

# Determinants of sexual activity, awareness, and use of contraception among Malaysian college students

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## RESEARCH

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## ABSTRACT

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### Background

Young people's vulnerability to risky or unwanted sex and other unhealthy behaviours is tied to host of individual, family, and community factors and is closely related to economic and educational opportunities.

### Aims

This study aimed to identify factors determining the sexual activity, awareness and use of contraception among college students in Malaysia.

### Methods

A cross-sectional study was conducted among students aged 17–24 years in four colleges of Malaysia. Data were collected via a self-administered multiple response questionnaire. Data analysis was performed on 552 completed questionnaires.

### Results

The mean age of the participants was 19.7±1.6 years. The majority of the respondents were females, Malays, residing in rented accommodations. Contraceptive awareness,

sexual activity and use of contraception increased significantly with age of the respondents and were more in males. Better contraceptive awareness was found in those staying away from parents and those studying in colleges with urban exposure. Almost 40 per cent respondents had indulged in sexual activity but only 37 per cent reported use of contraception. A significantly higher proportion of respondents who did not use contraception were females, those in the age group of 19–20 years old and those who were studying in colleges with rural exposure. Male students were more likely to engage in sexual activity and use contraception compared to females.

### Conclusion

There is a need to impart sexual and reproductive health knowledge during the adolescent period so that young people can make informed choices and be motivated to use of contraceptives effectively.

### Key Words

Contraception, sexual activity, young adults

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### What this study adds:

#### 1. What is known about this subject?

Worldwide, many studies have shown that age, level of education, place of residence, urban/rural region, religious affiliation, economic status, exposure to sexual and reproductive health education, and living arrangements are important predictors of sexual and reproductive health.

#### 2. What new information is offered in this study?

There is an increase in the number of Malaysian youth engaging in sexual activities without using appropriate contraception.

#### 3. What are the implications for research, policy, or practice?

There is a need for sexual and reproductive health education to be introduced universally and uniformly in schools. There is a need to make provisions for special

services, to cater to sexual and reproductive health needs of adolescent and young adults in Malaysia.

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## Background

Young people (ages between 10 and 24 years) are currently exposed to many risks as they negotiate adulthood and are exposed to sexual relationships due to ever changing social, cultural and economic factors.<sup>1,2</sup> Due to an increasing gap from the age at menarche to the age at marriage, many young adults are engaging in premarital sex.<sup>3</sup> Engagement in premarital sexual activity and low contraceptive use predisposes them to the risk of unwanted pregnancies, unsafe abortions, future fertility problems, and sexually transmitted infections. Young people's vulnerability to risky or unprotected sex and other unhealthy behaviours is tied to a host of individual, family, and community factors that influence their behaviour, which are also closely related to economic and educational opportunities.<sup>4</sup> Worldwide, many studies have shown that age, level of education, place of residence, urban/rural region, religious affiliation, economic status, exposure to sexual and reproductive health education, and living arrangements are important predictors of sexual and reproductive health.<sup>5–10</sup>

Though majority of young people are well informed about contraception, there is a gap between the knowledge and use of contraception.<sup>11,12</sup>

Malaysia is a multi-racial, multi-religion country with a population of over 28.3 million. The majority of its population being Malays who are Muslims (61.3 per cent), while the other two large races are Chinese and Indians who may be Buddhists (19.8 per cent), Christians (9.2 per cent) or Hindus (6.3 per cent).<sup>13,14</sup> The country has been experiencing a change in its population age structure characterized by a youth bulge. In 2010, young people in the age group of 10–24 years accounted for 30 per cent (8.4 million) of the total population.<sup>13–15</sup> In a nationwide study conducted in 2005, the prevalence of sexual activity among young people aged 15–24 years who were unmarried was 1.3 per cent (25/1901).<sup>16</sup> Age of sexual initiation among youth in Malaysia was found to vary from even as young as, 9–25 years old with mean at about 17–18 years 12. The sexuality issues faced by youths in Malaysia are premarital sexual intercourse, sexually transmitted diseases (STDs), unwanted and unsafe pregnancies and abortion, HIV/AIDS, sexual diversity, cybersex and sexuality education.<sup>12</sup> Lack of sexual and reproductive health information and negotiating skills in a sexual relationship, contributes to risky sexual attitudes and behaviour among the youth.<sup>12</sup>

Due to cultural and religious values, Malaysia as a nation is rather conservative when it comes to issues with regards to sexual and reproductive health and this influences the country's education and healthcare policies. Prior to 2011, there was no formal sexual and reproductive health education module taught in Malaysian schools. Sexual and reproductive health information were incorporated into subjects such as physical and health education, science, additional science, and biology which was more content-based and under a moral and religious context, under the name Family Health Education (FHE).<sup>12</sup>

Nevertheless, there were also community-based activities that were carried out by agencies, government and non-government organizations that very much involved youth participation that promoted healthy lifestyles and responsible living. For example, PROSTAR is a concept action by youth, through youth and for youth, aimed to promote healthy living without AIDS.<sup>12</sup>

It was only in January 2011 that the Reproductive Health and Social Education module was introduced into schools in Malaysia, which included topics from personal hygiene, sexuality education to life skills such as self-respect and negotiation, conflict management, puberty, the risks of premarital sex, sexually transmitted infections and sexual identity.<sup>17</sup>

However, efforts have been made to promote sexual and reproductive health of young people in the country; studies have shown an increase in the numbers of Malaysian youth participating in sexual activities.<sup>15</sup>

The seriousness of the situation is clearly reflected in the increasing number of teen pregnancies. It is unfortunate that about 111 girls have sought help from the Social Welfare Department over unwanted pregnancies in the first four months of 2010 compared with 131 cases throughout 2009 and 107 in 2008.<sup>18–20</sup>

Sexual and reproductive health services in Malaysia are provided under the ambit of maternal healthcare. Hence, provision of contraception in the public healthcare sector caters only to those who are married. However, as there are no laws governing provision of contraception such as condom and oral contraceptive pills, young people may still obtain such contraception over-the-counter from some private clinics and retail pharmacies.

It was only in 2011, that the public healthcare sector started offering sexual and reproductive health services to those

who were unmarried. However, the implementation may be hampered at the ground level due to personal, cultural and religious beliefs of healthcare providers in providing contraception to young adults.

It's noted that adolescent sexual intercourse is found to be significantly associated with socio-demographics (age, gender), environmental factors (staying with parents) and substance use (alcohol, cigarette smoking, drug), even after adjustment for demographic factors.<sup>12,18</sup>

In order to plan and implement intervention for fostering positive youth development and to decrease the negative outcomes of sexual behaviour of the youth, it is important to understand how youth make decisions to engage in early sexual activity and how they use the contraceptive methods available. Thus, the aim of this study was to examine the effect of age, gender, ethnicity, place of education and living arrangement on, sexual activity, awareness and use of contraception among Malaysian youths. The results of this study may help to formulate strategies to empower youth with safe sexual practices.

## Method

### Study setting and population

A cross-sectional study was conducted in colleges in Kuala Lumpur and Malacca in West Malaysia from 2010–2011. Respondents in the age group of 17–24 years were selected using cluster sampling from four colleges in the districts of Central Malacca, Jasin and Kuala Lumpur. These districts were chosen to provide samples of youth population with urban and rural exposure. The four colleges chosen were categorised into urban college (Malacca City College 1 and Kuala Lumpur College) and rural college (Malacca City College 2 and Jasin College).

A total of 571 completed questionnaires were distributed and were returned by the students. However, 19 of these were excluded, due to incomplete information and invalid data. This gave the study a response rate of 96.9 per cent (552/571).

### Survey instrument

The data was collected by self-administered multiple response questionnaire. The questionnaire was designed by the researchers after an extensive review of available literature and pre-testing. The questionnaire with 20 items covered the following aspects: socio-demographic profile (six items), awareness about contraception (nine items), sexual activity and use of contraception (five items).

### Data collection

The respondents were approached in groups (in classes). The purpose of the study was explained to them. They were assured that the information provided by them would be kept strictly confidential and that they did not have to divulge their identity while filling the questionnaires. They were also informed that participation in this study was voluntary. Participants who were willing to participate stayed back while those who were not willing left the group. There were no incentives given for participation.

Once respondents completed the questionnaire, they were asked to seal the questionnaires in envelopes and the envelopes were then collected.

### Data analyses

The data analyses included descriptive statistics conducted on socio-demographic variables and respondent's awareness of contraceptives, sexual activity and contraception use using SPSS version 15. The contraception awareness score was a summation of one point for answer "yes" for knowing about the six different contraceptive methods (condom, oral contraceptives pills, sterilization, intrauterine devices, natural methods, and contraceptive injection) with a maximum score of six. Bivariate analyses (t-test, chi-square test, ANOVA) were conducted to identify associations between socio-demographic variables (age, gender, ethnicity, living arrangement and place of education) with respondent's awareness of contraceptives, sexual activity and use of contraceptives.

Age was categorized into groups (17–18, 19–20, 21–22, 23–24 years old); place of education was categorized into college with urban exposure and college with rural exposure. As for living arrangement, students were categorized into those who live with parents and those who stayed away from parents. In this study, sexual activity indicates engagement in sexual intercourse.

Standard linear regression and multiple logistic regressions were performed to identify the significant socio-demographic predictors for contraceptive awareness, sexual activity and contraception use.  $P \leq 0.05$  was used to determine the significance level.

### Ethics statement

This study obtained ethics clearance on its methodology processes including the consent procedure and the use of the study questionnaire from the Ethical Committee of the Faculty of Medicine, Melaka Manipal Medical College. Permissions from the heads of the institute of the

respective colleges were also obtained prior to the data collection.

In order to maintain confidentiality and to obtain honest response from the respondents, consent from next of the kin or the caretakers was not taken. However, the college authorities being considered as guardians were informed and consented to conduct the study. Verbal informed consent was also obtained from all the students.

## Results

### Background characteristics of respondents

Of the 552 questionnaires, which were included in the analyses, there were more females (53.6 per cent) in the study population compared to males (46.4 per cent). The mean age ( $\pm$ standard deviation) of the study population was 19.73 ( $\pm$ 1.6) years. By ethnicity, half of the study population was Malays (50.2 per cent), followed by Chinese (41.3 per cent), Indians (6.3 per cent), and others (2.2 per cent). There was almost equal distribution between respondents from both colleges with rural and urban exposure. The majority of respondents were not living with parents (62.1 per cent), but were living in rented accommodation, foster homes or college hostels. In terms of sexual activity, more than half of the respondents reported (62.1 per cent) to have never had sex. Among those who had experienced sexual intercourse ( $n=209$ , 37.9 per cent), only 37 per cent self-reported to have used some form of contraception. Table 1 shows the socio-demographic characteristics of the respondents.

### Awareness of contraceptive methods

About 98.4 per cent of the respondents were aware about at least one method of contraception and nearly sixty per cent were aware about three methods of contraception. Condoms (95.3 per cent) were the most known contraceptive method followed by oral contraceptive pills (62.0 per cent), sterilisation (47.8 per cent), intrauterine devices (IUD) (41.5 per cent), natural methods (20.8 per cent) and contraceptive injection (19.0 per cent) (Table 1).

It was observed that the awareness score improved with the age of respondents that is the older respondents were more aware about the methods contraception. Male respondents had better awareness score regarding contraception compared to their female counterparts. There were significant associations between the mean awareness score and place of education and living arrangement. Students who were studying in college with urban exposure, ( $t(552)=6.04$ ,  $p\leq 0.001$ ) and those who were living away from parents, ( $t(552)=3.35$ ,  $p\leq 0.001$ ) had

significantly higher mean awareness score than those who were studying in the college with rural exposure and those who were living with parents.

Standard linear regression was conducted to assess significant predictors of awareness of contraception (Place of education and accommodation). Only place of education was the significant predictor of awareness of contraceptives (Table 2).

### Sexual activity

More than one third ( $n=209$ , 37.9 per cent) of the total respondents had engaged in sexual intercourse. There was a higher proportion of respondents in the older age group (23–24 years) who had engaged in sexual activity. Of the 209 sexually active respondents, more than 50 per cent were males. Also, respondents who were studying in college with rural exposure were more sexually active compared to those studying in colleges with urban exposure 40 per cent of respondents staying with parents and 36 per cent of those staying away from parents were sexually active (Table 3).

### Contraception use

Among those who had engaged in sexual intercourse, 62.7 per cent ( $n=131$ ) of them did not use any method of contraception. A significantly higher proportion of respondents who did not use contraception were in the younger age group of 19–20 years old, and those who were studying in colleges with rural exposure (Table 3).

Females were also found to be less likely to use contraceptives compared to males. Students who were studying in college with urban exposure were 3.1 times more likely to use contraceptives than those who were studying in college with rural exposure. Also 70 per cent of those using contraception were staying away from parents (Table 4).

Multiple logistic regressions were conducted to examine various socio-demographic variables predictive of sexual activity, awareness and use of contraceptives. The model indicates that gender was an important predictor for sexual activity awareness and use of contraceptives. Also, place of education was found to be a strong determinant of awareness and contraceptive use.

## Discussion

The United Nations Population Fund (UNFPA) notes that future population trends will hinge on the fertility decisions of today's men and women aged 15–24 years and on their

ability and freedom to act on those decisions.<sup>19</sup>

Concern about adolescent fertility arises from its health implications both for the mother and the child, its demographic implications in societies with rapid population growth and its social development implications.

Many studies have been conducted all over the world to study the knowledge, attitude and practice of contraception in adolescents and young adults and their determinants as well. Levels of education, place of residence in childhood—urban/rural region, religious affiliation, economic status index, and exposure to mass media have been associated with sexual experience and use of protective measures.<sup>6</sup> Adolescents with unstable home environment (divorce, recent death, not living with mother) or sexually experienced peers, as well as those who seek sexual education from siblings or friends also have higher possibilities of being sexually active.<sup>9</sup>

Age, ever-received sex education in school, ever-attended school and exposures to the radio are also significant predictors of knowledge of correct contraceptive use, particularly among men.<sup>10</sup>

In the present study, associations of age, gender, place of education (urban/rural exposure), accommodation (staying with/away from parents) and ethnicity with sexual activity, awareness and use of contraception was studied.

This study identified males, those of older age (above or equals to 21 years) to have better awareness of contraceptives, higher engagement in sexual activity and higher use of contraception. The higher contraception use among males and those in older age groups may be explained by the better contraceptive awareness found among them compared to females and those of younger age (less than 21 years old).

Many studies have shown that male adolescents are more likely to engage in sexual activities, have more liberal sexual attitudes compared to females and are more likely to indulge in sexual risks taking behaviour.<sup>13,17-20</sup>

This may be driven by their perceptions of what it takes to be a man during the adolescence and young adult period as they are trying to establish an identity and social standing.<sup>21-25</sup>

Interestingly, this study also found that the awareness about contraceptives and its use among male students were

higher compared to female; however, the low contraception use among female students is a cause of concern. This could be possibly being because they are hesitant to procure them from private clinics where contraceptives are available for the unmarried population. The present study revealed that students studying in college with urban exposure and those who were staying away from parents had higher contraceptive knowledge and use. This was also noted by Zulkifli et al. that adolescents living away from parents and family were statistically associated with sexual experience. Significant differences were also found in sexual activities between urban (2 per cent) and rural (1.6 per cent) students, between male students (2.5 per cent) and female students (1.2 per cent), and between older children, i.e., aged 16-18 (3.5 per cent) and younger children, i.e., aged 13-15 (1.1 per cent).<sup>6,14</sup>

It is possible that studying in urban areas provided better opportunity to students to access information especially through the Internet to learn about matters related to sexuality. Good sexual and reproductive health knowledge also leads to awareness on the risks of engaging in sexual intercourse, and this could be one of the reasons, why students studying in colleges with urban exposure were less likely to engage in sexual activity and those doing so were using contraceptives.

This study also found that students living away from parents had better awareness of methods of contraception. Studies have shown that, there was a lack of discourse about sex and contraception, between parents and their adolescent children.<sup>26</sup> When there was communication about sexual and reproductive health matters in family, it was mainly in the form of warnings, threats and physical discipline and this caused young people to have difficulties discussing sexuality matters with their parents due to lack of trust and fear of punishment, cultural barriers and embarrassment.<sup>24,25</sup>

This may explain why students living away from parents have better awareness and use of contraceptives as they are able to find out more information regarding sexuality at ease, being away from parents unsupervised.<sup>24</sup> In addition, studies have shown that adolescents main source of information about sex is from friends.<sup>25-31</sup>

The majority of the students in this study were staying in hostels and rented accommodations, hence, this provided them the opportunity to discuss contraception matters when living with friends.

This study also revealed a concern, which warrants

attention. Respondents of younger age group (17–18 years) were found to be more sexually active but only a small proportion of them were using contraceptives. The same was found among those who were studying in colleges with rural exposure, who also exhibited low contraceptive awareness and use.

A trend of increase in sexual activity but lack of use of contraceptive has been observed in young people of Malaysia. In the Second National Health and Morbidity Survey of 1996, 1.8 per cent of the respondents in secondary schools claimed to have had sex.<sup>12,15</sup> In the Youth Sexuality Survey, for those who have had sexual intercourse, when asked about “precautions to prevent pregnancy, 90 per cent of the in-school females admitted not taking any measures, whereas about 60 per cent of the out-of-school females did so. On the other hand, for male respondents, about 30 per cent of in-school and 15 per cent of out-of-school did take precautions to prevent pregnancy.<sup>18</sup> Low contraception use is of concern due to risks of sexually transmitted diseases and teenage pregnancies and may lead to early termination of education, jeopardizing future socio-economic well-being among young people.

It has been observed worldwide that there is a decline in the age of initial sexual intercourse among youths and a tendency among younger adolescents to delay using contraceptives. Medical practitioners, counsellors, policymakers, and the general public must realize, however, that teenage sexuality and its consequences are not the most alarming of social ills but its consequences like teenage pregnancy and childbearing comes at great social and public economic cost.

#### **Study recommendations**

While socio-demographic factors such as gender are not modifiable, specific interventions can be formulated to target the key populations and to increase their sexual and reproductive health knowledge. The findings of this study calls for dissemination of information on sexual and reproductive matters with special emphasis on educating and empowering female adolescents and those who study in colleges in rural areas on sexual and reproductive health matters.

In addition, although this study predicted that students who stayed away from parents were more likely to have better awareness about contraceptive method. Therefore, parents should be encouraged to discuss and educate their children on sexuality issues to further increase their understanding in this matter and to prevent negative sexual practices.

Specially designated centres should be established, for provision of appropriate counselling and contraceptive services, to young people by trained health care providers.

#### **Limitation of study**

This study was only conducted in four colleges located in two states in Malaysia. In addition, those who did not attend school or college were not included in the study. Furthermore, only students within the age range 17–24 years were included in the study. Also the marital status of the respondents was not taken into consideration.

#### **Conclusion**

This study predicted that males were more likely to have better awareness regarding contraceptives compared to their female counterparts. They were also more likely to engage in sexual activity and use some form of contraception. Students studying in college with urban exposure and those who stay away from parents were more likely to have better awareness about contraceptive methods.

The present study highlights that there is a need to impart sexual and reproductive health knowledge during the adolescent period so that individuals can make informed decisions when it comes to reproductive health matters. There is also a need for continuing education about sexuality and contraception throughout the adulthood in order to reinforce the knowledge and change in sexual attitudes. This could help to increase the age of sexual debut and to promote safe sexual practices.

The youth need to be motivated for effective and appropriate use of contraceptives and arrest the trend towards unwanted pregnancies and its adverse sequelae. It is hoped that the implemented reproductive Health and Social Education module would be able to increase knowledge and empower youths in making informed decisions with regards to sexual and reproductive health matters regardless of their socio-demographic factors.

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**PEER REVIEW**

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**ETHICS COMMITTEE APPROVAL**

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**CONFLICTS OF INTEREST**

The authors declare that they have no competing interests.

**Table 1: Socio-demographic variables and their associations with awareness of contraceptives**

Characteristics	N (%)	Mean knowledge score (±sd)	(95% CI)	Test	P value
Age in years					
17–18	168 (30.4)	2.86 (1.28)	2.66–3.05	F=0.88	0.45
19–20	222 (40.2)	2.80 (1.31)	2.62–2.97		
21–22	122 (22.1)	2.90 (1.19)	2.69–3.12		
23–24	40 (7.2)	3.15 (1.53)	2.66–3.64		
Gender					
Male	256 (46.4)	2.95 (1.23)	2.80–3.10	t=1.45	0.15
Female	296 (53.6)	2.79 (1.35)	2.64–2.94		
Ethnicity					
Malay	277 (50.2)	2.92 (1.30)	2.76–3.07	F=0.68	0.56
Chinese	228 (41.3)	2.85 (1.31)	2.68–3.02		
Indian	35 (6.3)	2.60 (1.27)	2.17–3.03		
Others	12 (2.2)	2.75 (0.97)	2.14–3.36		
Place of education					
College with urban exposure	280 (50.7)	3.18 (1.24)	3.04–3.33	t=6.04	0.001**
College with rural exposure	272 (49.3)	2.54 (1.27)	2.38–2.69		
Living arrangement					
Not living with parents	355 (64.3)	3.00 (1.25)	2.43–2.80	t=3.35	0.001**
Living with parents	197 (35.7)	2.61 (1.33)	2.87–3.13		

\*\*p<0.001

**Table 2: Factor predictive of mean contraception awareness score among respondents**

Characteristic	Beta	t	R	R <sup>2</sup>	Adj R <sup>2</sup>
Place of education	0.227	5.2**	0.26	0.067	0.063
Accommodation	-0.07	-1.62			

\*\*p<0.001



**Table 3: Associations between sexual activity and contraception non-use and socio-demographic variables**

Characteristics	Sexually active (n=209, 37.86%)			Contraception Non-Use (n=131, 62.67%)		
	N (%)	$\chi^2$ (df)	p-value	N (%)	$\chi^2$ (df)	p-value
Age in years						
17-18	76 (45.2)	17.85 (3)	0.001**	50 (65.8)	7.71 (3)	0.052*
19-20	83 (37.4)			57 (68.7)		
21-22	29 (23.8)			16 (55.2)		
23-24	21 (52.5)			8 (38.1)		
Gender						
Male	113 (44.1)	7.51 (1)	0.006*	63 (55.8)	4.42 (1)	0.035*
Female	96 (32.4)			68 (70.8)		
Ethnicity						
Malay	109 (39.4)	2.55 (3)	0.470	67 (61.5)	1.16 (3)	0.760
Chinese	81 (35.5)			50 (61.7)		
Indian	16 (45.7)			12 (75.0)		
Others	3 (25.0)			2 (66.7)		
Place of education						
College with urban exposure	92 (32.9)	5.63 (1)	0.018*	45 (48.9)	12.28 (1)	0.000**
College with rural exposure	117 (43.0)			86 (73.5)		
Living arrangement						
Living with parents	79 (40.1)	0.513 (1)	0.474	54 (68.4)	1.38 (1)	0.240
Not living with parents	130 (36.0)			77 (59.2)		

\*p<0.05, \*\*p<0.001

**Table 4: Factors predictive awareness of contraceptives, sexual activity and use of contraceptives**

Characteristic	Sexually activity			Contraception use <sup>b</sup>		
	Odds ratio	95% CI	p	Odds ratio	95% CI	p
Age	0.95	(0.85-1.06)	0.35	1.04	(0.87-1.25)	0.70
Gender						
Male (reference)	1.00			1.00		
Female	0.64*	(0.451-0.91)	0.013	0.44*	(0.24-0.81)	0.008
Place of education						
College with rural exposure (reference)	1.00			1.00		
College with urban exposure	0.73	(0.503-1.06)	0.098	3.10**	(1.64-5.88)	0.001

\*p<0.05, \*\*p<0.001

<sup>a</sup>Sexual Activity Model; Hosmer and Lemeshow Test  $\chi^2$  (8)=7.29, p=0.51; Cox and Snell R<sup>2</sup> 2.4%; Nagelkerke R<sup>2</sup>=3.2%

<sup>b</sup>Contraception Use Model; Hosmer and Lemeshow Test  $\chi^2$  (6)=10.04, p=0.123;

Cox and Snell R<sup>2</sup>=9.5%; Nagelkerke R<sup>2</sup>=13.0%