criminal Policy Res*. 1999;7(4):443-58.

28. Gale K. The adolescent-development, relationships, and culture. 13th ed. Harlow (US): Pearson Education; 2011.
29. Merrill R. Use of marijuana and changing risk perceptions. *Am J Health Behavior*. 2015;39(3):308-17.
30. Wright MGM, Cumsille F, Padilha MI, Ventura CA, Sapag J, Brands B, et al. International research capacity building program for health related professionals to study the drug phenomenon in Latin America and the Caribbean. *Texto Contexto Enferm* [Internet]. 2015 [cited 2018 June 29]; 24(spe):17-25. Available from: <https://dx.doi.org/10.1590/0104-07072015001010014>.

NOTES

CONTRIBUTION OF AUTHORITY

Study design: Modeste N, Hamilton H.

Data collect: Modeste N.

Data analysis and interpretation: Modeste N, Hamilton H.

Discussion of the results: Modeste N, Hamilton H.

Writing and / or critical review of content: Modeste N, Hamilton H.

Review and final approval of the final version: Modeste N.

ACKNOWLEDGMENT

This research would not have been possible without the researcher capacity building program sponsored by the Inter-American Drug Control Commission and the Center for Addiction and Mental Health. The researcher also thanks the research team of advisors and coordinators: Marya Hynes, Akwatu Khenti, Carla Ventura, Bruna Brands, and Robert Mann. Finally, the researcher acknowledges the contribution of the research team in the preparation of the research proposal and manual: Danladi Husaini, Maria Ines Gandolfo Conceicao, Maria Gabriela Morgado Tapia, Patricia Cid Henriquez, Maria Fernanda Reyes Rodriguez, Guarionex Gomez Tavaréz, Jason Wynter, Karina Rivera Fierro and Gaile Gray-Phillip.

ETHICS COMMITTEE IN RESEARCH

Approval from the Research Ethics Board of the Center for Addiction and Mental Health (CAMH-REB) 088/2014, in Toronto Canada and from the University of the Southern Caribbean's research board.

CONFLICT OF INTEREST

No any conflict of interest.

HISTORICAL

Received: September 25, 2018.

Approved: May 20, 2019.

CORRESPONDENCE AUTHOR

Narsha Modeste

modesten@usc.edu.tt