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# Evaluation of Effectiveness of Peer Education on Smoking Behaviour

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## Abstract

Smoking is the most important cause of disability, death and preventable illness in Turkey and all over the world. Cigarette smoking affects a large part of society with increasing frequency and is propagated among young people. Therefore, the tobacco industry targets youth, adolescents and women. Decreasing the age of smoking cigarettes causes exposure of the cigarettes effects to the smokers for a longer period. Adolescents start smoking due primarily to a desire to imitate adults, peer pressure, affectation and easy access to cigarettes. A great impact on the behaviour of human beings is the adolescent peer group. This effect is valid for both risky and safe behaviours. Peer education aims to use positive peer influence on their behaviour since peers are positive models for each other. In recent years, the increase in tobacco consumption has led to increased need for per education. The purpose of this article is to explain how to use peer education in changing the behaviour of adolescent smoking.

**Keywords:** adolescent, transtheoretical model, peer education, use of tobacco

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## 1. Introduction

The extended period between starting to smoke and the onset of cigarette-related diseases leads to decreased awareness in adolescents about the harmful effects of tobacco on health. Adolescents are vulnerable to tobacco use. Tobacco use starts at an early age, and since the tobacco industry is aware of this fact, they act accordingly. The tobacco industry targets both adolescents and women in an attempt to influence them by using attractive advertisements that focus on freedom, liberation and wealth and being thin, attractive and wealthy [1–4].

Adolescence, an important stage of human life, involves crucial developmental processes through which a person crosses over from childhood to adulthood. These changes may potentially pose pressure on adolescents and cause multidimensional problems necessitating a holistic approach. The majority of adolescents experience some level of emotional, behavioural and social difficulties. On the other hand, adolescents naturally tend to resist any dominant source of authority such as parents and prefer to socialise more with their peers than with their families. Research suggests that adolescents are more likely to modify their behaviours and attitudes if they receive health messages from peers who face similar concerns and pressures [5].

The importance of readily accessible tobacco-produced items, peer pressure, tobacco commercials and price policies in cigarette, cigar and narghile (shisha) on influencing adolescents starting to smoke cannot be overstated. There is a variety of different models of education and behaviour to minimise tobacco consumption among young people and change their perception of behaviours concerning smoking [6].

Approximately one-fourth of adolescents start using tobacco around age 10. Advertisements by the tobacco industry, easy access to tobacco products, low pricing and peer pressure are some of the influences that are effective in starting smoking in adolescents. An additional important factor is that adolescents try to both enhance their image and look 'cool' among their friends [6, 7].

It is essential to design programs for developing life skills to prevent adolescents from beginning to smoke.

These initiatives should include education on—how to say no, oppose insistence, cope with stress, manage anger and communicate and problem solve. These programs may include ways for improving social capabilities, taking a socially responsible approach or involving school-based interventions or peer education.

Influence of peers on youth is certainly of great importance. A peer role model is a friend whose behaviours and suggestions can convince others and that he or she is aware of both the meanings and difficulties of being a fellow peer [8, 9]. The education of peers (peer education) aims at using a positive peer influence on other fellow peers [9, 10].

Peer educators and trainers have to be chosen from among highly respected individuals who are capable of both listening and communicating. They also should have practical and scholarly leadership and role modelling skills. Peer educators and trainers should be able to provide intentional and energetic interference in both positive and negative situations when needed. Also, they should show non-judgmental or unprejudiced attitudes towards their colleagues and clients [10]. However, the process of peer education/training can be negatively affected when the above is not taken into account [11].

## 2. Who is a peer?

Peer is an Arabic word. The word means 'equivalent in terms of age ... of the same age, contemporary'. Peers are individuals in the same social group. A social group can be based on common characteristics including age, gender, background, sexual preference, occupation,

socio-economic and/or health status and a sense of belonging. Peers play a critical role in the psychosocial development of most adolescents. Peer education can be carried out in many different places where young people hang out including schools, universities, clubs, workplaces, streets or sanctuaries [1, 5, 6, 11, 12]. Therefore, peer education is considered a health promotion strategy for adolescents [5].

### 3. How is peer education defined?

Education is the development of knowledge, attitudes or beliefs and behaviours after a learning process. Peer education is, in the broadest sense, that someone helps a peer. Peer education is a planned educational model that aims to change knowledge, behaviour and attitudes in groups with similar language and behaviour, which have both social interaction and equal status with each other [12].

Peer education is defined as all informal or programmed educational activities that young people are enthusiastic about being educated on and is aimed at increasing awareness of health protection by developing knowledge, attitudes, beliefs and skills.

Peer education is based on educating, volunteering and leading young people on certain subjects and sharing the acquired information with peers. According to Topping, being in a social group and not being a professional teacher is necessary for peer education and peer education is learning while educating. Formen and Cazden stated that, by definition, there should be a difference in knowledge levels of two participants for the interaction to be peer education [13].

Peer teaching is defined as the transfer of the student into the classroom, outside the classroom, under the control of the teacher of knowledge. It is based on the training both volunteer and pioneer young people have received on specific issues and then sharing the acquired knowledge with peers. Educators often use peer aid as it enhances the level of learning within the school, facilitates co-operation rather than competition among students and provides emotional benefits to participating individuals.

Peer teaching is defined as the transfer of knowledge from the student into the classroom or outside the classroom, under the control of the teacher. It is based on the education that volunteers and pioneer young people have on specific subjects and then enables them to share newly acquired knowledge with peers. Educators often use peer help as it enhances the level of learning within the school, facilitates co-operation rather than competition among students and provides emotional benefits to participating individuals [14, 15].

Peer education involves planned activities that are performed on a volunteer basis and not subject to assessment by subjects having the same experience for improving both their knowledge and skills [6, 16].

Peer education is different from classical education methods. In classical education, there is a hierarchical relationship, and knowledge transfer is in one direction, from the educator to the student. As peers do not give each other rewards or punishment, peer groups present an ideal environment for sharing information, learning new things and developing ideas through peer education [14].

Peer education is a popular concept that implies an informal approach, a communication channel, a methodology, a philosophy and a strategy. In the days of kings and queens (in England), peers were nobleman, aristocrats, lords, titled men and patricians. The English term—peer, refers to ‘one that is of equal standing with another: one belonging to the same societal group especially based on age, grade or status’. In modern times, the term has come to mean fellow, equal, like, coequal or match according to the dictionary of synonyms (Oxford Thesaurus). At present, the term is used when referring to both education and training [12, 17, 18].

Peer education is considered one of many tools available to reach young people with information and skills. Activities in peer education programs vary widely in the type and frequency of activities, the number and intensity of contacts and the frequency of follow-up. Peer education is often undertaken because it is believed to be both an easy and convenient way to reach a large number of people with information, using inexpensive, volunteer staff. However, when done well, peer education requires intensive planning, coordination, supervision and resources. In fact, there are program costs associated with each element of a peer education program—training, support, supervision, supplies, allowances—all of which require realistic budgeting and careful as well as continuous monitoring [18–21].

Peer education is a chance that affords young people the opportunity to access the necessary information and services about protecting their health. Peer education plays a crucial role in informing young people, about important subjects like smoking, drugs, alcohol, sexual health, contraception and healthy eating habits [22, 23].

#### 4. Methods of peer education

Different methods of peer education have been proposed. The target audience can be reached through a variety of interactive strategies such as small group presentations, role-play or games [13]. Formal delivery of peer education in highly structured settings such as class teaching in schools is also possible. Other methods may include informal tutoring in unstructured settings during everyday interactions or individual discussions and counselling. Various methods are adopted based on the intended outcomes of the project (e.g. communicating information, behaviour modification or development of skills) [5].

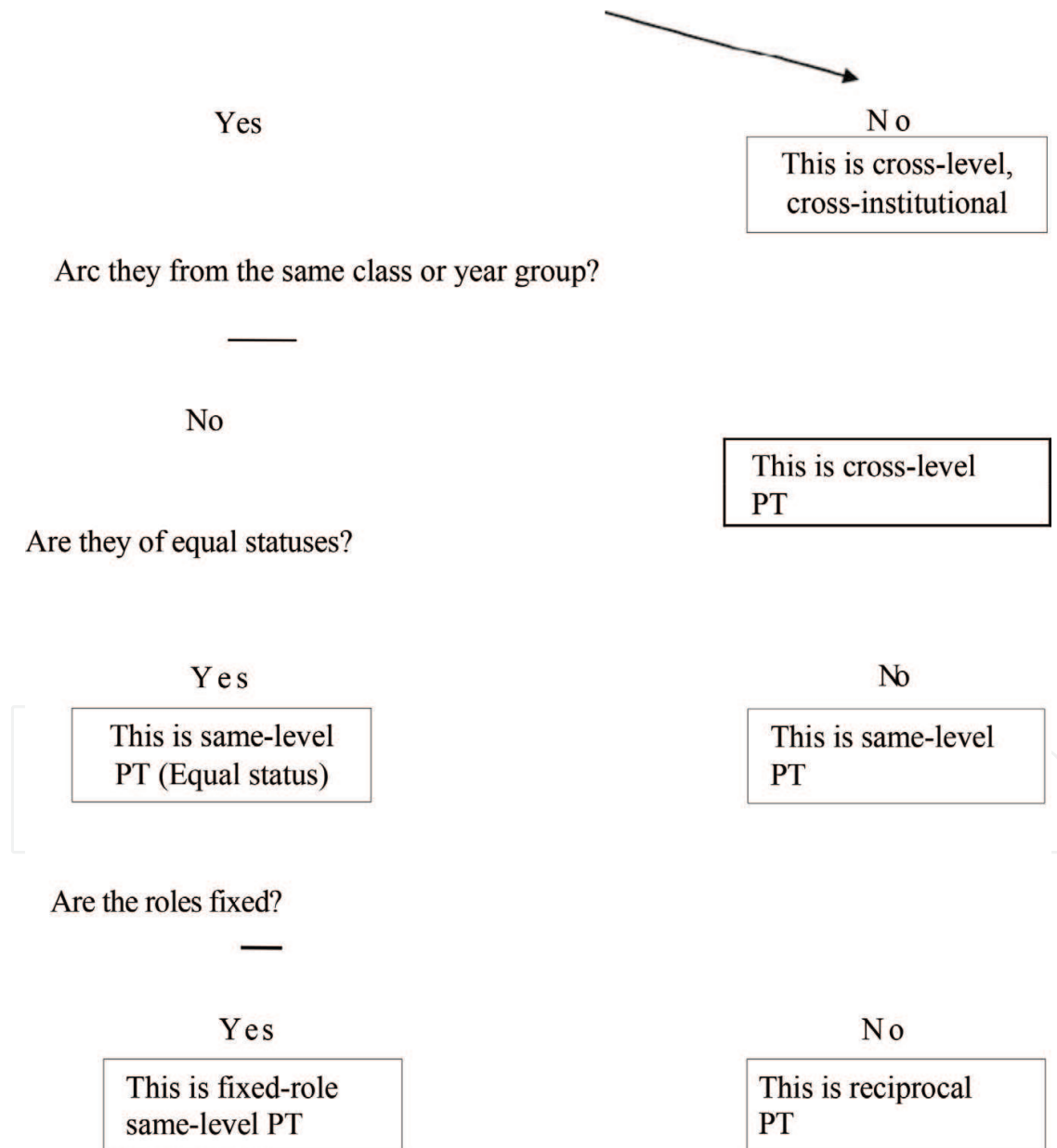
Usually, two types of peer education models are applied. The first model is the peer tutoring (cross-age peer tutoring) model. In this model, the teaching peer is older than the learning peer is. The second model is the peer tutoring model in which peers in the same age group, including the whole class, teach each other (same age peer tutoring) [15].

Peer education can be planned in two ways according to the characteristics of peers. In cross-age peer tutoring, the peer tutor is older than the tutee, and in same age peer tutoring, both the tutor and the tutee are the same age [14, 20].

1. **Reciprocal peer tutoring:** both students are on the same level. In reciprocal peer tutoring, students can work at the same level and both students assume the roles of teacher and student. In the reciprocal peer tutoring model, both teachers and learners can benefit.

2. Cross-level peer tutoring: one of the students is more advanced than the other is. Cross-level peer matching occurs between more successful students and students with learning difficulties. The student with academic superiority always teaches and the other always learn [15, 24].

Tutoring may also take place between true 'peers', students with similar experiences and achievement levels. When student tutors and tutees are in the same class group, share similar levels of expertise and are at similar levels of development, the peer tutoring (PT) arrangement is referred to as being same-level. In same-level tutoring, roles of tutor and tutee may be fixed or may change. These distinctions are elaborated in **Figure 1**.



**Figure 1.** Varieties of peer tutoring ([20], pp. 8).



Topping (1996) identified nine different forms of peer education:

1. small group education at different ages,
2. personalised teaching system,
3. complementary teaching,
4. same age fixed role education,
5. same age peer education,
6. fixed role education between different ages,
7. same age group education,
8. writing with peer help and
9. distance learning with peer help.

## 5. How should we plan peer education?

The organisation of peer tutoring involves three key variables:

1. the status of participants,
2. the location of the activity and
3. the roles assumed [20].

Peer education programs should be systematically planned. The expectations and methods that would be used in peer education should be clearly explained. Explicitly defined roles and responsibilities of peer tutors during education, their functions and behaviours as role models and feedback and/or reinforcement processes are of tantamount importance. Peer tutors should undergo a planned, well-organised education program for both developing and embracing their teaching skills. It has been determined that the teaching skills of peer tutors will be enhanced if they are promoted [25].

Participants of the peer group should be carefully selected so that the peer group formed will consist of individuals who are enthusiastic and volunteer for participation.

Peer group education should be carried out in a certain systematic way. In interim meetings held with the peer group, primarily the questions 'which activity will be done by whom', 'for what duration (how long)' and 'how' should be answered. In subsequent meetings, These things that can be done and solutions for activities that cannot be performed should be determined again [6, 13, 14, 24].

Problems that may arise before and during peer education should be determined beforehand and the peer tutor should be supported in solving these prospective as well as subsequent problems. After peer education is completed, an assessment should be performed (**Table 1**).

<b>Organising peer tutoring</b>		
Context	1. Problems 2. Support	
Objectives		
Curriculum area		
Selection and matching of participants	1. Background factors 2. Age 3. Numbers of participants 4. Contact constellation 5. Ability 6. Relationships	7. Participant partner preference 8. Standby helpers 9. Recruiting 10. Parental agreement 11. Incentives/reinforcement 12. Social reinforcement and modelling
Helping technique	1. General peer tutoring skills 2. General social skills 3. Drill & practice vs. conceptual challenge 4. Combinations of the above 5. Correction procedure	6. Master reference source 7. Praise 8. Troubleshooting 9. Behavioural methods 10. Mutual gains 11. Evidential basis
Contact	1. Time 2. Place 3. Duration	4. Frequency 5. Project period
Materials	1. Structure 2. Difficulty and choosing 3. Availability and Sources	4. Access 5. Progression criteria 6. Recording
Training	1. Staff training 2. Participant training organisation 3. Venue and space 4. Materials and equipment 5. Participant training content	6. Verbal instruction 7. Written instruction 8. Demonstration 9. Guided practice and feedback 10. Checking and coaching 11. Organising and contracting
Process monitoring	1. Self-referral 2. Self-recording 3. Discussion 4. Direct observation	5. Project process 6. Recognition of successful students 7. Fraud
Assessment of Students		
Evaluation		
Feedback	1. Reassurance	

**Table 1.** Structured planning for organising peer tutoring.



Situations such as the absence of pre-defined aims and targets, discrepancies between planning and implementation and budget shortfalls negatively affecting peer education may lead to the failure of peer education. In addition, the complexity of the management process, lack of enthusiastic and talented personnel, insufficient equipment and lack of appreciation of tutors may result in the failure of peer education [10].

Various activities can be organised within the scope of peer education. These can be standing activities, concerts, promotional merchandise, theatre, sports events, film screenings, conferences, seminars, workshops, individual or small group information sessions, keeping a diary, radio/TV programs and festivals. Also, print materials-based activities including brochures, booklets and posters can be helpful. In addition, information and communication technologies such as internet-based consulting services, social media sites and telephone helplines can be used [26, 27]. The use of popular people and leaders as peer educators for community-based programs can have significant effects [26].

The success of peer education is closely linked to both good planning and organisation. Peer education application steps are:

1. determination of the subject for peer education,
2. determination of peer tutors and learners,
3. determination of the environment for peer education [skill lab/clinic],
4. education of peer tutors,
5. application and
6. evaluation and feedback [12].

## **6. What should be the characteristics of peer tutors?**

Peer tutors should be chosen from among individuals who have both listening and interpersonal communication skills. They should be individuals who are accepted as well as respected by the group. Furthermore, peer tutors should have leadership qualities; the potential to serve as a role model; have time, energy and desire to work as a volunteer; have the ability to intervene in any positive or negative situation in the group; and not display any judgemental attitude [5, 28].

A peer tutor should be a model to peers by his/her respectable appearance and compliant behaviours. Peer tutors who exhibit healthy behaviours positively affect the same behaviours of peers. Peer tutors and their students should speak a language that is more similar than that spoken by teachers, and traditional mentoring relationships should not be used in peer tutoring [16, 29].

Peer groups encourage young people's interest in peer education programmes and thereby increase their participation in these programmes.

Peers indicate that, away from authority, they can speak, act, discuss and learn more easily in the group. They can complete activities they cannot perform near authority figures, gain independence and express themselves much better. Peers entertain, not threaten their friends. Peers' point of view is magnified in the group: they gain new positive behaviours by interacting with each other. The newly acquired knowledge and skills are also useful in adulthood. Peer education provides young people with not only leadership experience but with leadership qualities and develops both teamwork skills and team spirit. In this way, peer education helps them to affect each other by serving as role models. It allows young people to take responsibility for themselves as well as their actions [16, 27, 29, 30].

In peer education, the educator and the target audience are speaking the same language. Peer education provides easy access to hard-to-access groups. In peer groups, peers feel that they have equal status; a collaborative learning environment is established and they try to help each other [6, 27].

## **7. Strengths of peer education**

In recent years, the many positive benefits of peer education programmes have been recognised. This recognition may be responsible in large part for the increasing popularity of peer education as an alternative to classical educational approaches [12].

The difference between peer education and classical education methods is that classical educational methods involve a hierarchical relationship, creating a power imbalance between educators and students. In classical education, the flow of knowledge tends to be one-sided from the educator to the student. In peer education, on the other hand, peers are not in positions to reward or punish each other; they use the same language and influence each other to create a suitable learning environment [12, 15]. In peer education, it is beneficial that peers encourage each other, individuals feel comfortable with their peers. In peer groups, peers can do what they cannot do near authority, and express their own attitudes more easily [15, 26].

Peer education is described as a less costly method than other training techniques conducted by professionals [26]. Peer education is an important benefit to community health in many areas, including smoking cessation, alcohol and drug abuse reduction, violence prevention and awareness, cancer prevention and early diagnosis, nutrition adequate and balanced food intake and sexually transmitted disease prevention and family planning strategies [27]. A successful peer education programme should be adapted to changing environmental conditions, cultural and economic changes and both health and social conditions.

## **8. What are the limitations of peer education?**

In the classical education approach, knowledge transfer is from the educator to the student. As classical educators oppose using peer education, it cannot be widely used. Besides, impatience of peer educators, disorganisation during the selection of both peer volunteers and their school programme during peer education and insufficient success of peers in chosen subjects

prevent the use of peer education. On the other hand, undesirable interactions between peer tutors and tutees, and the desire of peer tutors to exercise power and authority over tutees also negatively affect peer education [15, 16, 27, 29].

## 9. The theoretical basis for peer education

When undertaking a peer education programme, objectives are often developed to reinforce positive behaviours, to adopt new, recommended behaviours or to change risky behaviours in a target group. Why and how do people adopt new behaviours? The fields of health psychology, health education and public health provide relevant behavioural theories that explain this process. It is important to be aware of these theories because they provide a theoretical basis that explains why peer education is beneficial. Moreover, these theories can help guide both the planning and design of peer education interventions. The following theories and models of behavioural change are of particular relevance to peer education [22, 30].

Studies are evaluating the effect of peer education programmes on adolescents. The implementation of peer education is based on several cognitive-behavioural models and theories on both the regulation and rehabilitation of preventive health behaviours. Some of the models and institutions that shed light on the studies of health behaviour are the social learning theory, diffusion of innovation theory, theory of participatory education, health belief model, planned behaviour theory, reasoned action theory and transtheoretical model.

### 9.1. Theory of reasoned action

Developed by Fishbein and Ajzen (1901) to explain behaviour from the perspective of social psychology, and to clarify the intentions of attitudes, along with subjective norms, towards people's behaviour, this theory states that intention is the direct predictor of behaviour. On the other hand, intention refers to tendencies/plans of individuals to exhibit or not to exhibit the behaviour concerned. Ajzen (1991) speaks of intention as a level of desire that the individual has to exhibit a behaviour and the intensity of the effort he/she tends to put forth [31, 32].

This theory states that the intention of a person to adopt a recommended behaviour is determined by:

- A person's subjective beliefs, that is, his or her own attitudes towards this behaviour and his or her beliefs about the consequences of the behaviour.
- A person's normative beliefs, that is, how a person's view is shaped by the norms and standards of his or her society and whether people important to him or her approve or disapprove of the behaviour [18].

### 9.2. Social learning theory

Asserts that some individuals function as role models of behaviour due to their aptitude for stimulating behaviour changes in other individuals [5]. This theory is largely based on the work of psychologist Albert Bandura [18, 23]. He states that people learn:

- Through direct experience.
- Indirectly, by observing and modelling the behaviour of others with whom the person identifies [for example, how young people see their peers behaving].
- Through training that leads to confidence in being able to carry out behaviour.

This specific condition is called self-efficacy, which includes the ability to overcome any barriers to performing the behaviour.

### **9.3. Diffusion of innovation theory**

This theory argues that social influence plays an important role in behavioural change. The theory considers an innovation as new information, an attitude, a belief or a practice that is perceived as novel by an individual and that can be diffused to a particular group. This theory employs 'opinion leaders' to propagate information, influence group norms and finally act as change agents within the population to which they belong [5]. The role of opinion leaders in a community, acting as agents for behavioural change, is a key element of this theory. Their influence on group norms or customs is predominantly seen because of person-to-person exchanges and discussions [18].

### **9.4. Theory of participatory education**

This theory states that empowerment and full participation of the people affected by a given problem is key to behavioural change [18]. The theory of participatory education has also played an important role in the development of peer education. According to participatory or empowerment models of education, powerlessness at the community or group level along with socioeconomic conditions caused by the lack of power are major risk factors for poor health [5].

### **9.5. Health belief model**

The health belief model was developed in the early 1950s by social psychologists, Godfrey Hochbaum, Stephen Kegels and Irwin Rosenstock. It was used to both explain and predict health behaviour, mainly through perceived susceptibility, perceived barriers and perceived benefits. This model suggests that if a person has a desire to avoid illness or to get well (value) and the belief that a specific health action would prevent illness (expectancy), then a positive behavioural action would be taken concerning that behaviour. An application of this model, the social ecological model for health promotion, views behaviour as being determined by the following:

- Intrapersonal factors—characteristics of the individual such as knowledge, attitudes, behaviour, self-concept and skills.
- Interpersonal processes and primary groups—formal and informal social networks and social support systems, including families, work groups and friendships.
- Institutional factors—social institutions with organisational characteristics and both formal and informal rules and regulations for operation.

- Community factors—relationships among organisations, institutions and informal networks within defined boundaries.
- Public policy—local, state and national laws and policies. This theory acknowledges the importance of the interplay between the individual and the environment and considers multilevel influences on unhealthy behaviours. In this manner, the importance of the individual is de-emphasised in the process of behavioural change [18, 31, 32].

### **9.6. IMBR model (information, motivation, behavioural skills and resources model)**

The IMBR model addresses health-related behaviour in a way that can be applied to and across different cultures. It focuses largely on the information (what), motivation (why), behavioural skills (how) and resources (where) that can be used to target at-risk behaviours [18, 26, 33].

### **9.7. Transtheoretical model**

This model was developed by Prochaska and DiClemente in 1983. Prochaska and DiClemente started to work on a theoretical model involving behavioural change in the 1970s. They observed people who tried to quit smoking without a professional initiative and discovered that people who change themselves went through specific stages when they were trying to reduce or eliminate a high-risk behaviour. A theoretical model is an intentional behavioural change model that focuses on individual decisions. First, the theoretical model used in smoking cessation programs was used for different health behaviours in health improvement programs over time (e.g. overeating and weight control, exercise, coping with stress, substance abuse). This model focuses on helping individuals make willing behavioural changes and understand the process of change. Both preparations and approaches to changing health behaviours are appropriate for the individual's change stage. In traditional behavioural approaches, Prochaska and Velicer (1997) define change as a gradual, continuous and dynamic structure, while change is a sharp and direct conclusion. They argue that individuals do not go directly to new behaviours (smoking cessation) from old behaviours (e.g. smoking) but progress in stages. Using the theoretical model, the stages of change, the process of change, decision-making balance and an organisational scheme of self-efficacy, the individual reveals problem-interaction patterns and problem-solving strategies [34, 35].

## **10. The importance of peer education in cessation of tobacco use and providing protection**

Along with increased knowledge about the harms of tobacco, a variety of studies and control programs should be developed, especially for children and adolescents, to prevent using tobacco products and smoking in particular [30]. Initiatives to prevent tobacco product testing by children and adolescents should be planned to avoid the gradual increase of cigarette use among young people [1–3].



Training programs for cessation of the use of tobacco products and for establishing protection programs may be more effective if applied before children start using tobacco products or leave school. The general aims of these training programs are to increase the number of people who grow up without ever using tobacco products, to reduce illnesses caused by tobacco products, to delay the decision to start using tobacco products, to reduce the risk of addiction to tobacco products and to speed up the cessation of current use of tobacco products [12].

Education establishes non-smoking as an attitude provides an environment without cigarette smoke and creates opportunities for positive role models.

When starting to use tobacco products, peers and role models are quite effective. Peer education models should be used in health projects that aim to reduce the frequency of tobacco product use among young people. The inclusion of peers in anti-smoking training programs will enhance the effectiveness of these programs by ensuring that the main focus is reduced tobacco product use among young people.

There is no hierarchical relationship and power imbalance among peers in classical education methods. One-way communication occurs between peers. In peer education, the fact that peers do not have a position to reward or punish each other helps to create an appropriate environment for implementation, learning and development. Through peer education, enthusiastic young peers are planning activities with their friends to increase their awareness of protecting their own health.

Peer groups encourage young people to take part in a tobacco-related training program and increase young people's participation in the program. Peers are more comfortable talking, moving, discussing and learning about the harms of tobacco and tobacco products by finding a comfortable environment in the group and by being away from the authorities.

Peers who do not use tobacco products and participate in their programs to avoid using their friends are not seen as threats to their parents and school officials by their friends. Peers who are role models to each other and have the ability to influence each other are more easily accessible to power groups.

Peers are beginning to talk about the harms of tobacco use in conversations with their friends on the way, in the garden, in the classroom, in and out of school. Talking about the harms of cigarette with friends after peer education is increasing at the end of the study period. The posters and brochures they prepare inside and outside the school are hanging on the school board, class panels that all students can see. She shares her experiences with her friends and tries to find out what they think. Peers set up groups on social networking sites and share their experiences with their friends over these sites.

Peers are planning a variety of activities to improve their wellness skills, other than conversations about the harms of tobacco use. Peers exchange information about the proposed and implemented solutions to the disruptions that occur in the educational process.

In peer groups, female students are more willing to work in the program and are more active during the program. While girls are more successful in recording the conversations they have made with their friends, especially on the panels, presentations, presentations, and men, men are more successful in creating and maintaining the page in social media.



After peer education, the behaviour of peers changes positively, the ability to cope with the challenges of no-promises, and the difficulties experienced during smoking cessation are developing.

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