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The relationship between youth's moral and legal perceptions of alcohol, tobacco and marijuana and use of these substances

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Abstract

Youth's perceptions of the morality of alcohol and other drug use and the perceived legitimacy of laws regulating such use have received scant attention in the international public health literature. To date, the focus has mainly been on emphasizing the health and social disbenefits of substance use in an attempt to counter the perceived psychological benefits (positive expectancies) of use and peer reinforcement. Following exploratory qualitative research, a structured questionnaire was administered to a sample of 611 youths aged 14–17 years. Analysis of the data found that use of alcohol, tobacco and marijuana was directly related to moral perceptions: those considering use as 'wrong under any circumstance' were less likely to be users than those who considered it 'ok under some or any circumstance'. Substance use was also related to legitimacy perceptions: those who thought laws relating to alcohol, tobacco and marijuana use were justified were less likely to be users than those who thought these laws were not justified. The implications of these findings for future research and for the design of more effective intervention strategies are discussed. It is suggested that interventions including student discussion of the moral and legal issues surrounding substance use may prove effective in postponing or even preventing substance use, particularly tobacco and marijuana consumption, or reducing the excess use of these substances.

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Introduction

Youth substance use remains a cause for serious concern as we enter into the new millennium. In Australia, a 2001 survey found that among 14–19 year olds, 20% were smokers (15% daily smokers), 74% consumed alcohol (28% weekly) and 25% had used cannabis in the last year [1]. Similar data exist in other developed countries. Tobacco use and excess alcohol and cannabis use not only lead to premature mortality and morbidity during adolescence but are also linked throughout the lifespan to adult chronic diseases (e.g. cancer, human immunodeficiency virus/acquired immunodeficiency syndrome) and ultimately to adult mortality [2, 3].

Attempts to understand and hence reduce the prevalence of youth substance use have led to extensive theorizing and empirical research. Public health studies have identified a number of individual (e.g. personality), social (e.g. parents, peers), structural (e.g. drug availability), marketing (e.g. advertising) and other factors (e.g. media, entertainment industries) that influence the trial and continued use of alcohol and other drugs by young people [4–8]. Intervention strategies have been based on countering these facilitating factors by, for example, encouraging parents to supervise their

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children's behaviour, restricting adolescents' access to alcohol and by promoting the ill-health and social disbenefits of substance use in an attempt to counter the perceived positive expectancies of use [9, 10].

At a more microlevel, a number of knowledge-attitude-behaviour (KAB) change models have been used to guide interventions and inform research relating to youth alcohol and other drug use [11] and other behaviours such as automobile-related accidents [12], condom use [13] and low-fat diet intentions [14] (see Norman and Connor [15] for a detailed review). The models typically applied include the Health Belief Model (HBM) [16], Protection Motivation Theory [17], the Theory of Reasoned Action (TRA) [18] and its derivatives, Ajzen's Theory of Planned Behaviour [11, 19] and the Theory of Trying [20]. These belief-based models include beliefs about the consequences of ceasing unhealthy behaviours and adopting healthy alternatives, and a variety of concepts, such as self- and response efficacy, social norms, positive and negative social and health expectancies, relevant reference groups and environmental facilitators and inhibitors of behaviour. Although there is a general consensus on the utility of these models, '... it is clear that in some instances they only account for a small amount of the variance in health behaviour' [15, p. 202]. Hence, there is a need to identify additional variables which may improve our understanding.

One concept that has received little attention in public health research and intervention strategies is that of personal morality. Personal morality is typically referred to as one's judgement of right versus wrong and what one 'ought' to do [21, 22]. The lack of attention to morality is surprising given the historical links between health and (religious) morality [23] and the fact that Fishbein's TRA, one of the most widely KAB change models applied to health issues [19], 'originally' included the concept of moral or personal norms [24]. In both the original and present TRA [24, 25], behavioural intention (BI) is the proximal determinant (or cause) of volitional behaviour. BI, in turn, is a joint function of the attitude towards performing a particular behaviour in a given situation (Aact) and of the norms perceived to govern that behaviour [24, 25]. However, in the original theory, the normative component distinguished between personal normative beliefs and social normative beliefs about how one ought to behave (Parker *et al*., 1986) [26]. Personal norm 'reflects an individual's internalized moral rules' about what he/she should do in a given situation, while social norm 'reflects the individual's perception about what others would want him/her to do' [12, p 129]. In an empirical test of the above TRA model, Ajzen and Fishbein [27] found that moral norms were too highly correlated with BIs and, subsequently, were dropped from the TRA model as unnecessary.

Few studies have incorporated measures of moral norms within the public health domain [15]. Such studies include explaining altruism and helping behaviour such as donating blood [28, 29] and intentions to donate organs [26]. Moral norms have been found to be predictive of recycling behaviour [30], eating genetically produced food [31], buying milk [32], using condoms [33] and committing driving violations [12].

Only a few studies have specifically explored adolescents' moral reasoning with respect to self-harm acts such as drug use [34]. These have revealed contrary findings: some reported that adolescents do perceive drug use as a legitimate moral issue [35], whereas others found that adolescents perceived drug use as a matter of personal prerogative (e.g. Berndt and Park, 1986 cited in Berkowitz *et al*. [34, 36]). Based on the criminological literature, Donovan [37] included an individual's personal morality in his model of factors that influence underage drinking, but reported no empirical studies. Parker, Aldridge and Measham [38] included one morality statement ('taking drugs is morally wrong') and one legitimacy statement ('cannabis should be made legal') in their 13-item drugs attitudes scale (pp. 97, 99). However, these items were not analysed separately; only the respondents' overall scores on this scale. With respect to tobacco, we found only one study related to the morality of smoking, and that involved adults: Rozin and Singh [39] found that attitudes towards

cigarettes among adults were strongly related to morality concerns, and more strongly than to health concerns.

A related concept that also has been largely ignored in the public health literature is that of legitimacy, that is one's felt obligation to obey the laws and the political or legal authorities enforcing them [40]. Although both morality and legitimacy are normative internal obligations, they differ in terms of their conceptual meaning and in the manner by which they influence behavioural compliance. Legitimacy is an internal obligation to obey an external political or legal authority, whereas personal morality is an internalized obligation to abide by one's personal sense of what is morally right or wrong [40]. In general, people are more likely to obey laws that are imposed by organizations they perceive to be legitimate, that they believe are applied fairly across all sections of the population and that involve appropriate penalties—also applied equitably.

While perceived legitimacy applies across laws in general, personal morality can act both for and against compliance. For example, if people regard legal authorities as legitimate, they are less likely to engage in illegal behaviours such as speeding or illicit drug use, for they feel that they ought to follow all laws, regardless of the potential for punishment. However, those who respond to the moral appropriateness of different laws may speed or use illicit drugs, if they believe that these crimes are not immoral [40].

Both morality and legitimacy have received considerable attention in the criminology literature and have demonstrated empirical utility in understanding a range of criminal behaviours [40, 41]. The legitimacy concept is particularly relevant to improving our understanding of those health-related behaviours that also have legal applications (e.g. drink driving, seat-belt use, illicit drug use). There are a number of government laws and regulations relevant to the health of adolescents, including the minimum age for alcohol consumption in licenced premises, purchase of cigarettes and sexual intercourse. Yet few studies, if any, have attempted to integrate the two relevant domains of research to improve the understanding of specific behaviours.

In Australia, moral norms have been considered in the context of road safety behaviours [42] and in the use of performance-enhancing drugs in sport [43]. For example, the Australian Sport Drug Agency includes reference to 'cheating' in its anti-drug messages. With respect to legitimacy, a recent New South Wales state government campaign appealed to gun owners 'to remain law abiding citizens' by turning in their (illegal) guns, and the US state of Georgia has used the slogan 'Buckle up. It's the law' to encourage seat-belt usage. However, we could not find any reports of school, community or mass media interventions targeting substance use that have been 'explicitly' based on morality or legitimacy concepts, and no systematic quantitative research assessing the relative efficacy of legal and moral appeals compared with traditional appeals to health, injury or legal sanctions.

The relevance of legitimacy and morality to improving an understanding of youth substance use is also supported by the strong body of research showing the relationship between moral reasoning development and perceptions of legitimacy, and behaviours such as delinquency, honesty, altruism and conformity [44].

This study was designed to measure 14- to 17-year old youths' moral and legitimacy perceptions of alcohol, tobacco and marijuana use and to assess whether these perceptions were related to the use of these substances. It was hypothesized that young people's moral and legitimacy perceptions of alcohol, tobacco and marijuana use would be related to their personal use of these substances.

Methods

Based on the literature and findings from an early exploratory study which explored young people's moral and legal conceptions of drug use and, in particular, their responses to different items for assessing morality perceptions, a structured questionnaire was designed and administered to a sample of 611 youths aged 14–17 years, residing

with a parent or caregiver within the Perth Metropolitan area.

Sampling

Data were collected in-home and the sample was obtained via a combination of probability sampling and snowballing as described below. Strict probability sampling was not required, since the main aim of this study was to examine relationships between variables.

(i) The first stage involved the random selection of 50 Census Collection Districts (CDs) with the highest proportion of 14- to 17-year old youths.
(ii) The second stage involved randomly selecting households within each CD via telephone interviews to screen for household eligibility (i.e. at least one youth aged 14–17 years living there). Field interviewers then called upon the household and asked screening questions to confirm eligibility. Data were collected from those in-scope households where both the caregiver's consent was obtained for a private interview with the youth and the youth voluntarily agreed to participate. A total of 389 interviews from 595 eligibles were obtained via this method (response rate 66%).
(iii) To minimize the cost and time involved in fieldwork, interviewers used two contact methods while in the field. (a) Contacted households were asked to nominate other households containing youths aged 14–17 years in the area. This 'snowballing' was limited to one completed interview to minimize any associated problems such as low sample variance and representation. A total of 210 referrals were obtained and, of these, 98 interviews were completed (response rate 47%). (b) Using a predetermined walking direction from the telephone-selected residence, interviewers made contact with 188 eligible households in the selected CDs and obtained 124 completed interviews via this method (response rate 67%).
(iv) As only one interview was conducted per in-scope household, the third stage involved selecting an eligible respondent where the household contained more than one. This was done on an 'at-home' basis or using the 'next birthday' technique where two or more youths were available at the time of consent.

In order to maximize the response rate and assist in reducing non-response bias, eligible youth and caregivers were provided with an information sheet outlining the research objectives, methodology and benefits of the study. Names were not asked so as to minimize the deliberate distortion of responses. Confidentiality was assured and the participating respondent was informed that they were free to withdraw from the survey at any time. In addition, sensitive questions relating to youth alcohol, tobacco and marijuana use were conducted via a self-administered questionnaire in private. The main reasons for those unwilling to participate included lack of time and disinterest and not because of some attitudinal or behavioural factor.

Measures

Donovan's [37] review suggested that eight major constructs could explain substance use. These constructs were based on a review of the literature, which showed that alcohol, tobacco and marijuana use share a number of antecedents, such as parental and peer influences and personality dispositions [7]. The eight constructs were classified in this study as external (five) and internal (three) constructs. External constructs included parental factors, marketing factors (affordability and availability), deterrence factors, attachment to societal institutions and peer norms. Internal constructs included health and psychosocial expectancies (positive and negative) and personality factors. Donovan [37] also suggested that morality and legitimacy perceptions (internal constructs) should be included in future studies to assess their utility in predicting alcohol and other substance use.

A questionnaire was constructed to measure all of the above 10 constructs. The morality and legitimacy items are described below. All other constructs are described in detail elsewhere [45] (Amonini *et al.*, in preparation). This paper is

concerned only with the relationship between substance use and perceptions of morality and legitimacy.

Substance use

Following standard measures used by the Health Department of Western Australia [46], respondents were asked to indicate whether they had ever tried alcohol, tobacco or marijuana and to indicate the quantity and frequency of consumption within the last month and week.

Moral judgements

Based on pre-testing several alternative measures [45], respondents were asked to indicate which of the following three statements best described their thoughts and feelings towards each of alcohol, tobacco and marijuana use: 'I believe drinking alcohol (smoking tobacco, using marijuana) at my age is wrong under any circumstances'; 'I believe drinking alcohol (smoking tobacco, using marijuana) at my age is wrong under some circumstances, but Ok under other circumstances'; 'I believe drinking alcohol (smoking tobacco, using marijuana) at my age is OK under any circumstances. This operationalization of moral judgement was based on the literature, which generally defines morality as the evaluation of whether an act is right (good) or wrong (bad) [21, 22, 47].

Legitimacy perceptions

Current laws restrict purchasing of tobacco and alcohol products by individuals <18 years of age, and possession of marijuana is illegal at any age. Respondents were asked to indicate whether there should or should not be a law against buying cigarettes under the legal age of 18 years, buying alcohol from licenced premises under the legal age of 18 years and possessing, selling or using marijuana. They were also asked whether there should or should not be a law against smoking tobacco and drinking 'at your age'. There are currently no such laws relating to <18 year olds, provided alcohol is not consumed on licenced premises.

Results

Sample characteristics

The sample's age, gender and age by gender distributions were similar to population proportions [48]. Of the 611 respondents who participated in the study, approximately equal proportions of each age, 14–17, were obtained. The sex ratio (number of females per 100 males) was 98.

Prevalence of alcohol, tobacco and marijuana use

Table I shows the percentages of 14- to 17-year old survey respondents who have ever tried alcohol, tobacco and marijuana and the percentages who used these substances in the week prior to the

Table I. *Alcohol, tobacco and marijuana use by age*

	14 years (n = 148) (%)	15 years (n = 148) (%)	16 years (n = 155) (%)	17 years (n = 160) (%)
Alcohol				
Lifetime				
Male	99	100	92	97
Females	95	98	96	99
Total	97	99	94	98
Last week				
Male	23	36	52	49
Females	27	36	58	60
Total	19	35	47	37
Tobacco				
Lifetime				
Male	65	60	71	69
Females	59	64	73	72
Total	62	62	72	70
Last week				
Male	16	20	24	20
Females	22	20	24	20
Total	19	20	23	20
Marijuana				
Lifetime				
Male	35	45	66	57
Females	31	44	53	53
Total	33	44	60	55
Last week				
Male	11	14	18	16
Females	10	13	11	7
Total	10	14	15	12

survey. Alcohol was the most widely used substance, followed by tobacco and then marijuana: nearly all (97%) respondents had ever had at least part of an alcoholic drink; two-thirds (67%) had ever smoked even part of a cigarette and nearly half (48%) had ever tried marijuana. In the week prior to the survey, one-third (35%) had consumed alcohol, while one in five (20%) had smoked tobacco and approximately one in eight (13%) had used marijuana. Alcohol, tobacco and marijuana use increased with age, and this was consistent for both males and females.

Perceived morality of alcohol, tobacco and marijuana use

Table II shows that at least four out of five survey respondents perceived the use of alcohol (86%), tobacco (87%) and marijuana (93%) as morally wrong under 'some' or 'any' circumstances. Only a minority of youth thought alcohol (14%), tobacco (13%) or marijuana (7%) was 'ok under any circumstances'.

Respondents were less accepting of tobacco and marijuana use than they were of alcohol: over half reported the use of marijuana (57%) or tobacco (53%) as 'wrong under any circumstances', while only 17% indicated alcohol use as 'wrong under any circumstances'. Conversely, nearly twice as many respondents approved of alcohol use versus marijuana or tobacco use under at least 'some circumstances': 88% indicated alcohol use is OK under 'some' or 'any' circumstances compared with 47% for tobacco and 44% for marijuana use. Overall, these data indicate that many youth do consider the use of alcohol, tobacco and marijuana as a moral issue.

There were significant gender differences in moral judgements towards alcohol and tobacco use, but not for marijuana use. Males (56.8%) were more likely than females (49.8%) to think tobacco use as 'wrong under any circumstance' but were also more likely to think alcohol use was 'ok under any circumstance' (18.2% and 10.6%, respectively). There were also significant age differences whereby younger respondents were more likely than older youth to think the use of alcohol and marijuana as 'wrong under any circumstance'. Although not statistically significant, there was also more younger than older respondents who thought tobacco use was 'wrong under any circumstance'. This supports the age differences found in sociomoral reasoning development and drug use by Berkowitz *et al.* [36] and those suggested in Kohlberg's [49, 50] cognitive stages of moral reasoning development.

Perceptions of the legitimacy of alcohol, tobacco and marijuana laws

Substantial majorities considered there should be laws restricting marijuana use 'at your age' (75.9%) and the purchase of tobacco (71.4%) and alcohol (71.7%) by those <18 years (Table III). However, somewhat less considered there should be a law against smoking at your age (62.5%), and only half considered there should be a law against drinking at their age (50.7%).

No gender differences in the legitimacy of laws were found. However, there were significant age differences, whereby younger respondents were more likely than older youth to consider all three laws as legitimate.

Not unexpectedly, morality and legitimacy perceptions were related: those viewing use of each

Table II. *Overall moral perceptions of alcohol, tobacco and marijuana use*

Base: all respondents (N = 611)	Alcohol		Tobacco		Marijuana	
	f	%	*f*	%	*f*	%
Overall moral judgements						
Wrong under any circumstances	102	16.7	326	53.4	345	56.5
OK under some circumstances, wrong under other circumstances	421	68.9	204	33.4	222	36.3
OK under any circumstances	88	14.4	81	13.3	44	7.2

substance as 'wrong under any circumstance' were more likely to endorse a law restricting use or purchase. The correlation between morality and legitimacy perceptions was moderately strong for all substances, but was higher for tobacco ($r = 0.61$) and marijuana ($r = 0.60$) than for alcohol ($r = 0.46$) ($P < 0.01$).

Moral and legitimacy perceptions by alcohol, tobacco and marijuana use

Following the Health Department of Western Australia and others in the literature, for each substance, respondents were classified as current users, non-recent users and non-users in the following manner. Respondents who had consumed alcohol, tobacco and marijuana on at least one day in the week prior to the survey were classified as current alcohol drinkers ($n = 242$; 39.6%), current smokers ($n = 121$; 19.8%) and current marijuana users ($n = 76$; 12.4%). Those who had consumed alcohol, tobacco and marijuana at least once in their lifetime (and not just a few sips/puffs), but not in the last week, were classified as non-recent alcohol drinkers ($n = 249$; 40.8%), non-recent smokers ($n = 124$; 20.3%) and non-recent marijuana users ($n = 209$; 34.2%); those who have never used alcohol, tobacco and marijuana in their lifetime or had just a few sips/puffs were classified as non-users of alcohol ($n = 120$; 19.6%), non-smokers ($n = 360$; 58.9%) and non-marijuana users ($n = 309$; 50.6%).

Chi-square analyses revealed a strong association between moral judgements and use for all three substances (Table IV). For example, a greater proportion of those who thought drinking alcohol was 'wrong under any circumstance' ($P < 0.01$) were non-users (64.7%) than non-recent (25.5%) or current users (9.8%). Conversely, all of those who thought drinking alcohol was OK under 'any' circumstance used alcohol, and they were significantly more likely to be current (68.2%) than non-recent (31.8%) users (Table IV).

Similarly, a greater proportion of those who thought smoking cigarettes was 'wrong under any circumstance' ($P < 0.01$) were non-users (83.9%) than non-recent (13.4%) and current (2.8%) users and, from a different perspective, a far greater

Table III. *Perceptions of legitimacy of alcohol, tobacco and marijuana laws*

Base: all respondents ($N = 611$)	Yes, should be a law against		No, should not be a law against	
	f	%	*f*	%
Law:				
Using marijuana at your age	464	75.9	147	24.1
Buying alcohol before 18 years of age	438	71.7	173	28.3
Buying cigarettes before 18 years of age	436	71.4	175	28.6
Smoking tobacco at your age	382	62.5	229	37.5
Drinking at your age	310	50.7	301	49.3

Table IV. *Moral perceptions by alcohol, tobacco and marijuana use*

Use	Overall moral judgement[a] (%)								
	Alcohol			Tobacco			Marijuana		
	Wrong any ($n = 102$)	Wrong some ($n = 421$)	OK any ($n = 88$)	Wrong any ($n = 326$)	Wrong some ($n = 204$)	OK any ($n = 81$)	Wrong any ($n = 345$)	Wrong some ($n = 222$)	OK any ($n = 44$)
Non-user	64.7	12.8	0.0	83.9	38.1	16	72.9	28.3	4.7
Non-recent user	25.5	46.3	31.8	13.4	29.7	25.9	24.8	51.4	37.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Significant differences at $P < 0.01$.

proportion of those who thought marijuana use was 'wrong under any circumstance' were non-users (72.9%) compared with those who thought it was 'ok to use marijuana ''some'' time' (28.3%) or 'any' time (4.7%) ($P < 0.01$). The strong relationship between moral judgements and use for each substance was further indicated by the high bivariate correlation coefficients (alcohol: $r = 0.71$; tobacco: $r = 0.77$; marijuana: $r = 0.77$ at $P < 0.01$), which also indicates that the association between morality perceptions and use was slightly stronger for tobacco and marijuana than for alcohol.

Perceptions of legitimacy of the laws also were directly related to substance use, with the association being strongest for tobacco use (Table V). For example, for all three substances, there was a far greater proportion of non-users among those supporting the respective laws than among those not supporting the laws, and particularly for tobacco and alcohol: 78% of those supporting tobacco restrictions were non-tobacco users versus 62% supporting marijuana prohibition being non-marijuana users and 33% of those supporting alcohol purchasing laws being non-alcohol users. Conversely, 43% of those against tobacco restrictions were current tobacco users, 32% against marijuana laws were current marijuana users and 53% of those against alcohol purchasing restrictions were current alcohol users. The bivariate correlations between legitimacy perceptions and substance use reflected these findings, whereby higher correlations were found for tobacco ($r = 0.76$) and marijuana ($r = 0.67$) than alcohol ($r = 0.54$) ($P < 0.01$).

Discussion

This study found that many young people do perceive alcohol, tobacco and marijuana use as moral issues. More than three-quarters of the surveyed respondents considered the use of alcohol, tobacco and marijuana as morally wrong under some or any circumstances. Furthermore, substance use was directly related to moral judgements: non-users were more likely to view substance use as morally wrong under any circumstances, and current users were more likely to view substance use as morally acceptable under any circumstance. These data provide additional evidence of the utility of morality in predicting health behaviours [34, 47].

Youth were less morally accepting of tobacco and marijuana use than of alcohol use. Nearly half of those surveyed thought tobacco and marijuana use was wrong under any circumstance, but only 1 in 10 thought drinking alcohol was wrong under any circumstance. These findings are indicative of the widespread use and tolerance of the use of alcohol as a socially normative behaviour within Australia, even at this age.

Most young people surveyed endorsed the laws restricting the use of marijuana (at their age) and the purchase of tobacco and alcohol by those <18 years of age. Nevertheless, approximately one in four respondents did not consider each of these laws legitimate. Perceptions of the legitimacy of these laws were strongly related to non-use versus current use. It is suggested that strengthening young people's beliefs about the legitimacy of such laws

Table V. *Legitimacy perceptions by alcohol, tobacco and marijuana use*

Use	Legitimate alcohol law[a]		Legitimate tobacco law[a]		Legitimate marijuana law[a]	
	Percent no ($n = 301$)	Percent yes ($n = 310$)	Percent no ($n = 229$)	Percent yes ($n = 376$)	Percent no ($n = 144$)	Percent yes ($n = 450$)
Non-user	6.3	32.6	29.7	77.7	22.2	61.6
Non-recent user	41.2	40.3	27.5	16.2	45.8	31.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a]Significant difference at $P < 0.01$.

could delay or prevent trial of these substances. Legitimacy also includes perceptions of the extent to which the laws are seen to be applied fairly, the punishments appropriate and the persons charged with administering the laws treating accused transgressors courteously. Further research should include such perceptions of the laws with respect to these substances and their relationship to substance use. For example, it would be hypothesized that young people who considered that the Police and Courts targeted young people's transgressions but ignored older persons' transgressions would be less likely to comply than those who saw the laws applied equally across all age groups. Similarly, members of an ethnic or socioeconomic group who considered they were targeted more, punished more severely and treated with less respect than other groups would be less likely to comply with the laws. Research here would also need to determine whether in fact the laws and sanctions were applied fairly.

The present findings are encouraging in that young people's moral perceptions are learned [49], and therefore can be influenced [51]. It may well be that perceptions of the morality of alcohol, tobacco and marijuana use serve as a protective factor mitigating uptake. Longitudinal studies assessing the protective effect of such morality perceptions would be valuable to confirm the potential for such interventions. In the meantime, we believe these data support the proposition that substance use programmes aimed at school children and adolescents should not just emphasize health effects but also include components related to the morality of substance use and the legitimacy of the laws restricting such use among young people. Reinforcing and strengthening morality and legitimacy perceptions may prevent or delay substance uptake. The challenge would be to develop appropriate interventions and at an appropriate age.

Moral development accelerates in the primary school stage (5–12 years) and is almost complete by 15 years [52, 53]. Hence morality and legitimacy components of substance curricula should be part of primary school interventions and at an early age. Recent work in moral values education suggests that such education programmes should involve substantial interactive processes and active involvement in the analysis of ethical dilemmas) [54, 55]. Regardless of specific learning strategies, there is substantial evidence that moral education interventions can be successful in advancing moral growth and teaching values [51, 56, 57]. We can therefore be optimistic that appropriate interventions could yield positive results for substance use.

Conclusion

This study extended the existing framework of youth alcohol and other drug use by examining concepts of morality and legitimacy that have been largely ignored in the application of HBMs and other similar studies. The results showed that these two concepts are important inhibitors, given that moral and legitimacy judgements were directly related to use. Consequently, we have embarked on further research that examines the relative influence of these concepts compared with those variables previously identified as influencing behaviour (including health beliefs, perceived dis/benefits, personality variables, affordability, parent connectedness, social norms, peer influences and deterrence variables). This will lead to a more comprehensive understanding of the interrelationships of variables and their influence on youth alcohol, tobacco and marijuana use.

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